



City of Palmdale 2045 General Plan Update

Final Environmental Impact Report
SCH# 2021060494

prepared by

City of Palmdale
Department of Economic and Community Development
38250 Sierra Highway
Palmdale, California 93550
Contact: Megan Taggart, Planning Manager

prepared with the assistance of

Rincon Consultants, Inc.
180 North Ashwood Avenue
Ventura, California 93003

August 2022

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- Appendix B CalEEMod Modeling Outputs
- Appendix C Special Status Species List
- Appendix D Traffic Report
- Appendix E Traffic Noise Prediction Model
- Appendix F Mitigation Monitoring and Reporting Program

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Executive Summary

This section summarizes the characteristics of the proposed Palmdale 2045 (the Plan), project alternatives, and the project's environmental impacts.

Project Proponent

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Project Location

Palmdale is in the Antelope Valley, in the 'high desert' portion of Los Angeles County. The Antelope Valley is disconnected from the Southern California coastal and Central California valley regions by the Tehachapi Mountains to the northwest and by the San Gabriel Mountains to the south. The far western portions of the City and the Planning Area are in the foothills of the San Gabriel Mountains. Nearby communities include the city of Lancaster and the unincorporated community of Quartz Hill to the north; as well as other unincorporated communities such as Lake Los Angeles to the east, Sun Village, Littlerock, and Pearblossom to the southeast, Acton to the south, Agua Dulce to the southwest, and Leona Valley to the west. The Antelope Valley Freeway (SR-14) traverses the Planning Area from north to south, and SR-138 runs as Palmdale Boulevard in an east/west direction from its intersection with SR-14 to 47th Street East, then south along 47th Street east, then southeast along Fort Tejon Road and Pearblossom Highway to Littlerock.

Project Characteristics

Palmdale 2045 is intended to function as a policy document to guide land use decisions in the City's Planning Area over 23 years (2022-2045). According to State law, General Plans are required to cover nine topics: land use, circulation, housing, conservation, open space, noise, air quality, safety, and environmental justice. Jurisdictions may address these topics across different chapters, or elements, of their general plan, and include any other topic that is relevant to planning its future. The updated City of Palmdale General Plan will include the State required topics plus economic development, urban design, infrastructure, military readiness, community facilities, sustainability and resilience, and climate change.

Palmdale 2045's vision for the city was developed with extensive community input and in recognition of the state's planning priorities. Palmdale 2045 focuses on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Palmdale 2045's vision for the future includes the following vision themes.

- **Unified and welcoming community.** The Palmdale community values opportunity, diversity, and unity, and seeks to promote Palmdale's positive reputation while boosting community beautification
- **Active and vibrant downtown.** Palmdale residents desire a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale
- **Diverse and high-quality job options.** Palmdale seeks to retain and expand its employment base through training for key industries, connecting residents to local jobs, and promoting telecommuting within the city
- **Diverse and resilient local economy.** Palmdale values its existing aerospace presence and aims to leverage and diversify new economic opportunities from expanded transportation connections
- **Safe, healthy place to live and work.** Palmdale residents want to address crime and safety, increase access to parks and open space, and support marginalized communities like foster youth and those experiencing homelessness
- **High quality medical and mental healthcare.** As a medical provider shortage area, Palmdale seeks to improve access to quality medical and mental healthcare services and facilities by attracting physicians, maintaining the Palmdale Regional Medical Center, and expanding services
- **Housing options for residents at different stages of life and ability.** The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the city that support residents of all abilities through different stages of life
- **High quality and accessible educational opportunities.** Citizens of Palmdale seek to promote and expand educational opportunities in the City including higher education, trade school, and formal and informal training programs
- **Beautiful natural setting.** The Palmdale community values its natural setting and seeks to improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky
- **Forefront of transportation innovations.** On the cusp of major regional transportation improvements, Palmdale seeks to leverage planned investments and improve local transit opportunities
- **General Plan implementation.** Residents of Palmdale value the long-term vision of the General Plan Update and desire regular review and update of the Plan including metrics for tracking implementation

Palmdale 2045 identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near

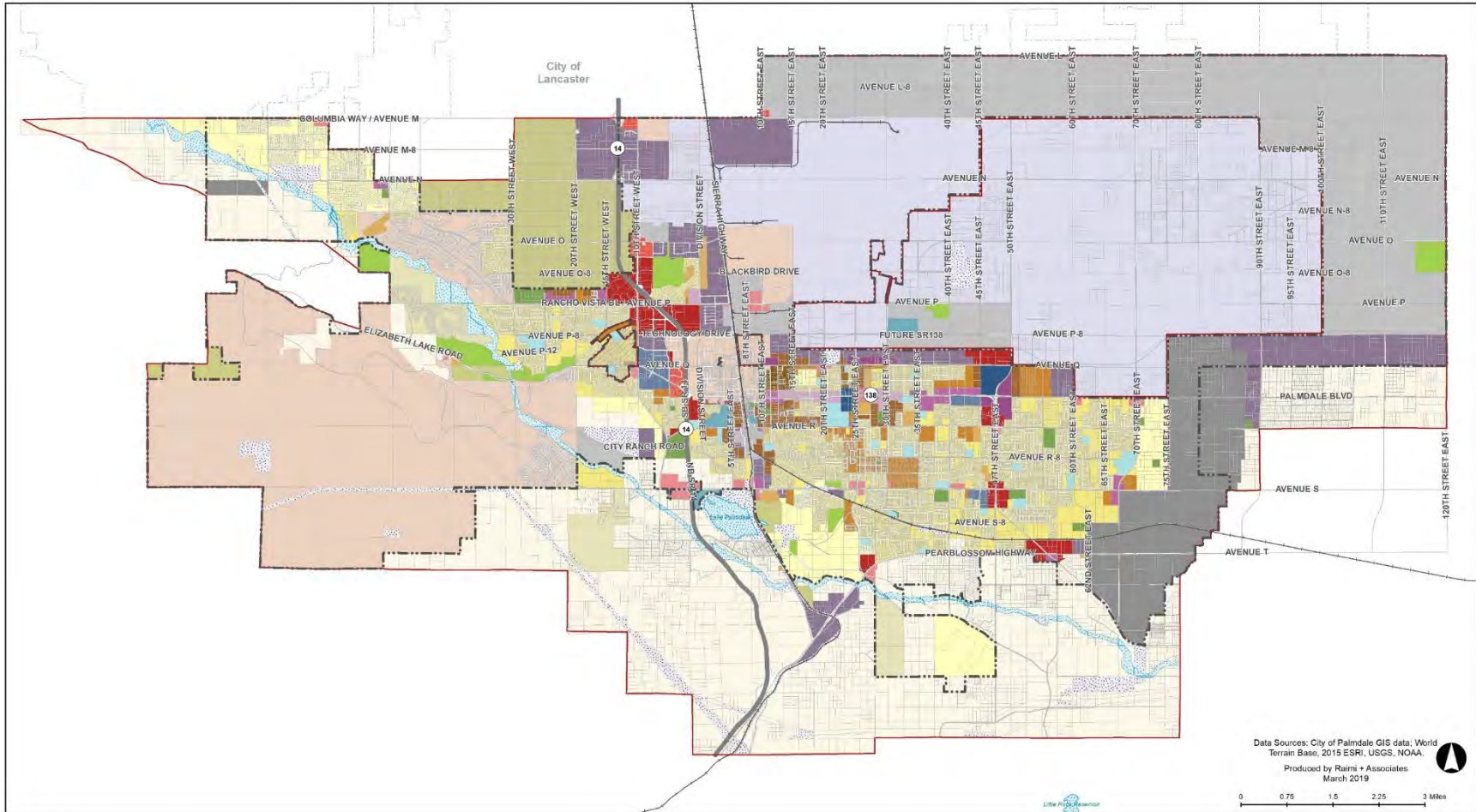
existing neighborhoods, and building off existing industrial and aerospace business opportunities. These strategies will support existing and future employees, businesses, and residents by improving quality of life in Palmdale.

The following actions will also be taken by the City of Palmdale in connection with the General Plan Update and are also considered part of the proposed project to be analyzed in the forthcoming EIR:

- Adoption and implementation of the General Plan Update (Palmdale 2045 Plan)
- Adoption and implementation of the Climate Action Plan
- Adoption and implementation of the Comprehensive Zoning Ordinance Amendment
- A slight expansion of the boundary of the Palmdale Transit Area Specific Plan. Currently, many of the parcels along the external boundary of this Specific Plan area have split zoning because they are partly inside and partly outside the Specific Plan area. This proposed expansion would fully include these parcels within the Specific Plan area. Because the Specific Plan area is in the core of the city, this action would not affect the Planning Area of the proposed General Plan Update or require annexations.

Palmdale 2045 also includes an update of the City's Housing Element, in compliance with the requirements of State Housing Element law, which required the City to adopt an updated Housing Element by October 2021. A description of City actions taken to date in connection with the Housing Element Update is included in Section 2.3.2 of this EIR. While an Addendum was prepared for the Housing Element Update, the Housing Element Update is also analyzed in this EIR, as necessary, in the context of the overall Plan. The Housing Element Update will be readopted as part of the Plan after certification by the California Department of Housing and Community Development (HCD).

Figure ES-1 Proposed General Plan Land Use Map



Data Sources: City of Palmdale GIS data, World Terrain Base, 2015 ESRI, USGS, NOAA.
 Produced by Raini + Associates
 March 2019

Updated 4/19/22

Legend

- | | | | | | | | |
|-----------------------------|-----------------------------|----------------------------|-------------------------|----------------------|-----------------------------|------------------------|------------------------|
| Equestrian Residential | Single Family Residential 3 | Neighborhood Residential 4 | Employment Flex | Health and Wellness | Mineral Resource Extraction | Public Facility-School | City Boundary |
| Low Density Residential | Neighborhood Residential 1 | Mixed Use 1 | Neighborhood Commercial | Educational Flex | Specific Plan | Public Facility-Civic | Sphere of Influence |
| Single Family Residential | Neighborhood Residential 2 | Mixed Use 2 | Visitor Commercial | Industrial | Open Space | Utilities | Major Highway/Arterial |
| Single Family Residential 2 | Neighborhood Residential 3 | Mixed Use 3 | Regional Commercial | Aerospace Industrial | Public Facility-Park | California Aqueduct | Railroad |

Project Objectives

As explained in Section 2.3.1, the Plan's objectives are enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Based on these objectives and input from the community, the Plan includes the overarching purposes listed in each topical chapter to guide Plan policies and City decision-making. The overarching purpose is a vision statement that provides general direction for the chapter. The goals in each chapter specify ends that help achieve the overarching purpose. The policies are specific statements that guide decision-making.

Alternatives

As required by CEQA, this section evaluates a range of alternatives to the proposed project. Alternatives analyzed in Section 6 include the following:

- Alternative 1: No Project (see Section 6.1)
- Alternative 2: Reduced Growth Alternative (see Section 6.2)

Each of the alternatives discussed in this section has certain advantages and disadvantages as compared to the proposed Plan, as described below.

No Project (Current General Plan). The "No Project" Alternative involves continued implementation of the City's current General Plan, the last comprehensive update of which was adopted in 1993. The No Project Alternative assumes that the proposed Plan would not be adopted and therefore future development would be carried out under the City's existing General Plan policies and land use designations. The overall amount of growth anticipated to occur under the City's current General Plan is less than anticipated to occur under the proposed Plan. The proposed Plan includes additional land use designations for mixed housing densities focused around the future downtown area and across Palmdale Boulevard with education and medical districts strategically distributed within the City. Therefore, it also increases the City's total potential population and amount of commercial development compared to the current General Plan. The Plan identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. In contrast, the No Project Alternative would continue to facilitate development in the same pattern as currently seen in the Planning Area.

Reduced Growth Alternative. The Reduced Growth Alternative (Alternative 2) is included in this EIR to address potential growth-related impacts associated with the Plan. Although this alternative would result in less overall development than the Plan, development is assumed to occur in the same general locations as under the Plan, and be subject to the same goals, policies, and development standards as under the Plan. Implementation of the Reduced Growth Alternative would result in development within the Planning Area that would generally meet the project objectives established for the Plan, although in some cases to a lesser degree than the Plan. Further,

this alternative would result in lower housing density than the Plan and thus would, overall, result in less housing and population growth.

Environmentally Superior Alternative. When the two alternatives (No Project and Reduced Growth) are compared to each other and the Plan, the Reduced Growth Alternative would be environmentally superior because apart from greater impacts to Land Use and Planning and Transportation, it would have reduced or similar environmental impacts to the Plan, while the No Project Alternative would result in greater impacts to Biological Resources, Cultural Resources, Energy, Geology and Soils, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, Noise, Transportation and Traffic, Tribal Cultural Resources and Wildfire, with reduced impacts in Air Quality, Hydrology and Water Quality, Population and Housing, Public Services, Recreation, Utilities and Service Systems, and Wildfire.

Areas of Known Controversy and Issues to be Resolved

Responses to the Notice of Preparation (NOP) of a Draft EIR and input received at the EIR scoping meeting held by the City are summarized in Chapter 1, *Introduction* and Table 1-1 of that section. No known areas of controversy or other issues to be resolved have been identified based on this public input.

Required Approvals

With recommendations from the City's Planning Commission, the Palmdale City Council will need to take the following discretionary actions in conjunction with or subsequent to the Plan:

- Certification of the 2045 General Plan Update EIR
- Adopt the General Plan Update (Palmdale 2045)
- Adopt the Climate Action Plan
- Adopt any Zoning Ordinance Amendments required to make the Zoning Ordinance consistent with the General Plan Update
- Adopt the HCD-certified Housing Element Update, in compliance with the requirements of State Housing Element law
- Adopt revisions to the Palmdale Transit Area Specific Plan to slightly expand the boundary of this Specific Plan. Currently, many of the parcels along the external boundary of the Specific Plan area have split zoning because they are partly inside and partly outside the Specific Plan area. This proposed expansion would fully include these parcels within the Specific Plan area. Because the Specific Plan area is in the core of the city, this action would not affect the Planning Area of the proposed General Plan Update or require annexations.

Palmdale 2045 does not involve any annexation of lands or adjustments to the City's Sphere of Influence. If annexation is pursued in the future, it would require approval from the Los Angeles Local Agency Formation Commission. The California Department of Conservation, Division of Mines and Geology, has no discretionary authority over the Plan, but will review the plans and policies relating to seismic safety for compliance with state regulations.

Summary of Impacts and Mitigation Measures

Table ES-1 summarizes the environmental impacts of the Plan, proposed mitigation measures, and residual impacts. Impacts are categorized by their severity. Significant and Unavoidable impacts require a statement of overriding considerations to be issued per Section 15093 of the CEQA Guidelines if the Plan is approved. Impacts classified as Less than Significant with Mitigation Incorporated are significant adverse impacts that can be feasibly mitigated to a less than significant level and that require findings to be made under Section 15091 of the CEQA Guidelines. Less than Significant impacts are those that do not exceed identified thresholds and do not require findings. No Impact indicates the Plan would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Table ES-1 Summary of Impacts, Mitigation Measures, and Significance after Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Aesthetics		
Impact AES-1: Future development carried out under the Plan may affect public views along designated scenic corridors. Adherence to development review procedures and Plan policies would reduce potential impacts to scenic vistas to a less than significant level.	None required.	Less than significant without mitigation.
Impact AES-2: Future development carried out under the Plan may impact scenic resources, including trees, rock outcroppings, and historic buildings. This development could result in direct impacts to scenic resources should construction result in the physical demolition, destruction, relocation, or alteration of a scenic resource. Compliance with Plan goals and policies would reduce potential impacts to scenic vistas to a less than significant level.	None required.	Less than significant without mitigation.
Impact AES-3: While development under the Plan could change the visual character and quality of portions of the Planning Area, the Plan contains goals and policies specifically designed to protect areas of high visual character and quality and improve areas of low visual character and quality. Impacts would be less than significant.	None required beyond compliance with applicable Plan policies and supporting City regulations.	Less than significant without mitigation.
Impact AES-4: New development carried out under the Plan would add new sources of light and glare to the Planning Area, but development would be required to comply with the City’s lighting regulations and impacts would therefore be less than significant.	None required.	Less than significant without mitigation.
Agriculture and Forestry Resources		
Impact AG-1: The Plan would not convert Farmland to non-agricultural use, conflict with existing zoning or a Williamson Act Contract, or involve other changes that could result in the conversion of Farmland to non-agricultural use. There would be no impact.	None required.	No Impact.
Impact AG-2: There is no land in the Planning Area designated or zoned as forest land, timberland, or timberland production. Therefore, the Plan would not conflict with zoning for forest land, timberland, or timberland production, or result in the conversion of forest land to non-forest use. There would be no impact.	None required.	No Impact.

Impact	Mitigation Measure	Significance After Mitigation
Air Quality		
<p>Impact AQ-1: Individual development projects carried out under the Plan would generate construction and operational-related emissions. Such emissions may conflict with or obstruct the implementation of the AVAQMD’s Ozone Attainment Plan. Implementation of Plan policies, compliance with existing regulations, and implementation of mitigation would reduce construction and operational emissions, but not below applicable emissions thresholds. Impacts would be significant and unavoidable.</p>	<p>There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan. However, the Plan would not obstruct the implementation of the air quality plan.</p>	<p>There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan, even though the Plan would not obstruct the implementation of the air quality plan. Therefore, impacts remain significant and unavoidable.</p>
<p>Impact AQ-2: Individual development projects facilitated by the Plan would generate construction and operational emissions. Such emissions may result in adverse impacts to local air quality. Implementation of Plan policies and compliance with existing regulations would reduce emissions, but not below applicable levels of significance. Impacts would be significant and unavoidable.</p>	<p>MM-AQ-Architectural Coating The City shall require that the following measures be implemented for all projects where unmitigated ROG impacts exceed regulatory thresholds. Implementation of these measures shall ensure that ROG emissions are reduced to below 137 lbs/day during construction activities.</p> <ul style="list-style-type: none"> ▪ Project contractors shall use architectural coating materials that are zero-emission or has a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the City shall perform periodic site inspections during construction to verify compliance; and/or, ▪ All architectural coating phases shall be extended such that ROG emissions are reduced to below 137 lbs/day. <p>MM-AQ-2 Operational Emissions Reductions The City shall require that some or all of the following measures be implemented for individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. Applicable measures shall be incorporated such that emissions are fully</p>	<p>With incorporation of Mitigation Measure AQ-1, emissions from construction activities could be reduced to less than significant levels for the sample multi-family and industrial projects implemented under the Plan. As part of Mitigation Measure AQ-1, individual project architectural coating phases were extended as follows: Multi-family Residential from 35 days to 88 days; and industrial from 20 to 30 days. Adherence to applicable Plan policies, AVAQMD rules, and Mitigation Measure AQ-1 would reduce potential construction-related impacts to the greatest extent possible. However, given the unknown specifics of each individual project, there is the potential that even with these measures, construction impacts would remain significant. Therefore, impacts would be significant and unavoidable.</p>

Impact	Mitigation Measure	Significance After Mitigation
	<p>reduced to below regulatory thresholds or the greatest extent feasible. The reduction measures include, but are not limited to, the following:</p> <ul style="list-style-type: none"> ▪ Architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, the coating with the lowest ROG rating available shall be used ▪ Require new development to exceed the applicable Title 24 energy-efficiency requirements ▪ Projects shall incorporate outdoor electrical outlets such that 10 percent of outdoor landscaping equipment can be electrically powered ▪ All dock doors shall be equipped with electric plugs for electric TRUs ▪ Installation of electric vehicle charging stations at three percent beyond those required by State and local codes ▪ Provide infrastructure to allow for future electric vehicle charging stations for a minimum of 10 percent of the parking spaces beyond those already required to accommodate electric vehicle charging stations ▪ Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment ▪ Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet ▪ Provision of dedicated parking for carpools, vanpool, and clean air vehicles ▪ Provision of vanpool and/or shuttle service for employees 	

Impact	Mitigation Measure	Significance After Mitigation
	<ul style="list-style-type: none"> ▪ Implementation of reduced parking minimum requirements ▪ Implementation of maximum parking limits ▪ Provision of bicycle parking facilities beyond those required by State and local codes ▪ Provision of a bicycle-share program ▪ Expansion of bicycle routes/lanes along the project site frontage ▪ Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if the project site is located along an existing transit route ▪ Expansion of sidewalk infrastructure along the project site frontage ▪ Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes ▪ Provision of employee lockers and showers ▪ Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services) ▪ Provision of alternative work schedule options, such as telework or reduced working days per week (e.g., 9/80 or 10/40 schedules), for employees ▪ Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options ▪ As applicable all industrial uses shall be required to enroll in U.S. EPA’s SmartWay program and shall use carriers that are SmartWay carriers 	

Impact	Mitigation Measure	Significance After Mitigation
<p>Impact AQ-3: Individual development projects carried out under the Plan would generate construction- and operational-related emissions. Such emissions may result in adverse impacts to local air quality. However, implementation of Plan policies and compliance with existing regulations would reduce construction and operational emissions such that it would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant.</p>	<p>None required beyond compliance with applicable regulations.</p>	<p>Less than significant without mitigation.</p>
<p>Impact AQ-4: Individual development projects carried out under the Plan would generate construction- and operation-related odors. Such emissions may result in temporary impacts to local air quality. Implementation of Plan policies and compliance with existing regulations would reduce odor emissions to a less than significant level.</p>	<p>None required beyond compliance with applicable regulations.</p>	<p>Less than significant without mitigation.</p>
<p>Biological Resources</p>		
<p>Impact BIO-1: Development carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat. Impacts would be less than significant with mitigation.</p>	<p>MM-BIO-1 Pre-Construction Nesting Bird Surveys</p> <p>To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, <u>February 15 through September 15 (as early as January 1 for some raptors) (February 1 through August 31)</u>. If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species</p>	<p>Implementation of Mitigation Measure BIO-1 would reduce potential impacts to nesting birds and associated habitat to a less than significant level by requiring pre-construction surveys and avoidance measures.</p>

Impact	Mitigation Measure	Significance After Mitigation
	<p>known to occur in southern California desert communities.</p> <p>If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.</p>	
<p>Impact BIO-2: Projects carried out under the Plan may adversely affect riparian habitat or other sensitive natural communities during project construction. Implementation of federal, State, and or local policies (including Plan policies) would ensure that riparian habitat and wetlands are not significantly impacted. Impacts would be less than significant.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Impact BIO-3: Development carried out under the Plan would avoid impacts to wildlife movement corridors by conserving natural areas in the Planning Area, as directed by policies in the Plan. Impacts would be less than significant.</p>	<p>See Mitigation Measure BIO-1.</p>	<p>With implementation of Mitigation Measure BIO-1, impacts to wildlife corridors and species would be less than significant.</p>
<p>Impact BIO-4: With implementation of Plan goals and policies and regulations contained in the Palmdale Municipal Code, The Plan would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be no impact.</p>	<p>None required.</p>	<p>No impact.</p>
<p>Impact BIO-5: The Planning Area is in the West Mojave Coordinated Management Plan planning area. Impacts to areas identified in the West Mojave Coordinated Management Plan Strategy would be reduced through compliance with conservation strategies contained in goals and policies of the proposed Plan. Impacts would be less than significant.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>

Impact	Mitigation Measure	Significance After Mitigation
Cultural Resources		
<p>Impact CUL-1: The Plan may cause a significant impact to historical resources because site preparation, demolition, and construction associated with development carried out under the plan may cause substantial adverse changes in the significance of a historical resource. However, implementation of Plan policies and implementation actions included in the Conservation Element and further mitigation would reduce this impact to significant but mitigable.</p>	<p>MM-CUL-1 Historical Resources A historical resources evaluation shall be prepared for all discretionary projects carried out under the Plan involving a property which includes buildings, structures, objects, sites, landscape/site plans, or other features that are 45 years of age or older. The evaluation shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior’s Professional Qualifications Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed development site. All structures 45 years of age or older shall be evaluated within their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the City for review and concurrence. If the property is already listed in the NRHP, CRHR, or as a Landmark in Palmdale, the historical resources evaluation described above shall not be required. If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application</p>	<p>Implementation of Mitigation Measure CUL-1 would reduce impacts to historical resources by identifying and evaluating significant historical resources and managing relocation, rehabilitation, or alteration in compliance with the Standards as applicable HABS documentation would also reduce these impacts to the greatest extent feasible in cases where compliance with the Standards or avoidance is not possible. Therefore, impacts would be less than significant with implementation of Plan policies and Mitigation Measure CUL-1.</p>

Impact	Mitigation Measure	Significance After Mitigation
	<p>that may affect the historical resource, the historical resources evaluation report shall also identify and specify the treatment of character-defining features and construction activities.</p> <p>Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior’s Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of any permits.</p> <p>If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The report shall comply with the Secretary of the Interior’s Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including</p>	

Impact	Mitigation Measure	Significance After Mitigation
<p>Impact CUL-2: The Plan may cause a significant impact if ground disturbance associated with development carried out under the Plan would cause a substantial adverse change in the significance of an archaeological resource, including those that qualify as historical resources. This impact would be significant but mitigable.</p>	<p>digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and be submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.</p> <p>MM-CUL-2 Phase I Archaeological Resources Study</p> <p>For any project carried out under the General Plan Update, the City and/or project applicant shall investigate the potential to disturb archaeological resources. If the project will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial fill) a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior’s (SOI’s) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983). If a project would solely involve the refurbishment of an existing building and no ground disturbance would occur, this measure would not be required. The Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether archaeological resources may be present. Archival research shall include a records search of the South Central Coastal Information Center no more than two years old and a Sacred Lands File search with the NAHC. The Phase I technical report documenting the study shall include recommendations that must be implemented prior to and/or during construction to avoid or reduce impacts on archaeological resources. The report shall be</p>	<p>Implementation of mitigation measures CUL-2 through CUL-8 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery of archaeological resources that may be impacted by future projects in a timely manner.</p>

Impact	Mitigation Measure	Significance After Mitigation
	<p>submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase I technical report shall be made Conditions of Approval and shall be implemented throughout all ground disturbance activities.</p> <p>MM-CUL-3 Extended Phase 1 Testing</p> <p>For any projects proposed within 100 feet of a known archaeological site and/or in areas identified as sensitive by a Phase I study [Mitigation Measure CUL-2], the project applicant shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. XPI testing should comprise a series of shovel test pits and/or hand augured units and/or mechanical trenching to establish the boundaries of archaeological site(s) on the project site. If the boundaries of the archaeological site are already well understood from previous archaeological work, an XPI will not be required. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).</p> <p>All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations contained therein shall be implemented for all ground disturbance activities.</p>	

Impact	Mitigation Measure	Significance After Mitigation
	<p>MM-CUL-4 Archaeological Site Avoidance Any identified archaeological sites (determined after implementing mitigation measures CUL-2 and/or CUL-3) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging shall be placed between the work location and any resources within 60 feet of a work location to minimize the potential for inadvertent impacts.</p> <p>MM-CUL-5 Phase II Site Evaluation If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, the qualified archaeologist shall conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for the CRHR or qualify as unique archaeological resources. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). A Phase II evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation will characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains.</p>	

Impact	Mitigation Measure	Significance After Mitigation
	<p>If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-2) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase II report shall be implemented for all ground disturbance activities.</p> <p>MM-CUL-6 Phase III Data Recovery</p> <p>Should the results of the Phase II site evaluation (Mitigation Measure CUL-5) yield resources that meet CRHR significance standards and if the resource cannot be avoided by project construction in accordance with CUL-4, the project applicant shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and approved by the City of Palmdale prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust</p>	

Impact	Mitigation Measure	Significance After Mitigation
	<p>the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI PQS for archaeology according to a research design reviewed and approved by the City of Palmdale prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). If applicable, a Native American monitor shall be present.</p> <p>As applicable, the final Phase III Data Recovery reports shall be submitted to the City of Palmdale prior to issuance of any grading or construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities.</p> <p>MM-CUL-7 Cultural Resources Monitoring If recommended by Phase I, XPI, Phase II, or Phase III studies [mitigation measures CUL-2, CUL-3, CUL-5, and/or CUL-6], the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, mitigation measures CUL-4 through CUL-6 shall be implemented, as appropriate.</p> <p>MM-CUL-8 Unanticipated Discovery of Archaeological Resources If archaeological resources are encountered during ground-disturbing activities, work within</p>	

Impact	Mitigation Measure	Significance After Mitigation
	<p>60 feet shall be halted and the project archaeologist meeting the SOI's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.</p>	
<p>Impact CUL-3 The discovery of human remains is always a possibility during ground-disturbing activities. Ground disturbance associated with development carried out under the Plan may disturb or damage known or unknown human remains. This impact would be less than significant with adherence to existing regulations.</p>	<p>Because this impact would be less than significant due to required regulations, mitigation measures are not required.</p>	<p>Compliance with existing regulations would reduce Plan impacts to human remains to less than significant levels by ensuring proper identification and treatment of any human remains that may be present.</p>
Energy		
<p>Impact E-1: With compliance with applicable regulations and Plan policies, the Plan would not result in significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation of projects carried out under the Plan. Therefore, impacts would be less than significant.</p>	<p>None required beyond compliance with applicable Plan policies and regulations.</p>	<p>Less than significant without mitigation.</p>
<p>Impact E-2: The Plan would be consistent with energy efficiency goals contained in the Palmdale Energy Action Plan. Construction and operation of projects carried out under the Plan would comply with relevant provisions of the State's CALGreen and Title 24 of the California Energy Code. Impacts would be less than significant.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>

Impact	Mitigation Measure	Significance After Mitigation
Geology and Soils		
Impact GEO-1: Future seismic events could produce ground shaking in the Planning Area that could damage structures and/or result in adverse health and safety effects. However, with implementation of Plan policies and required compliance with building codes, impacts would be less than significant.	None required.	Less than significant without mitigation.
Impact GEO-2: The plan would not result in substantial soil erosion or loss of topsoil. Impacts would be less than significant.	None required.	Less than significant without mitigation.
Impact GEO-3: Future seismic events are unlikely to result in liquefaction and lateral spreading of soils in the Planning Area. Additionally, development in the Planning Area would be subject to compliance with applicable building codes. Impacts would be less than significant.	None required.	Less than significant after mitigation.
Impact GEO-4: Development carried out under the Plan may result in the construction of structures on expansive soils that could create a substantial risk to life or property. However, all new development would be required to comply with the standards of the CBC, which would ensure that expansive soils are remediated or that foundations and structures are engineered to withstand the forces of expansive soil. Compliance with the requirements of the CBC would reduce this impact to a less than significant level.	None required.	Less than significant without mitigation.
Impact GEO-5: Projects carried out under the Plan would not include the use of septic tanks or alternative wastewater systems; therefore, there would be no impact related to soil stability for wastewater systems.	None required.	No Impact.
Impact GEO-6: Impacts to unique paleontological resources or unique geological features would be less than significant with mitigation.	<p>MM-GEO-1 Unanticipated Discovery of Paleontological Resources</p> <p>If paleontological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project paleontologist shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and paleontological testing. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall</p>	Implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to less than significant levels by ensuring the avoidance of paleontological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery paleontological resources that may be impacted by future projects in a timely manner.

Impact	Mitigation Measure	Significance After Mitigation
	<p>be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.</p>	
<p>Greenhouse Gas Emissions</p>		
<p>Impact GHG-1: Implementation of projects carried out under the Plan would not increase per service population GHG Emissions. The CAP is part of the Plan and shows per service Population emissions reductions over time. All future projects would be required to comply with the CAP. The Plan would therefore have a less than significant impact on GHG emissions.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Impact GHG-2: The Plan would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The Plan would therefore have a less than significant impact on GHG emissions.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Hazards and Hazardous Materials</p>		
<p>Impact HAZ-1: Implementation of the Plan could result in an incremental increase of the overall routine transport, use, storage, and disposal of hazardous materials. Compliance with applicable regulations related to the handling, transport, disposal, and storage of hazardous materials and adherence to Plan policies would minimize the risk of spills and the public’s potential exposure to these substances and reduce the risk of adverse impacts of hazardous materials. This impact would be less than significant.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Impact HAZ-2: New development of land uses facilitated by the Plan could result in accidental release of hazardous materials within one quarter mile of existing schools. compliance with regulatory requirements of the City’s Fire Code, Plan policies, and existing applicable state and federal regulations would ensure that risks from hazardous emissions or handling of hazardous materials, substances, or waste near existing or proposed schools would remain less than significant.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Impact HAZ-3: Implementation of the Plan could result in development of sites contaminated with hazardous materials. However, compliance with applicable regulations relating to site cleanup and adherence to Plan policies would minimize the impacts related to development on a listed contaminated site. This impact would be less than significant.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>

Impact	Mitigation Measure	Significance After Mitigation
<p>Impact HAZ-4: Development under the Plan may result in construction in proximity to the Palmdale Regional Airport and United States Air Force Plan 42. Compliance with existing regulations, including the Federal Code of Regulations and ALCUP policies, would reduce impacts to a less than significant level.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Impact HAZ-5: Population growth and increased development as a result of the Plan could impact evacuation routes in the event of an emergency in the Planning Area. Proposed goals in the Plan would ensure effective emergency response following a natural or human caused disaster. Therefore, the Plan would not result in interference with an adopted emergency response plan or emergency evacuation plan. This impact would be less than significant.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Impact HAZ-6: The Planning Area includes a designated very high fire hazard area. Goals included in the Plan would minimize exposure of people or structures to risk of loss, injury, or death involving wildfire and wildland fires. This impact would be less than significant.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Hydrology and Water Quality</p>		
<p>Impact HWQ-1: Compliance with applicable laws and regulations and implementation of the goals and policies in the Plan would minimize the potential for water quality degradation, ensure compliance with waste discharge requirements, and reduce impacts to a less than significant level.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Impact HWQ-2: Impacts to groundwater supplies would be reduced to a less than significant level with compliance to the Palmdale Municipal Code, the MS4 permit, LID goals, and Plan Policies.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Impact HWQ-3: Impacts related to erosion, flooding, and stormwater drainage system capacity from substantial alteration of drainage patterns would be reduced to a less than significant level through compliance with LIDs, the NPDES, the Palmdale Municipal Code, and proposed Plan goals and policies.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Impact HWQ-4: Risks related to the release of pollutants due to project inundation would be less than significant through compliance with applicable Plan policies.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>
<p>Impact HWQ-5: The Plan would be consistent with the LRWQCB Basin Plan and projects carried out under the Plan would be subject to Plan policies that would help to protect local groundwater resources. Impacts would be less than significant.</p>	<p>None required.</p>	<p>Less than significant without mitigation.</p>

Impact	Mitigation Measure	Significance After Mitigation
Land Use and Planning		
Impact LU-1: The Plan retains and continues the Planning Area’s existing street system and protects its established communities. It would therefore not divide an established community and there would be no impact.	None required.	No impact.
Impact LU-2: Because the Plan and its policies are consistent with SCAG’S RCP and RTP/SCS and other applicable plans, the Plan would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Impacts would be less than significant.	None required.	Less than significant without mitigation.
Mineral Resources		
Impact MIN-1: Because the Plan would not redesignate any areas currently designated as mineral resource zones, and projects carried out under the Plan would be required to adhere to applicable regulations and Plan policies related to mineral resources, impacts related to the loss of availability of a known mineral or a locally imported mineral resource recovery site delineation would be less than significant.	None required.	Less than significant without mitigation.
Noise		
Impact N-1: Construction of individual projects carried out under the Plan would temporarily produce high noise levels, potentially affecting adjacent noise-sensitive land uses. Operation of individual projects carried out under the Plan would create more permanently increased noise levels, also potentially affecting adjacent noise-sensitive land uses. compliance with requirements of the Palmdale Municipal Code and implementation of Plan policies would, however, reduce these impacts to a less than significant level.	None required beyond compliance with applicable policies and regulations.	Less than significant without mitigation.
Impact N-2: Construction of individual projects carried out under the Plan could temporarily generate groundborne vibration, potentially affecting adjacent sensitive land uses. This impact would be less than significant with mitigation.	<p>MM-NOI-1 Construction Vibration Control Measures</p> <p>The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval, as applicable, for construction projects carried out under the Plan within 50 feet of fragile buildings as defined in this mitigation measure:</p> <ol style="list-style-type: none"> 1. Avoid the use of vibratory rollers within 50 feet of fragile buildings, which are buildings that are susceptible to damage from vibration 	Avoiding the use of vibratory rollers within 50 feet of fragile buildings would prevent potential structural damage from vibration. In addition, appropriate scheduling of construction activities and notification of neighbors would minimize disturbance of people from use of vibration-generating equipment. Compliance with the vibration control and notification measures in Mitigation Measure N-2

Impact	Mitigation Measure	Significance After Mitigation
	as determined by the Palmdale Planning Department. 2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration (FTA 2006). 3. Notify neighbors of scheduled construction activities that would generate vibration.	would reduce impacts to a less than significant level.
Impact N-3: Compliance with Plan polices would reduce impacts related to airport Noise levels to less than significant.	None required.	Less than significant without mitigation.
Population and Housing		
Impact PH-1: Implementation of the Plan would accommodate more growth than envisioned in SCAG’s latest Regional Transportation Plan/Sustainable Communities Strategy. However, policies and actions included in the Plan would adequately address the projected population growth. Thus the Plan is designed for planned and orderly growth which improves the balance of jobs and housing. this impact would be less than significant.	None required.	Less than significant without mitigation.
Impact PH-2: Development carried out under the Plan would add up to 22,000 new housing units to the City’s housing stock and 75,756 new residents by 2045. The Plan would increase the number of housing units, including multifamily housing units, and would not directly replace any existing housing. Therefore, the Plan would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere, and this impact would be less than significant.	None required.	Less than significant without mitigation.
Public Services		
Impact PS-1: Development carried out under the proposed plan would increase the City’s population. This would increase the demand for fire and emergency medical services and potentially create the need for new fire service facilities. However, compliance with policies in the plan and the Palmdale municipal code as well as other city programs, would reduce impacts related to fire protection facilities to less than a significant level.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure	Significance After Mitigation
<p>Impact PS-2: Development carried out under the proposed Plan would increase the City's population. This would increase demand for police services and potentially create the need for new police service facilities. However, compliance with policies in the Plan would reduce impacts related to police protection services to a less than significant level.</p>	None required.	Less than significant without mitigation.
<p>Impact PS-3: The Plan would not result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, in order to maintain acceptable service ratios or other performance objectives. Therefore, impacts would be less than significant.</p>	None required.	Less than significant without mitigation.
Recreation		
<p>Impact REC-1: Development facilitated by the Plan may increase the use of existing parks and open space, but policies in the Plan for providing additional recreational facilities, as well as City park dedication fees and development impact fees, would help offset these impacts, and substantial physical deterioration of recreational facilities would not occur. This impact would be less than significant.</p>	None required.	Less than significant without mitigation.
Transportation		
<p>Impact T-1: The Plan would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Impacts would be less than significant.</p>	None required.	Less than significant without mitigation.
<p>Impact T-2: The Plan would be consistent with CEQA Guidelines Section 15064.3(b). The Plan has the least significant VMT impact of all the scenarios, where socio-economic data were evaluated and placed in the optimum locations for smart growth consideration. No significant impacts would occur.</p>	None required.	No impact.
<p>Impact T-3: Through implementation of Plan policies and actions, the Plan would help ensure safe and efficient movement for all modes of travel and would therefore not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment). this would be a less than significant impact.</p>	None required.	Less than significant without mitigation.
<p>Impact T-4: The Plan would not result in inadequate emergency access because Plan goals and policies would encourage ease of connectivity and ease of mobility throughout the Planning Area and emergency access would be improved. there would be no impact.</p>	None required.	No impact.

Impact	Mitigation Measure	Significance After Mitigation
Tribal Cultural Resources		
<p>Impact TCR-1: Development carried out under the Plan may impact unidentified tribal cultural resources, but these impacts would be reduced to a less than significant level with incorporation of mitigation measures MM-TCR-1 and MM-TCR-2.</p>	<p>MM-TCR-1: Native American Monitoring</p> <p>Prior to the issuance of a grading permit for a project under the Plan, the City of Palmdale (City) shall ensure that the project applicant seeks the services of a tribal monitor(s) approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities. This provision shall be included on the proposed project contractor’s plans and specifications. Ground-disturbing activities are defined by the relevant tribes as activities that may include but are not limited to pavement removal, pot-holing or using an auger, grubbing, tree removals, borings, grading, excavation, drilling, and/or trenching within the project area. The project site shall be made accessible to the monitor(s), provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance.</p> <p>If evidence of tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource in consultation with a qualified archaeologist. The recovery process shall not unreasonably delay the construction process and must be carried out consistent with CEQA and local regulations. Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether</p>	<p>Implementation of mitigation measures CUL-2 through CUL-8 in Section 4.5 <i>Cultural Resources</i>, and TCR-1 and TCR-2 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery archaeological resources that may be impacted by future projects in a timely manner.</p>

Impact	Mitigation Measure	Significance After Mitigation
	<p>or not a monitor is present on site. The monitor shall complete daily monitoring logs that will provide descriptions of the day’s activities and general observations and whether the Native American monitor believes they observed a TCR and what action they took. The on-site monitoring shall end when the project site grading and excavation activities are completed or prior to the completion if the monitor has indicated that the site has a low potential for tribal cultural resources.</p> <p>MM-TCR-2 Unanticipated Discovery of Tribal Cultural Resources</p> <p>Upon discovery of any tribal cultural resources, the Native American monitor has the ability to halt construction activities in the immediate vicinity (within 50 feet) of the find until the find can be assessed. All tribal cultural resources unearthed during project construction activities shall be evaluated by the Native American monitor approved by the relevant tribes and a qualified archaeologist. Construction work shall be permitted to continue on other parts of the project site while evaluation and, if necessary, additional investigations and/or preservation measures take place (CEQA Guidelines Section 15064.5(f)). If the resources are Native American in origin, the relevant tribes shall coordinate with the landowner regarding treatment and curation of these resources. If a resource is determined by the qualified archaeologist to constitute a “historical resource” or “unique archaeological resource,” time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available through coordination between the relevant tribes and the project applicant. The treatment plan established for the resources</p>	

Impact	Mitigation Measure	Significance After Mitigation
	shall be in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5(f) for historical resources and Public Resources Code (PRC) Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.	
Utilities and Service Systems		
Impact U-1: Development facilitated by the Plan would create additional demand for water supply and wastewater facilities, which would require the construction or relocation of new or expanded water and wastewater facilities. Sufficient water supplied by PWD and LACWD 40 would not be available to serve the Plan and reasonably foreseeable future development. The Plan would also exceed capacity of local wastewater treatment facilities. Impacts would be significant and unavoidable.	At this time, it cannot be determined with certainty whether sufficient water supply sources may be available and sufficient to accommodate the demands of anticipated growth. There are no known mitigation measures that would reduce this impact to less than significant.	Impacts related to water supply and wastewater capacity would be significant and unavoidable.
Impact U-2: The Plan would not generate solid waste in excess of state or local standards or in excess of capacity of local infrastructure. Projects carried out under the Plan would comply with relevant waste reduction statutes and regulations. impacts would be less than significant.	None required.	Less than significant without mitigation.
Wildfire		
Impact WFR-1: A portion of the Planning Area is in a VHFHSZ. However, development carried out under the Plan would not substantially impair any adopted emergency response plans or emergency evacuation routes because it would be subject to adopted federal, State, and local development guidelines that govern wildfire, emergency services, and emergency access, and Plan policies address emergency planning and response. Therefore, this impact would be less than significant.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure	Significance After Mitigation
Impact WFR-2: The Plan would not exacerbate wildfire risk due to slope, prevailing winds, or any other factor. The Plan would not expose occupants of projects carried out under the Plan to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact WFR-3: The Plan would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Therefore, the impact would be less than significant.	None required.	Less than significant without mitigation.
Impact WFR-4: The Plan would not expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, and there would be no impact.	None required.	No Impact.

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1 Introduction

This Environmental Impact Report (EIR) examines the potential environmental effects of the proposed City of Palmdale (City) General Plan Update, entitled *Palmdale 2045– A Complete Community* (Palmdale 2045, or the Plan). The Plan, the California Environmental Quality Act (CEQA) environmental review process, and the legal basis for preparing an EIR are described below.

This section (1) provides an overview of the background behind the Plan; (2) describes the purpose of and legal authority of the document; (3) summarizes the scope and content of the EIR; (4) lists lead, responsible, and trustee agencies for the EIR; (5) describes the intended uses of the EIR; and (6) provides a synopsis of the environmental review process required under CEQA.

1.1 Environmental Impact Report Background

This document is an EIR that evaluates the potential environmental effects associated with implementation of the Plan, a document that establishes the community’s vision for future development of the Planning Area and provides comprehensive policies relating to land use and community design; housing; circulation and mobility; noise; conservation, natural, and cultural resources; air quality; parks, recreation and open space; equitable, resilient, and healthy community; military readiness; economic development; safety; public facilities, services, and infrastructure; and sustainability and climate vulnerability.

The contents of other EIR chapters are as follows:

- Chapter 2, *Project Description*, provides a detailed discussion of the Plan
- Chapter 3, *Environmental Setting*, describes the general environmental setting of the Planning Area
- Chapter 4, *Environmental Impact Analysis*, describes the potential environmental effects associated with implementation of the Plan
- Chapter 5, *Other CEQA Required Discussions*, discusses other issues required to be analyzed under CEQA such as growth inducement and significant irreversible environmental effects
- Chapter 6, *Alternatives*, discusses alternatives to the Plan, including the CEQA-required “no project” alternative
- Chapter 7, *References*, lists informational sources for the EIR and persons involved in the preparation of the document

1.2 Overview of General Plan Update

The last comprehensive update of the City’s General Plan was adopted by the City Council on January 25, 1993. The City is proposing a new, comprehensive update of the General Plan (Palmdale 2045, or the Plan) that will need to be reviewed and recommended for adoption by the City’s Planning Commission, followed by final approval and adoption by the City Council.

State law (Government Code Section 65300) requires that each city and county adopt a comprehensive, long-term general plan. This Plan fulfills that requirement by updating the City’s existing General Plan, last comprehensively updated in 1993. The Plan defines the framework by which the Planning Area’s physical and economic resources are to be managed and used in the

future; and clarifies and articulates the City's intentions for Palmdale's future, with respect for the rights and expectations of the community including residents, property owners, and businesses. Through the Plan, the City informs these groups of its goals, policies, and standards, which are designed to achieve the objectives of the City and the community. The Plan's planning horizon is the year 2045.

Since a general plan is a community's constitution for future development, any decision by a city affecting land use and development must be consistent with its adopted general plan. This includes any future development projects proposed in and approved by the city. An action, program, or project would be considered consistent with the general plan if, considering all of its aspects, it would further or not obstruct attainment of the objectives and policies outlined in the general plan.

Each chapter of the Plan includes a list of desired outcomes, indicators, targets for that issue area; and goals, and policies meant to achieve them. Goals are defined as specified ends that help achieve the desired outcomes, indicators, and targets. Policies are specific statements that guide decision-making. These goals and policies are statements adopted by the City Council that help implement the vision of Palmdale that the Plan seeks to achieve. The goals and policies also provide protection for the City's resources by establishing planning requirements, programs, standards, and criteria for project review. Goals and policies may refer to existing programs or call for establishment of new programs.

1.3 Purpose and Legal Authority

This EIR has been prepared in accordance with CEQA and the state CEQA Guidelines. In accordance with Section 15121(a) of the CEQA Guidelines (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3), the purpose of an EIR is to inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

This EIR fulfills the requirements for a program EIR. Although the legally required contents of a program EIR are the same as those of a project EIR, program EIRs are typically more conceptual and may contain a more general discussion of impacts, alternatives, and mitigation measures than a project EIR. As provided in Section 15168 of the CEQA Guidelines, a program EIR may be prepared on a series of actions that may be characterized as one large project. Use of a program EIR provides the City (as lead agency) with the opportunity to consider broad policy alternatives and program-wide mitigation measures, and provides the City with greater flexibility to address environmental issues and/or cumulative impacts on a comprehensive basis.

Agencies generally prepare program EIRs for programs or a series of related actions that are (1) linked geographically; (2) logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program; or (3) individual activities carried out under the same authority and having generally similar environmental effects that can be mitigated in similar ways. By its nature, a program EIR considers the "macro" effects associated with implementing a program (such as a general plan or specific plan) and does not, and is not intended to, examine the specific environmental effects associated with particular projects that may be implemented under general or specific plans.

Once a program EIR has been prepared, subsequent activities in the program must be examined in the light of that program EIR to determine what, if any, additional CEQA documentation needs to be prepared. If the program EIR addresses the program's effects as specifically and comprehensively as

possible, many subsequent activities could be found to be within the scope of the program EIR and additional environmental documents may not be required (CEQA Guidelines Section 15168[c]). When a lead agency relies on a program EIR for a subsequent activity, it must incorporate applicable mitigation measures and alternatives developed in the program EIR into the subsequent activities (CEQA Guidelines Section 15168[c][3]). If a subsequent activity would have effects not identified in the program EIR, the lead agency must prepare a new initial study leading to a Negative Declaration, Mitigated Negative Declaration, or a project-level EIR. In this case, the program EIR still serves a valuable purpose as the first-tier environmental analysis. In addition, Section 15168(b) of the CEQA Guidelines encourages the use of program EIRs, citing five advantages:

1. Provide for a more exhaustive consideration of impacts and alternatives than would be practical in an individual EIR
2. Focus on cumulative impacts that might be slighted in a case-by-case analysis
3. Avoidance of continual reconsideration of recurring policy issues
4. Consideration of broad policy alternatives and programmatic mitigation measures at an early stage when the agency has greater flexibility to deal with them
5. Reduction of paperwork by encouraging the reuse of data (through tiering)

As a “macro” level environmental document, the program EIR uses macro-level thresholds rather than the project-level thresholds that might be used for an EIR on a specific development project. It should not be assumed that impacts determined not to be significant at a macro level would not be significant at a project level. In other words, determination that implementation of the Plan as a “program” would not have a significant environmental effect does not necessarily mean that an individual project would not have significant effects based on project-level CEQA thresholds, even if the project is consistent with the General Plan.

This EIR has been prepared to analyze potentially significant environmental impacts associated with future development resulting from implementation of the Plan and addresses appropriate and feasible mitigation measures or project alternatives that would minimize or eliminate these impacts. Additionally, this EIR will provide the primary source of environmental information for the City, the lead agency, to use when considering implementation of all future projects.

This EIR is intended to provide decision-makers and the public with information that enables them to intelligently consider the environmental consequences of the Plan (considered to be the “proposed project” under CEQA). This EIR identifies significant or potentially significant environmental effects, as well as ways in which those impacts can be reduced to less than significant levels (if feasible), whether through the incorporation of mitigation measures or through the implementation of specific alternatives to the Plan. In a practical sense, this document functions as a tool for fact-finding, allowing concerned citizens, agencies, and City staff an opportunity to collectively review and evaluate baseline conditions and project impacts through a process of full disclosure.

1.4 Scope and Content

In accordance with the CEQA Guidelines, a Notice of Preparation (NOP) of a Draft EIR was circulated to potentially interested parties on June 23, 2021. The NOP, included in Appendix A, indicated that all issues on the City’s environmental checklist would be discussed in the EIR. These include the following:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology/Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Mandatory Findings of Significance

This EIR evaluates potential impacts in each of these areas. The focus of this EIR is to:

- Provide information about the Plan for consideration by City decision-makers in their selection of the Plan, an alternative to the Plan, or a combination of various elements from the Plan and its alternatives, for approval
- Review and evaluate the potentially significant environmental impacts that could occur as a result of the growth and development envisioned in the Plan
- Identify feasible mitigation measures that may be incorporated into the Plan in order to reduce or eliminate potentially significant effects
- Disclose any potential growth-inducing and/or cumulative impacts associated with the Plan
- Examine a reasonable range of alternative growth scenarios (such as “no growth”/growth according to the existing Plan, reduced growth, or growth in alternative locations) that could feasibly attain the basic objectives of the Plan, while eliminating and/or reducing some or all of its potentially significant adverse environmental effects

The City received six written comment letters on the NOP. The comment letters are included in Appendix A and are addressed, as appropriate, in the analysis contained in the various subsections of Section 4, *Environmental Impact Analysis*. The City also held an EIR scoping meeting on June 30, 2021. The scoping meeting was conducted remotely due to COVID-19 restrictions and safety concerns. Table 1-1 summarizes all comments received, by topic, in the comment letters and at the scoping meeting, and where the topic of each comment letter is addressed in this EIR.

Table 1-1 NOP Comments and EIR Response

Topic	Where Topic is Addressed in EIR
General Plan Scope and Description <ul style="list-style-type: none"> ▪ Disclosure of possible impacts and feasible mitigation measures 	Section 2.3.1, <i>Objectives of the General Plan Update</i>
Biological Resources <ul style="list-style-type: none"> ▪ Permit required for impacts to or removal or relocation of Oak trees, pursuant to Los Angeles County Oak tree Ordinance ▪ Protection and possible take of Western Joshua tree ▪ Appropriate authorization for any take of Endangered Species Act (ESA) or California Endangered Species Act (CESA) listed or eligible species ▪ Discussion of potential impact on other special status species 	Section 4.4, <i>Biological Resources</i>

Topic	Where Topic is Addressed in EIR
<ul style="list-style-type: none"> ▪ Biologically significant sites inventory ▪ Notification to California Department of Fish and Wildlife (CDFW) regarding changes and impacts to jurisdictional waters ▪ Delineation and setbacks for wetlands and other jurisdictional waters ▪ “No net loss” of wetlands; avoidance of development on wetlands and mitigation for development near wetlands ▪ Avoid loss of and impacts to nesting birds and nesting bird habitat ▪ Completion of a biological baseline assessment ▪ Reporting of any detected special status species and natural communities ▪ Discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources ▪ Translocation and salvage of plants and animal species ▪ Restoration and compensatory mitigation ▪ Long-term management of mitigation lands 	
<p>Population and Housing</p> <ul style="list-style-type: none"> ▪ Recommendation for infill development ▪ Use of accurate growth forecasts ▪ Use of 6th Cycle Regional Housing Needs Allocation (RHNA) plan 	<p>Section 4.14, <i>Population and Housing</i> Section 2.3.5, <i>Residential and Employment Growth</i></p>
<p>Public Services</p> <ul style="list-style-type: none"> ▪ Compliance with all applicable codes and ordinances for fire access and protection ▪ Emergency vehicle accessibility and water supply requirements ▪ Fuel modification plans ▪ Fire and safety requirements during construction 	<p>Section 4.9, <i>Hazards and Hazardous Materials</i> Section 4.15, <i>Public Services</i></p>
<p>Transportation</p> <ul style="list-style-type: none"> ▪ Vehicle miles traveled (VMT) as primary metric in transportation analysis ▪ Complete traffic safety analysis ▪ Promotion of alternative transportation ▪ Plan consistency with Southern California Association of Governments (SCAG) Connect SoCal goals 	<p>Section 4.17, <i>Transportation</i></p>
<p>Tribal Cultural Resources</p> <ul style="list-style-type: none"> ▪ Consultation with tribes traditionally and culturally affiliated with Plan area pursuant to AB 52 ▪ Consultation with tribes prior to adoption of a General Plan, pursuant to SB 18 ▪ Completion of historical and archaeological records search ▪ Sacred Lands File search through the NAHC ▪ Mitigation for inadvertently discovered archaeological resources 	<p>Section 4.18, <i>Tribal Cultural Resources</i></p>
<p>Utilities and Service Systems</p> <ul style="list-style-type: none"> ▪ No current sewer deficiencies in Los Angeles County Sanitation District (LACSD) services ▪ Impact to LACSD sewer facilities ▪ Location of wastewater treatment facilities ▪ Possible sewerage system connection fees ▪ Projected population’s impact on sewerage facilities 	<p>Section 4.19, <i>Utilities and Service Systems</i></p>

Topic	Where Topic is Addressed in EIR
Topics not Required to be Covered in the EIR under CEQA <ul style="list-style-type: none"> ▪ Request for provision of environmental documentation during public comment period ▪ Development of an Environmental Justice Element 	Not applicable
Alternatives <ul style="list-style-type: none"> ▪ Discussion of need for project and potentially feasible alternatives 	Chapter 6, <i>Alternatives</i>

1.5 Lead, Responsible, and Trustee Agencies

The City is the lead agency under CEQA for this EIR because it has primary discretionary authority to determine whether or how to approve the Plan.

“Responsible agencies” are other agencies responsible for carrying out/implementing a specific component of a proposed project or for approving a project (such as an annexation) that implements the goals and policies of a general plan. Section 15381 of the CEQA Guidelines defines a responsible agency as:

A public agency which proposes to carry out or approve a project, for which a lead agency is preparing or has prepared an EIR or Negative Declaration. For purposes of CEQA, responsible agencies include all public agencies other than the lead agency that have discretionary approval authority over the project.

There are no responsible agencies for the General Plan Update. Although no responsible agencies occur under CEQA, several other agencies have review authority over aspects of the Plan or approval authority over projects that could potentially be implemented in accordance with various objectives and policies included in the Plan. These agencies and their roles are listed below.

- The state geologist is responsible for the review of the City’s program for minimizing exposure to geologic hazards and for regulating surface mining activities.
- The California Department of Transportation (Caltrans) has responsibility for approving future improvements to the state highway system, including State Route 14 (SR 14) and State Route 138 (SR 138).
- The CDFW has responsibility for issuing take permits and streambed alteration agreements for any projects with the potential to affect plant or animal species listed by the State of California as rare, threatened, or endangered, or that would disturb waters of the state.
- The Antelope Valley Transit Authority (AVTA) is responsible for approving and implementing projects involving construction or remodeling of new or existing AVTA facilities, such as bus stops.
- The LACSD treats wastewater from the City’s system and would therefore be responsible for approving and implementing improvements to wastewater infrastructure should they be required as a result of the General Plan Update.
- The Board of Forestry and Fire Protection (Board), which is a government-appointed body within the California Department of Forestry and Fire Protection (CalFire), is responsible for reviewing the Safety Element under Government Code Section 65302.5. The Board reviews the Safety Element and responds to the City with its findings regarding the uses of land and policies in State Responsibility Areas (SRAs) or Very High Fire Hazard Severity Zones (VHFHSZs) that will protect life, property, and natural resources from unreasonable risks associated with wildfires,

and the methods and strategies for wildfire risk reduction and prevention within SRAs or VHFHSZs (Gov. Code, § 65302.5, subd. (b)(3); California Board of Forestry and Fire Protection, 2022).

“Trustee agencies” have jurisdiction over certain resources held in trust for the people of California, but do not have legal authority to approve or carry out the project. CEQA Guidelines Section 15386 designates four agencies as trustee agencies: the CDFW with regards to fish and wildlife, native plants designated as rare or endangered, game refuges, and ecological reserves; the State Lands Commission with regard to state-owned “sovereign” lands, such as the beds of navigable waters and state school lands; the California Department of Parks and Recreation with regard to units of the state park system; and the University of California with regard to sites within the Natural Land and Water Reserves System. The CDFW is the only trustee agency for the Plan EIR.

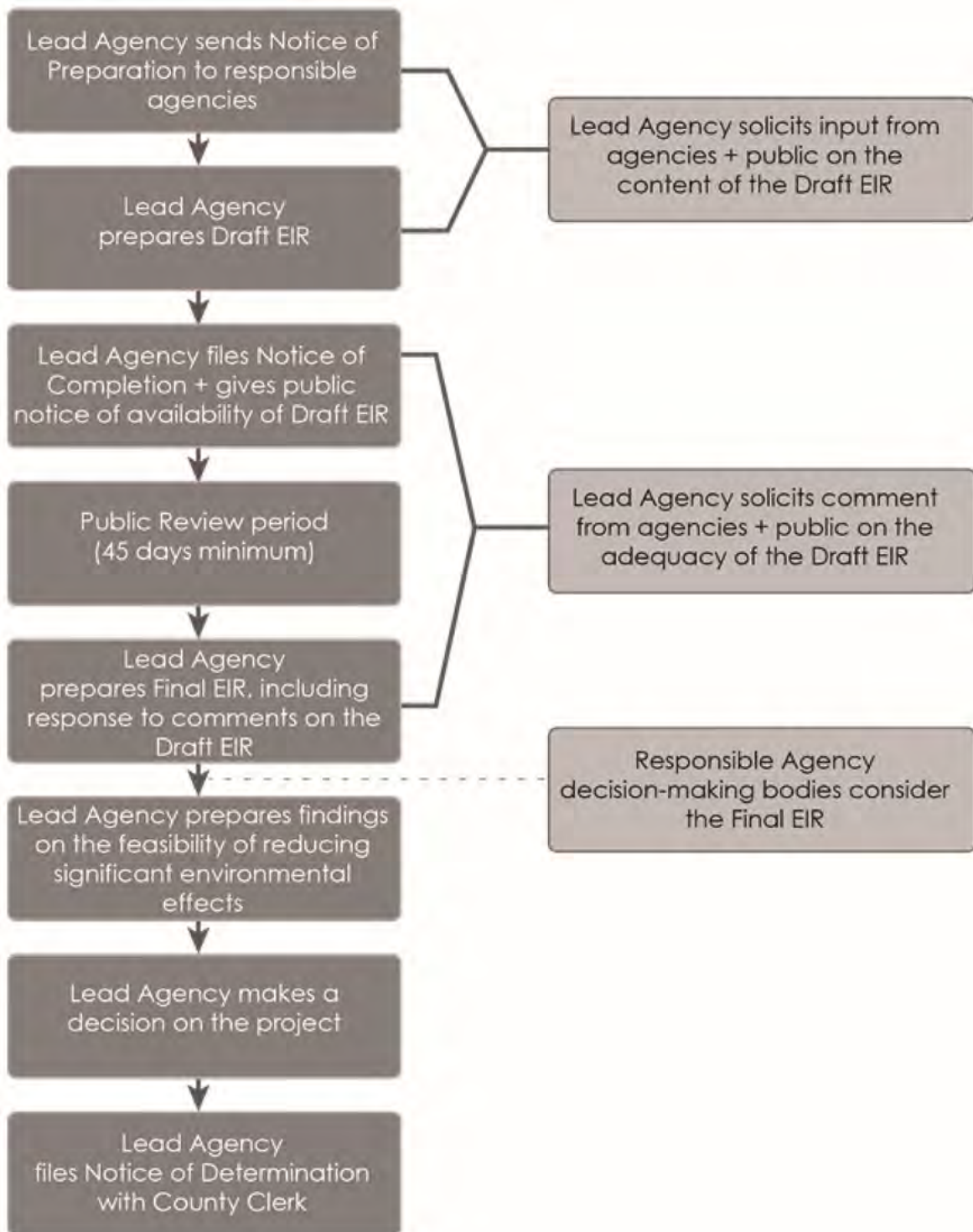
1.6 Environmental Review Process

The environmental impact review process required under CEQA is summarized below and illustrated in Figure 1-1. The steps appear in sequential order.

1. **Notice of Preparation (NOP).** After deciding that an EIR is required, the lead agency must file an NOP soliciting input on the EIR scope to responsible, trustee, and involved federal agencies; to the State Clearinghouse, if one or more state agencies is a responsible or trustee agency; and to parties previously requesting notice in writing (CEQA Guidelines Section 15082; Public Resources Code [PRC] Section 21092.2). The NOP must be posted in the County Clerk’s office for 30 days. For projects of statewide or regional significance, the lead agency must hold a scoping meeting during the 30-day NOP review period to solicit public input on the issues to be assessed in the EIR. For other projects, a scoping meeting is not required, but may be conducted by the lead agency.
2. **Draft EIR.** The Draft EIR must contain (1) table of contents or index; (2) summary; (3) project description; (4) environmental setting; (5) significant impacts (direct, indirect, cumulative, growth-inducing, and unavoidable impacts); (6) alternatives; (7) mitigation measures; and (8) irreversible changes.
3. **Public Notice and Review.** A lead agency must prepare a Public Notice of Availability of an EIR. The Notice must be placed in the County Clerk’s office for 30 days (PRC Section 21092) and sent to parties previously requesting notice. Additionally, public notice of Draft EIR availability must be given through at least one of the following procedures: (1) publication in a newspaper of general circulation; (2) posting on and off the project site; and (3) direct mailing to owners and occupants of contiguous properties. The lead agency must consult with and request comments on the Draft EIR from responsible and trustee agencies, and adjacent cities and counties. The minimum public review period for a Draft EIR is 30 days. When a Draft EIR is sent to the State Clearinghouse for review, the public review period must be 45 days, unless a shorter period is approved by the State Clearinghouse (PRC 21091). Distribution of the Draft EIR may be required through the State Clearinghouse.
4. **Notice of Completion.** A lead agency must file a Notice of Completion with the State Clearinghouse as soon a Draft EIR is completed.
5. **Final EIR.** A Final EIR must include (1) the Draft EIR; (2) copies of comments received during public review; (3) a list of persons and entities commenting; and (4) responses to comments.

6. **Final EIR Certification.** The lead agency shall certify that (1) the Final EIR has been completed in compliance with CEQA; (2) the Final EIR was presented to the decision-making body of the lead agency; and (3) the decision-making body reviewed and considered the information in the Final EIR prior to approving a project.
7. **Lead Agency Project Decision.** Once the lead agency certifies the Final EIR, it must then make a decision on the project analyzed in the EIR. If a project has significant environmental effects, the lead agency may (1) disapprove the project because of its significant environmental effects; (2) require changes to the project to reduce or avoid significant environmental effects; or (3) approve the project despite its significant environmental effects, if the proper findings and Statement of Overriding Considerations are adopted.
8. **Findings/Statement of Overriding Considerations.** For each significant impact of the project identified in the EIR, the lead or responsible agency must find, based on substantial evidence, that either (1) the project has been changed to avoid or substantially reduce the magnitude of the impact; (2) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or (3) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible. If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.
9. **Mitigation Monitoring and Reporting Program.** When an agency makes findings on significant effects identified in the EIR, it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
10. **Notice of Determination (NOD).** An agency must file an NOD after deciding to approve a project for which an EIR is prepared. A local agency must file the NOD with the County Clerk. The NOD must be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD starts a 30-day statute of limitations on CEQA challenges.

Figure 1-1 Environmental Review Process



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2 Project Description

The proposed project is an update of the City of Palmdale General Plan entitled *Palmdale 2045— A Complete Community* (Palmdale 2045, the Plan or proposed Plan). The actions that make up the proposed Plan are described below.

The proposed Plan is a comprehensive update of the City’s General Plan, the guiding document for the future of Palmdale over 23 years (2022-2045). The General Plan serves as the City’s primary guide for land use and development decisions and is a key tool for influencing and improving the quality of life for residents and businesses. As such, it serves as the “blueprint” for future development and conservation of the community. The Plan will help the City plan for important community issues such as new growth, housing and infrastructure needs, and environmental protection. It also sets the stage for future social, physical, and economic development of the City. It addresses issues that impact the entire community, such as how land is used, where buildings are constructed, and the location of infrastructure. The Planning Area for the proposed project includes the land within Palmdale’s City Limits, Sphere of Influence (SOI), and several unincorporated Los Angeles County ‘islands,’ as further described in Section 2.2, *Project Location*.

This section of the EIR describes the key characteristics of the proposed Plan, including the project proponent/lead agency, the geographic extent of the project objectives, required approvals, and the types and extent of development forecast for the Planning Area. This section also summarizes key aspects of the Plan that have the potential to result in physical environmental effects.

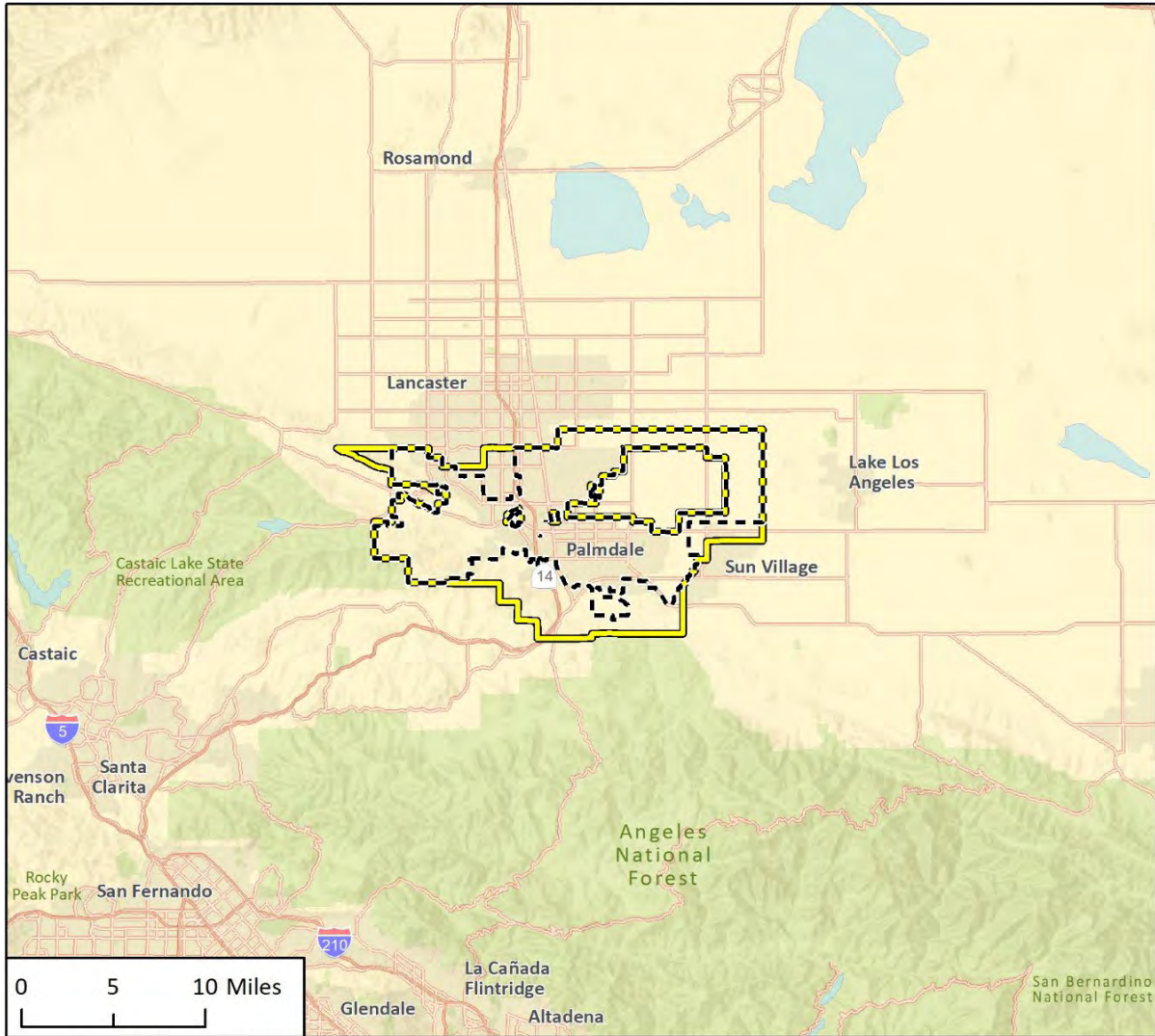
2.1 Project Proponent/Lead Agency

The City of Palmdale is both the project proponent and the lead agency for the proposed Plan.




2.2 Project Location

Palmdale is in the Antelope Valley, in the ‘high desert’ portion of Los Angeles County. The Antelope Valley is disconnected from the Southern California coastal and Central California valley regions by the Tehachapi Mountains to the northwest and by the San Gabriel Mountains to the south. The far western portions of the City and the Planning Area are in the foothills of the San Gabriel Mountains. Nearby communities include the city of Lancaster and the unincorporated community of Quartz Hill to the north; as well as other unincorporated communities such as Lake Los Angeles to the east, Sun Village, Littlerock, and Pearblossom to the southeast, Acton to the south, Agua Dulce to the southwest, and Leona Valley to the west. The Antelope Valley Freeway (SR-14) traverses the Planning Area from north to south, and SR-138 runs as Palmdale Boulevard in an east/west direction from its intersection with SR-14 to 47th Street East, then south along 47th Street east, then southeast along Fort Tejon Road and Pearblossom Highway to Littlerock. Figure 2-1 shows the regional location of the Planning Area and Figure 2-2 shows the local location. The Planning Area is 106,634 acres, or approximately 166 square miles.

Figure 2-1 Regional Location



Imagery provided by Esri and its licensors © 2021.

-  Sphere of Influence
-  City of Palmdale
-  Project Location

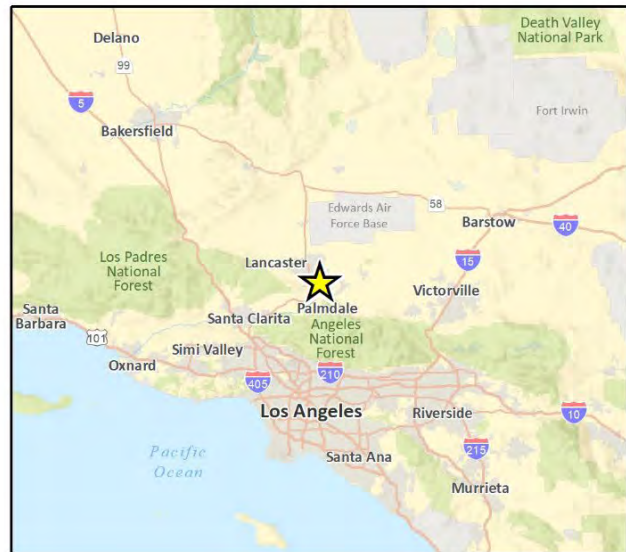


Fig. 1 Regional Location

Figure 2-2 Project Location

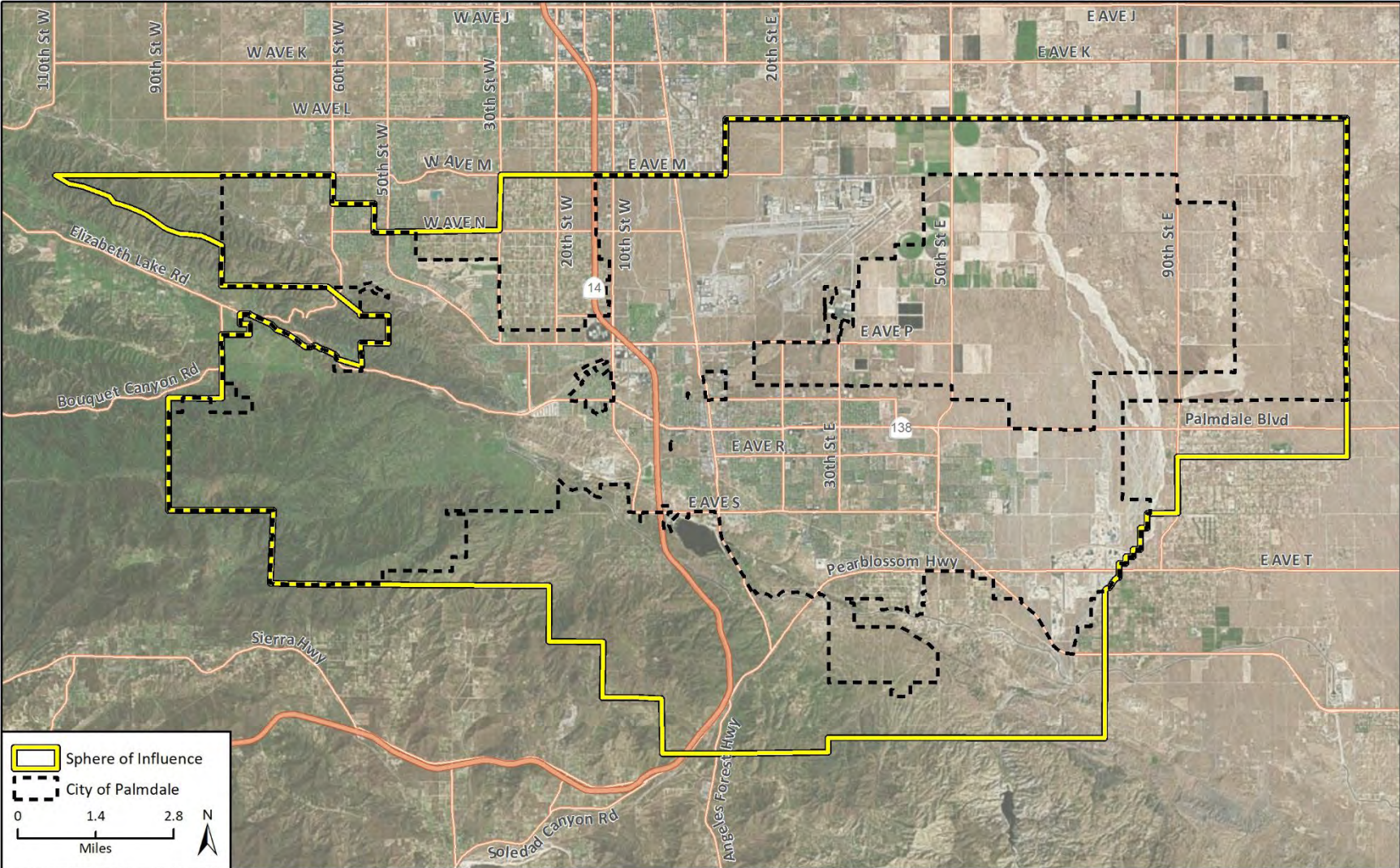


Fig 2-2 Project Location

2.3 Characteristics of the Proposed General Plan Update

2.3.1 Objectives of the General Plan Update

Palmdale 2045 is intended to function as a policy document to guide land use decisions in the City's Planning Area over 23 years (2022-2045). According to State law, General Plans are required to cover nine topics: land use, circulation, housing, conservation, open space, noise, air quality, safety, and environmental justice. Jurisdictions may address these topics across different chapters, or elements, of their general plan, and include any other topic that is relevant to planning its future. The updated City of Palmdale General Plan will include the State required topics plus economic development, urban design, infrastructure, military readiness, community facilities, sustainability and resilience, and climate change.

Palmdale 2045's vision for the city was developed with extensive community input and in recognition of the state's planning priorities. Palmdale 2045 focuses on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Palmdale 2045's vision for the future includes the following vision themes.

- **Unified and welcoming community.** The Palmdale community values opportunity, diversity, and unity, and seeks to promote Palmdale's positive reputation while boosting community beautification
- **Active and vibrant downtown.** Palmdale residents desire a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale
- **Diverse and high-quality job options.** Palmdale seeks to retain and expand its employment base through training for key industries, connecting residents to local jobs, and promoting telecommuting within the city
- **Diverse and resilient local economy.** Palmdale values its existing aerospace presence and aims to leverage and diversify new economic opportunities from expanded transportation connections
- **Safe, healthy place to live and work.** Palmdale residents want to address crime and safety, increase access to parks and open space, and support marginalized communities like foster youth and those experiencing homelessness
- **High quality medical and mental healthcare.** As a medical provider shortage area, Palmdale seeks to improve access to quality medical and mental healthcare services and facilities by attracting physicians, maintaining the Palmdale Regional Medical Center, and expanding services
- **Housing options for residents at different stages of life and ability.** The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the city that support residents of all abilities through different stages of life
- **High quality and accessible educational opportunities.** Citizens of Palmdale seek to promote and expand educational opportunities in the City including higher education, trade school, and formal and informal training programs

- **Beautiful natural setting.** The Palmdale community values its natural setting and seeks to improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky
- **Forefront of transportation innovations.** On the cusp of major regional transportation improvements, Palmdale seeks to leverage planned investments and improve local transit opportunities
- **General Plan implementation.** Residents of Palmdale value the long-term vision of the General Plan Update and desire regular review and update of the Plan including metrics for tracking implementation

Palmdale 2045 identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. These strategies will support existing and future employees, businesses, and residents by improving quality of life in Palmdale.

The following actions will also be taken by the City in connection with the General Plan Update and are also considered part of the proposed project to be analyzed in the forthcoming EIR:

- Adoption and implementation of the General Plan Update (Palmdale 2045 Plan)
- Adoption and implementation of the Climate Action Plan
- Adoption and implementation of the Comprehensive Zoning Ordinance Amendment
- A slight expansion of the boundary of the Palmdale Transit Area Specific Plan. Currently, many of the parcels along the external boundary of this Specific Plan area have split zoning because they are partly inside and partly outside the Specific Plan area. This proposed expansion would fully include these parcels within the Specific Plan area. Because the Specific Plan area is in the core of the city, this action would not affect the Planning Area of the proposed General Plan Update or require annexations.

Palmdale 2045 also includes an update of the City's Housing Element, in compliance with the requirements of State Housing Element law, which required the City to adopt an updated Housing Element by October 2021. A description of City actions taken to date in connection with the Housing Element Update is included in Section 2.3.2 of this EIR. While an Addendum was prepared for the Housing Element Update, the Housing Element Update is also analyzed in this EIR, as necessary, in the context of the overall Plan. The Housing Element Update will be readopted as part of the Plan after certification by the California Department of Housing and Community Development (HCD).

2.3.2 General Plan Organization

Palmdale 2045 is organized into chapters, including Introduction; Vision and Guiding Principles; and twelve topical chapters. The Introduction chapter provides context and background information on the City and the Plan itself, and the Vision and Guiding Principles chapter establishes the overall concepts for the future. The twelve topical element chapters encompass all the elements required by California General Plan law. The Housing Element update is provided under separate cover but is a part of the overall General Plan. Each topical chapter is summarized below:

- **Land Use and Community Design.** This chapter of the Plan provides a long-term vision, goals, and policies for Palmdale over the next 20 to 30 years. The overall focus is on how to accommodate change and growth in the City, while preserving and enhancing the features and attributes that make it such a desirable place to live. The future of Palmdale is dependent on the mix of residential, commercial, employment, and industrial uses which provide the foundation for a fiscally healthy community; as well as the design and quality of buildings, streets, and public spaces, which make Palmdale an attractive and highly livable place for its residents.
- **Circulation and Mobility.** This chapter of the Plan outlines goals and policies related to transportation and transit within Palmdale. This chapter provides policy direction for building and maintaining a transportation system that is safe, equitable, and accommodates future growth and planned land uses within the City.
- **Economic Development.** The purpose of the Economic Development chapter is to establish policies essential to the economic success of the City of Palmdale and its residents. This chapter provides policy direction and metrics to grow and diversify the City’s economy and promote fiscal sustainability by attracting new businesses and residents, retaining, and nurturing existing industries, and expanding workforce development opportunities. Topics addressed in this chapter include jobs and workforce development, housing and community amenities, transportation and infrastructure investment and fiscal health.
- **Military Compatibility.** The Military Compatibility chapter of the Plan outlines goals and policies related to land use and noise compatibility of current and increasing operations at Plant 42. This chapter also establishes goals and policies related to increased communication between the military, the City, and its residents, as well as coordination of future development and infrastructure improvements.
- **Equitable, Resilient, and Healthy Community.** The purpose of this chapter of the Plan is to establish policies that promote equitable access to economic opportunities, education, public facilities, and affordable housing to residents of Palmdale. This chapter also provides policy guidance related to air quality, health, and public safety in the City.
- **Parks, Recreation, Open Space.** The Parks, Recreation, and Open Space chapter of the Plan outlines goals and policies related to the provision of parks and recreation facilities in Palmdale. This chapter establishes targets for the location and accessibility of parks, active modes of transportation, and providing recreational opportunities for all city residents.
- **Conservation, Natural and Cultural Resources.** This chapter of the Plan outlines the goals and policies related to the conservation of natural and cultural resources in Palmdale. Topics addressed include Natural Resources, Land Resources, Cultural Resources, and Water Resources.
- **Public facilities, services, and infrastructure.** This section of the Palmdale General Plan outlines the goals and policies related to public facilities, services, and infrastructure in Palmdale. Topics discussed include Public Facilities, Emergency Services, Water Utilities and Infrastructure and Dry Utilities and Infrastructure.
- **Safety.** The Safety Element chapter of the Palmdale General Plan outlines the goals and policies related to hazards and safety in Palmdale. Topics addressed in this chapter include Geologic and Seismic Hazards, Flooding, Hazardous Materials and Climate Change.
- **Sustainability, Climate Action, and Resilience.** This chapter of the Plan provides policy guidance related to the provision and implementation of a climate action plan, making Palmdale a carbon neutral community by 2045, and decreasing emissions and environmental impacts related to energy, the built environment, transportation, waste, and water.

- **Air Quality.** The Air Quality Chapter of the Palmdale General Plan outlines goals and policies related to air quality within Palmdale. Topics addressed include Climate and Topography, Air Pollutants of Primary Concern, Existing Ambient Air Quality, Source Categories and Greenhouse Gas Emissions.
- **Noise.** The Noise Element outlines the goals and policies related to the noise environment in the Palmdale community. Topics discussed include Noise Generators and Sensitive Receptors.

Each chapter also discusses its overall purpose, or vision, as it relates to the Plan as a whole. The goals and policies in each chapter then outline how the City plans to achieve this vision. Finally, implementation actions designed to help achieve the goals and policies are contained at the end of each topical chapter.

The City and its consultant team is currently working on updating the City's Housing Element. This 6th Cycle Housing Element Update was analyzed in an Addendum to the EIR for the City's 5th Cycle Housing Element. The City submitted a draft Housing Element Update for HCD review on September 17, 2021. A meeting was held on November 10, 2021 between City staff, its consultant team and HCD in which HCD gave feedback to the City regarding the draft Housing Element Update. HCD sent a letter to the City on November 16, 2021 stating that the City's draft Housing Element Update did not meet all statutory requirements and would need to be revised. The City submitted a revised draft Housing Element Update dated December 7, 2021 to HCD that had revisions meant to address HCD's comments. HCD provided feedback on this draft and determined that changes would be necessary to bring the City's housing element into compliance with State law. The City of Palmdale is currently in the process of submitting the Housing Element Update for its third review, and will readopt the element with the Plan. All proposed population and housing growth relative to the updated Housing Element will be accounted for in the projected population and housing growth discussed in the Plan and this EIR, and thus this EIR provides CEQA analysis for the updates to the Housing Element.

2.3.3 Overarching Purposes and Goals

As explained in Section 2.3.1, the Plan's objectives are enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Based on these objectives and input from the community, the Plan includes the overarching purposes to guide Plan policies and City decision-making. The overarching purpose is a vision statement that provides general direction for the chapter. The goals in each chapter specify ends that help achieve the overarching purpose. The policies are specific statements that guide decision-making.

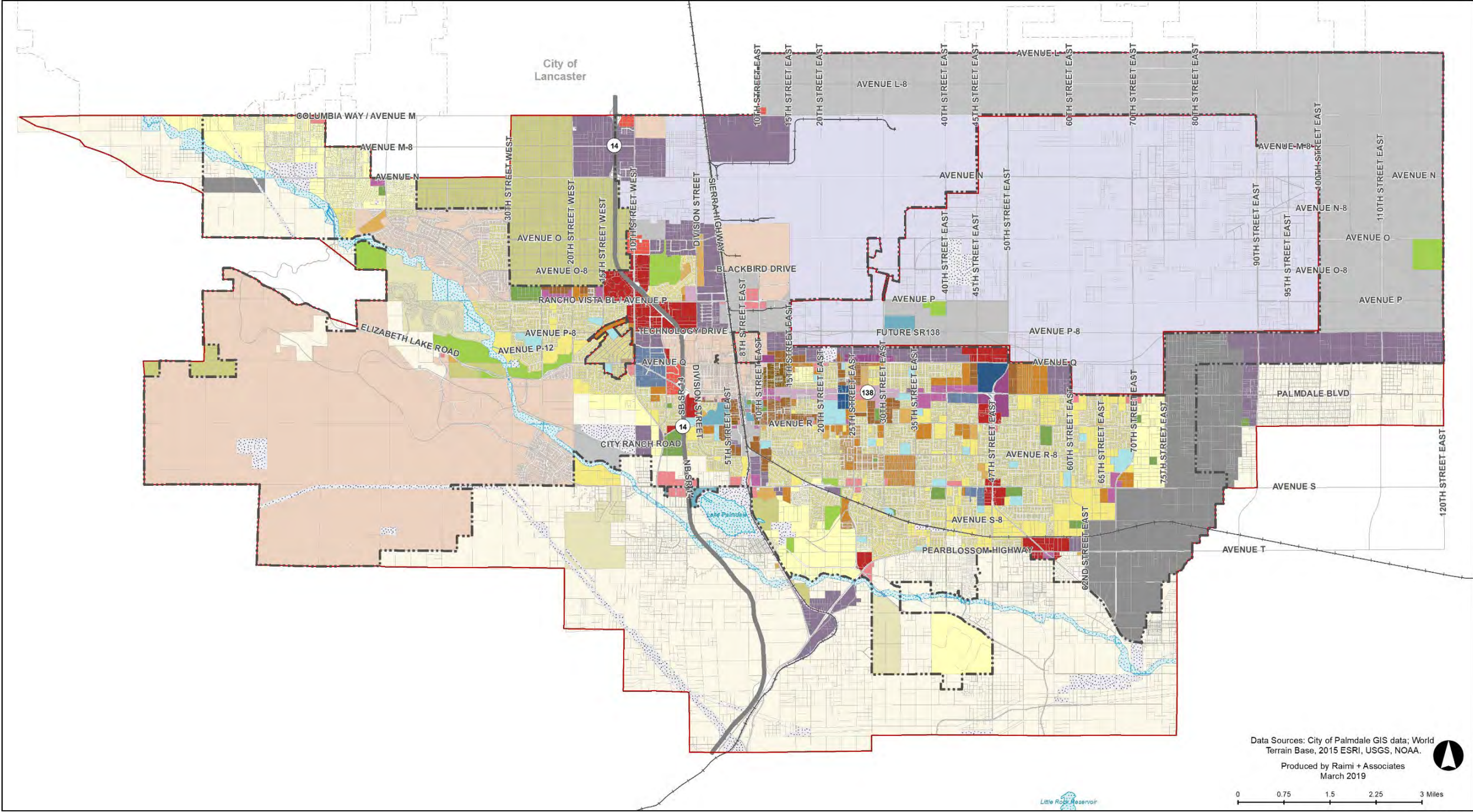
2.3.4 General Plan Land Use Map

The purpose of the General Plan land use map, shown in Figure 2-3, is to guide the general distribution, location, and extent of the various land uses in the City. The Palmdale 2045 land use map includes the land use designations proposed under the Plan. Specific land use regulations for parcel development will continue to be defined in the City's Zoning Ordinance, which will be updated following adoption of the Plan.

The proposed land use map (Figure 2-3) specifies land use designations for all areas of the city. Figure 2-3 shows the proposed breakdown of land use designations under the proposed Plan compared to the current General Plan.

The existing General Plan has 24 land use designations, while the proposed Plan has 28 land use designations. Some land use designations that exist under the current General Plan have been removed from the proposed Plan, and some new land use designations have been added to the proposed Plan. For example, four residential land use designations from the current General Plan (Medium Residential, Medium High Density Residential, Multi-family Residential, and High Density Residential) have been replaced with four new residential designations in the proposed Plan (Neighborhood Residential 1, 2, 3, and 4). In the commercial land use categories, the proposed Plan does not include the current Community Commercial, Downtown Commercial, Office Commercial, and Business Park designations, but the proposed Plan introduces a new Visitor Commercial designation, three new Mixed Use designations, a Health and Wellness District designation, and an Educational Flex designation. The current Airport and Related Uses category has been replaced with the proposed Aerospace Industrial category. The proposed Plan eliminates the current Commercial Manufacturing and Special Development categories but adds a Utilities category. The Plan eliminates the current Public Facility category but adds Public Facility categories for Civic, Park, and School uses. The proposed Plan reduces the amount of land designated Open Space from 1,002 to 889 acres, but the proposed Open Space and Public Facility-Park designations together total 1,236 acres.

Figure 2-3 Proposed General Plan Land Use Map



Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.
 Produced by Raimi + Associates
 March 2019

0 0.75 1.5 2.25 3 Miles

Updated 4/19/22

Legend															
	Equestrian Residential		Single Family Residential 3		Neighborhood Residential 4		Employment Flex		Health and Wellness		Mineral Resource Extraction		Public Facility-School		City Boundary
	Low Density Residential		Neighborhood Residential 1		Mixed Use 1		Neighborhood Commercial		Educational Flex		Specific Plan		Public Facility-Civic		Sphere of Influence
	Single Family Residential		Neighborhood Residential 2		Mixed Use 2		Visitor Commercial		Industrial		Open Space		Utilities		Major Highway/Arterial
	Single Family Residential 2		Neighborhood Residential 3		Mixed Use 3		Regional Commercial		Aerospace Industrial		Public Facility-Park		California Aqueduct		Railroad
															Water Body/Aqueduct

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Table 2-1 Comparison of Existing and Proposed Land Use Designations

Land Use	Existing General Plan		Proposed General Plan Update	
	Acres	Percentage (%)	Acres	Percentage (%)
Equestrian Residential	3,169	3.0	3,524	3.3
Low Density Residential (LDR)	23,358	22.0	21,367	20.2
Single Family Residential 1 (SFR-1)	1,491	1.4	1,662	1.6
Single Family Residential 2 (SFR-2)	3,305	3.1	3,599	3.4
Single Family Residential 3 (SFR-3)	7,682	7.2	7,163	6.8
Medium Residential (MR)	404	0.4		
Medium High Density Residential (MHDR)	219	0.2		
Multi-family Residential (MFR)	381	0.4		
High Density Residential (HDR)	81	0.1		
Neighborhood Residential 1			358	0.3
Neighborhood Residential 2			971	0.9
Neighborhood Residential 3			646	0.6
Neighborhood Residential 4			109	0.1
Community Commercial (CC)	999	0.9		
Downtown Commercial (DC)	163	0.2		
Office Commercial (OC)	329	0.3		
Neighborhood Commercial (NC)	163	0.2	364	0.3
Regional Commercial (RC)	511	0.5	997	0.9
Visitor Commercial			164	0.2
Business Park (BP)	4,244	4.0		
Airport and Related Uses (AR)	20,891	19.7		
Aerospace Industrial			21,467	20.2
Mineral Resource Extraction (MRE)	4,756	4.5	4,229	4.0
Commercial Manufacturing (CM)	342	0.3		
Industrial (IND)	13,678	12.9	13,174	12.4
Employment Flex			4,240	4.0
Specific Plan (SP)	16,102	15.2	14,986	14.1
Mixed Use 1			186	0.2
Mixed Use 2			300	0.3
Mixed Use 3			204	0.2
Educational Flex			167	0.2
Health and Wellness District			267	0.3
Special Development (SD)	103	0.1		
California Aqueduct	886	0.8	1,399	1.3
Utilities			2,516	2.4
Public Facility (PF)	1,897	1.8		
Public Facility-Civic			234	0.2
Public Facility-Park			347	0.3

Land Use	Existing General Plan		Proposed General Plan Update	
	Acres	Percentage (%)	Acres	Percentage (%)
Public Facility-School			497	0.5
Open Space (OS)	1,002	0.9	889	0.8
Total¹	106,028	100	106,028	100

¹ Totals arrived at by adding up the individual rows above may differ slightly from the number shown here, due to rounding.

Due to alterations of land use designations included in the Plan, several existing Specific Plans in the City and its Sphere of Influence will be rescinded. The following existing Specific Plans will be rescinded with adoption of the Plan:

- Joshua Hills Specific Plan
- Hillside Residential Specific Plan
- Palmdale Trade and Commerce Center Specific Plan
- Foothill Ranch Specific Plan
- Palmdale Business Park Center Specific Plan

2.3.5 Residential and Employment Growth

Table 2-2 shows City and County employment, housing, and population estimates and forecasts from the Southern California Association of Governments (SCAG) 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Demographics & Growth Forecast. SCAG projects that the City’s population will increase by 48,400 persons (30 percent) between 2016 and 2045, to an estimated 2045 population of 207,000 residents. SCAG projects that the number of households in the city will increase by 18,000 between 2016 and 2045 to an estimated 61,800 households in 2045. According to SCAG estimates, there were 0.8 jobs per household in the city in 2016 and there will be 0.7 jobs per household in 2045. This 2045 ratio is about 12.5 percent lower than the 2016 ratio. The fact that Palmdale’s jobs per household ratio is projected to decrease, and remain below a 1 to 1 ratio, suggests that Palmdale is and will remain a “jobs poor” community in which more workers commute from the city to other communities for their jobs than residents commute to points inside the city for their jobs. Many residents who work outside the community have long commutes into areas such as the Los Angeles metropolitan area.

As shown in Table 2-3, development carried out under the Plan is projected to result in approximately 22,000 new homes. Based on Palmdale’s estimated average household size of 3.44 persons (DOF, 2022), this would lead to an increase of approximately 75,756 residents in the city. Adding 75,756 new residents to the city’s estimated 2022 population of 167,398, future residential growth carried out under the Plan is predicted to increase the City’s total population to 243,154, which is above SCAG’s 2045 population forecasts of 207,000 from the 2020-2045 RTP/SCS (SCAG, 2020). The addition of approximately 75,756 residents would lead to an approximately 45% population increase between 2022 and 2045.

Table 2-2 SCAG Population, Housing, and Jobs Forecasts

Year	Population	Households	Jobs	Jobs/Household Ratio
2016	158,600	43,800	36,700	0.8
2045	207,000	61,800	45,900	0.7
Change, 2016-2045	48,400	18,000	9,200	-0.1

Source: SCAG 2020

Table 2-3 Plan Population and Housing Forecasts

Year	Population	Housing Units
2022	167,398	49,882
2045	243,154	71,882
Increase, 2022-2045	75,756	22,000

Source: California Department of Finance (DOF) 2022; Plan forecasts¹

2.3.6 Commercial/Industrial and Employment Growth by Land Use Type

Based on forecasts for square footage growth estimates for nonresidential development carried out under the Plan¹, Palmdale is forecast to gain 26,391 jobs between 2016 and 2045, as shown in Table 2-4. Most development under the Plan would be in the industrial and office space land use designations and as a result those sectors would experience the most job growth. As shown in Table 2-4, job growth carried out under the Plan is forecast to exceed SCAG employment forecasts by 17,191 jobs.

Table 2-4 Plan and SCAG Forecasts for Commercial/Industrial Development and Job Growth, 2016-2045

Land Use	Forecast New Jobs ¹	Forecast New Development
Retail + Restaurant	3,050	1,372,465 square feet
Hotel	168	252,000 square feet
Office	9,796	3,428,498 square feet
Industrial	11,820	10,046,865 square feet
Public (schools/education and civic/government)	1,557	1,168,047 square feet
Total	26,391	16,267,875 square feet
SCAG-forecast new jobs	9,200	

¹ These forecasts are available in the Background Reports/Existing Conditions Reports (especially the Socio-Economic Profile and Market Analysis) available on the project website (<https://www.palmdale2045.org/resources>) and upon request from the City of Palmdale, and in a June 2021 Growth Projections Methodology Memo produced for the Plan (Raimi + Associates, 2021).

2.4 Required Discretionary Actions

With recommendations from the City's Planning Commission, the Palmdale City Council will need to take the following discretionary actions in conjunction with or subsequent to the Plan:

- Certification of the 2045 General Plan Update EIR
- Adopt the General Plan Update (Palmdale 2045)
- Adopt the Climate Action Plan
- Adopt any Zoning Ordinance Amendments required to make the Zoning Ordinance consistent with the General Plan Update
- Adopt the HCD-certified Housing Element Update, in compliance with the requirements of State Housing Element law
- Adopt revisions to the Palmdale Transit Area Specific Plan to slightly expand the boundary of this Specific Plan. Currently, many of the parcels along the external boundary of the Specific Plan area have split zoning because they are partly inside and partly outside the Specific Plan area. This proposed expansion would fully include these parcels within the Specific Plan area. Because the Specific Plan area is in the core of the city, this action would not affect the Planning Area of the proposed General Plan Update or require annexations.

Palmdale 2045 does not involve any annexation of lands or adjustments to the City's Sphere of Influence. If annexation is pursued in the future, it would require approval from the Los Angeles Local Agency Formation Commission. The California Department of Conservation, Division of Mines and Geology, has no discretionary authority over the Plan, but will review the plans and policies relating to seismic safety for compliance with state regulations.

3 Environmental Setting

This section provides a general overview of the environmental setting for the proposed General Plan Update. More detailed descriptions of the environmental setting for each environmental issue area can be found in Section 4, *Environmental Impact Analysis*.

3.1 Introduction

According to Section 15125 of the CEQA Guidelines, an EIR must include a description of the existing, physical environmental conditions in the vicinity of the project to provide the “baseline condition” against which project-related impacts are compared.

3.2 Regional Setting

The General Plan Update will serve all land within the City limits, the City’s Sphere of Influence (SOI), and the unincorporated County areas surrounded by the City of Palmdale. Palmdale is an incorporated city in the Antelope Valley located in north Los Angeles County, approximately 60 freeway miles northeast of downtown Los Angeles. Los Angeles County is one of the nation’s largest counties, spanning approximately 4,084 square miles (County of Los Angeles 2021) with a population of approximately 10,044,458 people in 2021 (California Department of Finance [DOF] 2021). The County is topographically diverse, with mountain ranges, valleys, agricultural land, deserts, the Channel Islands, marshlands, coastal zones and densely populated urban areas. Palmdale, encompassing approximately 104 square miles, has a population of approximately 167,398 people as of 2022, according to the most recent estimates produced by the California Department of Finance (DOF 2022). Palmdale is in the Antelope Valley, which covers approximately 3,000 square miles across northern Los Angeles County and southern Kern County. Temperatures in the area average lows and highs of 71 degrees Fahrenheit (°F) and 95°F, respectively, in the summer months and 36°F and 58°F, respectively in the winter months. The Antelope Valley experiences a semi-arid climate. Rainfall occurs in the winter months but is minimal year-round, with an average of 27 days per year experiencing precipitation (National Oceanic and Atmospheric Administration [NOAA] 2021). The region is subject to various natural hazards, including earthquakes, landslides, flooding, and wildfires (City of Palmdale 1993). Like many cities in Southern California, Palmdale is rapidly growing and changing, presenting needs to diversify land use and employment opportunities, increase housing stock, update infrastructure to coordinate with new development, and revitalize the downtown area (City of Palmdale 1993).

3.3 General Geographic Setting

Palmdale is situated in northern Los Angeles County within the Antelope Valley. The Antelope Valley is disconnected from the Southern California coastal and Central California valley regions by the Tehachapi Mountains to the northwest and by the San Gabriel Mountains to the south. The far western portions of the City and the Planning Area are in the foothills of the San Gabriel Mountains. Nearby communities include the city of Lancaster and the unincorporated community of Quartz Hill to the north; other unincorporated communities such as Lake Los Angeles to the east and Sun Village, Littlerock, and Pearblossom to the southeast; Acton to the south and Agua Dulce to the

southwest; and Leona Valley to the west. While Palmdale has evolved into an urbanized area, the city still contains an abundance of open space and vacant lands (Raimi & Associates 2020a). State Route 14 (SR-14), also known as the Antelope Valley Freeway, traverses the city from north to south, and State Highway 138 (SR-138) traverses the city from east to west.

Palmdale historically had an agricultural economic base because many farmers were attracted to the area after the California Aqueduct was completed in 1913. While still retaining some of its agricultural elements, Palmdale's economic emphasis has shifted to the aerospace and defense industry, which provides many jobs to its residents (Raimi and Associates 2020b). About 13 percent of the Planning Area is occupied by residential uses, with 98 percent of residential uses being single family detached. Commercial, office, and other retail uses account for about 1.6 percent of the Planning Area and are located mainly along Palmdale Boulevard, Rancho Vista Boulevard, and other isolated clusters. Industrial, extraction, and manufacturing account for 11.6 percent of the Planning Area, with Plant 42 covering about 5,000 acres alone. Nearly 300 parcels contain civic uses, public facilities such as schools and libraries, and private institutions such as churches and private clubs, accounting for 1.5 percent of the Planning Area. Palmdale has 19 community parks totaling around 360 acres and accounting for less than 1 percent of the Planning Area. The remaining land is designated as vacant (about 62 percent) and natural conservation land (about 5 percent) (Raimi & Associates 2020c).

3.4 Topography and Drainage

Palmdale lies within the Antelope Valley, with the San Gabriel Mountains located at the southern boundary of the city. The Antelope Valley floor is relatively flat, gently sloping downward toward Lancaster. This is where Palmdale has seen most of its development (Raimi and Associates 2020c), while steeper slopes can be found in the southern and western portions of the Planning Area (City of Palmdale 1993). City Hall is located at an elevation of 2,600 feet above sea level, while the San Gabriel Mountains at the southern edge of the Planning Area reach up to 4,500 feet in elevation (Raimi & Associates 2020c). Soils in Palmdale, as in most of the Antelope Valley, consist of alluvial soils in the valley floor and in streambeds. Hard, consolidated rocks lay beneath alluvial soils in the valley floor and also make up the surrounding mountainous and rocky buttes (City of Palmdale 1993). The main soil type in Palmdale is the Adelanto Association, which is nearly level to gently sloping, very deep, well drained, and has a loamy sand to gravelly sandy loam surface layer and exists on alluvial fans and terraces. Most of the city contains level topography where soil erosion is not an issue, however, steep and unstable slopes exist on hillside areas in the southern and western edges of the city and these slopes are subject to erosion. Areas with slopes that range from 10 to 25 percent are subject to stricter, hillside construction techniques, while areas with slopes greater than 25 percent are discouraged for development (City of Palmdale 1993).

3.5 Cumulative Project Setting

Because the proposed project is a general plan update, cumulative impacts are treated somewhat differently than they would be for a project-specific development. Section 15130 of the CEQA Guidelines provides the following direction relative to cumulative impact analysis:

Impacts should be based on a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or

certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within a city's plan area. Therefore, the analysis of project impacts also constitutes the cumulative analysis, and this EIR does not contain a separate analysis of cumulative impacts. Where applicable, cumulative impacts are discussed at the end of each impact area, and cumulative impacts could occur due to future projects that may occur in or outside of the Planning Area that are not under the jurisdiction of the City (e.g., High Speed Rail).

In addition to cumulative development within the Planning area, the analysis of transportation and related impacts (such as air quality, greenhouse gases and noise) considers the effects of regional traffic growth, based on existing and future traffic volumes from the current regional growth model maintained by the Southern California Association of Governments (SCAG). As explained in SCAG's 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), SCAG's Demographics and Growth Forecast is based on three major indicators: population, households, and employment (SCAG 2020). This socioeconomic input data for the transportation model is processed at the Transportation Analysis Zone (TAZ) level. TAZs, often referred to as Tier 2 analysis, are generally equivalent to census block groups.

While, as explained above, the analysis of Plan impacts also constitutes the cumulative analysis because a general plan is cumulative in nature, a list of major approved projects is shown in Table 3-1 and a list of the development/build-out status of the City's Specific Plans is shown in Table 3-2. The information in these tables is taken from Table 3.17 and Table 3.18 of the City's Land Use and Urban Form Final Report (Raimi & Associates 2020c) and is shown for informational purposes. This information was considered by the City and the public during the Plan development process and is taken into account by, and reflected in, the Plan.

Table 3-1 Development Status of Major Approved Projects

Location or Name	Single Family Units	Multi-Family Units	Commercial Square Feet	Industrial Square Feet
Southeast corner of Avenue M and 70 th Street West	97			
South side of Palmdale Boulevard and 650 feet west of 55 th Street East	75			
Falcon Glen (North side of Ave S, east of 20 th Street West)	400			
Northwest corner and northeast corner of Tierra Subida and Avenue S		100		
Southwest corner of Avenue Q and SR 14			125,000	
Northeast corner of Avenue R and 60 th Street East	28			
308 East Avenue R-8	15			
38821 30 th Street East				80,000
South of East Avenue Q-4 between 9 th and 10 th Streets East		150		
Between 70 th and 75 th Streets West on Avenue M-8	155			
Southeast corner/northeast corner of 20 th Street West and Rancho Vista Boulevard	48	336		

Location or Name	Single Family Units	Multi-Family Units	Commercial Square Feet	Industrial Square Feet
North side of Rancho Vista Boulevard, west of 15th Street West		344		
NWC of 15th Street West and Rancho Vista Boulevard			43,000	
Quail Valley (South of Avenue S; 1.2 miles west of SR-14)	791			
SEC of Avenue S and 42nd Street East		18		
5th Street East and Avenue Q-12		80		
20th Street West, Amargosa Channel	28			
SEC of Avenue R and Division Street		101		
South of Avenue S, west side of 47th Street East			240,000	
West of 9th Street East between Avenues Q-11 and Q-12		120		
Southeast corner of Avenue R and 65th Street East	162			
Southwest corner of Palmdale Blvd and 70th Street East	41			
Ritter Ranch	579			
West side of La Quinta Lane, south of Avenue O				30,000
Total	2,419	1,249	408,000	110,000

Source: City of Palmdale GIS Data 2019

Table 3-2 Development Status of Approved Specific Plans

Name	Entitled Units	Built Units	Entitled Non-Residential	Built Non-Residential
Antelope Valley Business Park			1,800,000	
Antelope Valley Auto Center			680,000	400,000
City Ranch (Anaverde)	5,200	1,000	350,000	
Foothill Ranch (College Park)	380		100,000	
Hillside Residential	407	350		100,000
Joshua Hills	1,425	1,425	120,000	100,000
Lockheed Plant 10			3,100,000	2,180,000
Palmdale Trade and Commerce Center			3,500,000	1,700,000
Palmdale Transit Village	1,027	227	500,000	75,000
Rancho Vista	5,268	4,600	500,000	120,000
Ritter Ranch	7,200		450,000	
Palmdale Business Park Center			2,500,000	
Total	20,907	7,602	13,600,000	4,675,000

Source: City of Palmdale GIS Data 2019

4 Environmental Impact Analysis

This section discusses the possible environmental effects of the project for the specific issue areas identified as having the potential to experience significant impacts. “Significant effect” is defined by CEQA Guidelines Section 15382 as:

A substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant.

The assessment of each issue area begins with an introduction summarizing the environmental effects considered for that issue area. This is followed by the setting and impact analysis. In the impact analysis, the first subsection identifies the methodologies used and the “significance thresholds,” which are those criteria adopted by the City, other agencies, universally recognized, or developed specifically for this analysis, to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is listed separately in bold text, with the discussion of the effect and its significance following. Each bolded impact listing also contains a statement of the significance determination for the environmental impact as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the significance threshold level with implementation of reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per Section 15093 of the CEQA Guidelines.
- **Less than Significant with Mitigation.** An impact that can be reduced to below the significance threshold level with implementation of reasonably available and feasible mitigation measures. Such an impact requires findings to be made under Section 15091 of the CEQA Guidelines.
- **Less than Significant.** An impact that may be adverse, but does not exceed the significance threshold levels and does not require mitigation measures. Mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
- **No Impact or Beneficial.** No impact would occur or the Plan would have a beneficial effect.

Following each environmental effect discussion, a list is provided of recommended mitigation measures (if required) and the residual effects or level of significance remaining after the implementation of the measures. In those cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed as a residual effect. Please refer to Table ES-1 in the Executive Summary of this EIR for a summary of all impacts and mitigation measures that apply to the project.

The impact analysis concludes with a discussion of cumulative effects that evaluates the impacts associated with the project in conjunction with other future development in the area near Palmdale. This EIR’s approach to cumulative impacts analysis is further described in Section 3.3, *Cumulative Project Setting*, of this EIR.

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4.1 Aesthetics

This section describes current visual conditions in and around Palmdale and evaluates the potential aesthetic and visual impacts of the Plan.

4.1.1 Environmental Setting

Visual resources are an important component of the quality of life of any community. As residents, workers, and/or visitors experience a place, their primary sensory interaction with that place is visual, and a wide variety of visual elements form the aesthetic character. These elements include scenic vistas, scenic resources, light and glare, and the visual character and quality of the area's topography, natural features, and urban form.

a. Scenic Resources

Scenic Streets

While the City has no designated scenic streets, streets in Palmdale can and sometimes do enhance the aesthetic environment of the community, if they are well-designed. They can also serve an open space function by providing walking, jogging, bicycling, and relaxation opportunities, when they are configured with adequate sidewalks, bike paths, street trees, landscaped planting areas, and other streetscape amenities. This is further extended if they connect to other amenities with potential scenic value, such as parks and open space.

Scenic Highways

California's Scenic Highway Program was created in 1963. Its purpose is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. Scenic corridors typically pertain to highways and visible lands outside the highway right-of-way, generally described as the view from the road. There are no officially designated scenic highways in the Planning Area. Angeles Crest Highway (Route 2), which is approximately 25 miles south of Palmdale, is an officially designated state scenic highway and Interstate 210, which is approximately 26 miles south of the of Palmdale, is eligible for state scenic highway designation (Caltrans 2019).

Scenic Vistas

A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the benefit of the public. Scenic vistas encompass long-range views and often emphasize large-scale natural features. The following is a discussion of scenic vistas in the Planning Area.

Scenic views of the desert and local mountains are the predominant scenic vistas in Palmdale. Desert views are primarily available along the edges of the City, particularly in the undeveloped northern portions. Leona Valley (approximately 4 miles to the west) is a scenic area. Distant views of the San Gabriel Mountains (approximately 34 miles to the southeast), Sierra Pelona Mountains (approximately 11 miles to the west), and Tehachapi Mountains (approximately 36 miles to the northwest) are available across the Planning Area, but the best views of these mountains are from large areas of unobstructed open space. In other areas, views of the mountains are fully to partially obstructed by existing trees and buildings.

Ritter Ridge and the San Gabriel Mountains provide views from their heights down into the rest of the Antelope Valley. Similarly, the hills behind Foothill Ranch offer scenic vistas. Most of the principal north-south avenues (especially 30th Street West, 20th Street West, Division Street, 10th Street East, 25th Street East, 30th Street East, 40th Street East, and 47th Street East) provide views southward of the mountains themselves. New development can potentially frame and accentuate some of these views.

b. Urban Visual Character and Quality

While scenic vistas encompass long-range views and often emphasize large-scale natural features, views are also affected by more immediate visual surroundings. As stated in the Plan, local aesthetics, typically on a neighborhood level, also contribute to the Planning Area's urban visual character. Development densities and types, distinctive neighborhoods and commercial districts, unique architectural elements, prominent public institutions/landmarks, and other elements all contribute to the Planning Area's aesthetic quality.

Development Patterns

The Land Use Element of the City's current General Plan describes Palmdale as a city with low densities and a rural lifestyle. The developed portions of the City occupy a compact area bounded by Littlerock Wash on the east, the California aqueduct on the south, and 70th Street West on the west. Littlerock Wash forms a natural boundary between urban residential development in Palmdale and rural residential uses in the eastern portion of the Planning Area. Palmdale is also characterized by industrial development, as a large portion of the Planning Area is within Air Force and City of Los Angeles Division of Airports property. While industrial development related to aerospace has occurred at Air Force Plant 42, the airport property is largely vacant, supporting minor agricultural uses and sewage treatment facilities.

Residential Character

Palmdale's residential developments are separated by rural residential development and suburban residential development. Rural residential development is characterized by large lots, agricultural accessory uses such as horses and farm animals, and rural standards for streets and other public improvements. This area is typically zoned Light Agriculture (A-1) and is designed to maintain a rural lifestyle. The suburban development pattern is characterized by single family detached dwelling units constructed by tract builders on land which was previously subdivided, at densities ranging from three to six units per acre. This development contains older tracts developed in the post-war housing boom of the 1950's to golf course subdivisions and planned unit developments, Palmdale's single family housing stock reflects development patterns shaped by federal regulations, financing and marketing considerations, and building industry practices.

AVENUE Q

Historically, residential land uses were concentrated in the core area bounded by Avenue Q, Avenue S, 47th Street East, and State Route (SR) 14 (Antelope Valley Freeway). This area contains the widest diversity of residential development, including apartments, townhomes, mobile home parks, and medium-lot single family detached homes.

Industrial/ Agricultural

Palmdale's largest industries in terms of both land and jobs are manufacturing, defense, and aerospace. Industrial, extraction, and agriculture uses occupy over 12,000 acres within the Planning Area, around one-tenth of the overall area. The two uses that command the most acreage are agriculture and military industrial (Plant 42). Plant 42 is a United States Air Force facility. It is the Antelope Valley's second-largest employer, spreading across nearly 5,000 acres, and operates as a component of Edwards Air Force Base 23 located miles to the northeast. Most of the facilities are operated by private contractors and serve as a manufacturing plant for aircraft used by the United States government. Other large-format employment uses are found west and south of Plant 42, while smaller warehouse, wholesale, manufacturing, and industrial business parks are located along 6th Street East, Avenue O, or within the area bounded by Avenue P/Avenue Q/Division Street/30th Street East.

Commercial Areas

Palmdale provides businesses and a range of restaurants for the community. Non-residential rehabilitation activities serve to promote the retention, stabilization, and/or expansion of viable commercial activities, enhance the visual character of those areas, replace outdated or incompatible design elements, and respond to any infrastructure or related constraints that serve as disincentives to the improvement of those areas. Palmdale Boulevard has identifiable aesthetic styles described in more detail below.

PALMDALE BOULEVARD

Palmdale Boulevard is a major east-west arterial roadway that runs through the central portion of the Planning Area. East of the SR 14, Palmdale Boulevard is mostly developed and contains a strip mall until 47th Street. Past 47th Street Palmdale Boulevard contains large portions of vacant land and some residential development. Palmdale Boulevard from SR 14 to 47th Street is part of SR 138 and under Caltrans jurisdiction.

California High Speed Rail System

The future California High Speed Rail system will include a multi-modal high-speed rail station near the existing Palmdale Transportation Center. High-speed rail service to the San Fernando Valley and the Los Angeles basin will provide travel options for commuters. High-speed rail combined with Brightline West high-speed rail, expanded Metrolink, Amtrak, Greyhound, FlixBus, other bus/transit services, and improvements to key arterials and freeways will help reduce congestion and air pollution, and provide better travel options for residents. Funding and construction details are yet to be determined (City of Palmdale 2022a).

Open Space and Recreational Facilities

Open space provides visual relief from urbanized areas, including views for motorists, bicyclists, and pedestrians. Open space is provided in the form of parks and street medians interspersed throughout the city. Palmdale has a recreation center that offers programs and classes for the community.

PARKS

Currently, the City maintains 20 parks that total 365 acres throughout the Planning Area. Examples of these parks include the Amargosa Creek Natural Park, which has 52 acres of habitat that preserve

and enhance the century-old Western Joshua and California Juniper trees on-site (City of Palmdale 2003); and Joe Davies Heritage Airpark at Palmdale Plant 42, which is a family friendly, uniquely Palmdale destination centered around displays of aircraft that portray aerospace heritage and present the historical significance of United States Air Force Plant 42 (City of Palmdale 2022b).

c. Light and Glare

Palmdale contains some built urbanized areas but also contains a variety undeveloped parcels. Therefore, a small amount of nighttime ambient light from urban uses already exists. Typical contributors to nighttime ambient light levels include both stationary and mobile sources. Stationary sources include exterior structure illumination, light spillover from interior lighting, lighting for outdoor uses such as sports fields and courts, parking lot lighting, streetlights, and illuminated signage such as billboards. In an urban setting, even with some undeveloped portions like in Palmdale, the principal mobile contributor to nighttime light is vehicle headlights. While exterior lighting is important for safety and wayfinding in an urban setting, excessively high, ambient nighttime light levels can have various negative effects, including reduction of night sky visibility, and annoyance or interference with sleep when the light intrudes into interior spaces.

Glare is a separate but related phenomenon and can be defined as excessive and uncontrolled brightness from a particular source, with the viewer being exposed to a direct or reflected view of the light source (Rensselaer Polytechnic University 2007). During the day, the primary source of glare is sunlight reflected by highly reflective surfaces such as glass and metal on buildings and cars, while nighttime light and glare comes from the same sources of nighttime ambient light, discussed above.

4.1.2 Regulatory Setting

a. State

State Scenic Highways

The California Department of Transportation (Caltrans) defines a scenic highway as any freeway, highway, road, or other public right-of-way, that traverses an area of exceptional scenic quality. Suitability for designation as a State scenic highway is based on vividness, intactness, and unity, as described in Caltrans Scenic Highway Guidelines (2008):

- Vividness is the extent to which the landscape is memorable. This is associated with the distinctiveness, diversity, and contrast of visual elements. A vivid landscape makes an immediate and lasting impression on the viewer.
- Intactness is the integrity of visual order in the landscape and the extent to which the natural landscape is free from visual intrusions (e.g., buildings, structures, equipment, grading).
- Unity is the extent to which development is sensitive to and visually harmonious with the natural landscape.

There are no officially designated scenic highways within the Planning Area. The closest state scenic highway as identified by Caltrans is Angeles Crest Highway (Route 2), approximately 25 south of Palmdale and Interstate 210, approximately 26 miles south of Palmdale, is eligible for state scenic highway designation (Caltrans 2019). A state scenic highway changes from “eligible” to “officially designated” when the local jurisdiction adopts a scenic corridor protection program, applies to

Caltrans for scenic highway approval, and receives notification from Caltrans that the roadway has been designated as a Scenic Highway.

City of Palmdale Municipal Code

Title 17 of the Palmdale Municipal Code (PMC), *Zoning*, includes the City's zoning regulations and standards. The purpose of Title 17 is to designate, regulate, and control the location, use, height, and alteration of buildings, structures, and land for residence, commerce, trade and industry, or other purposes. Section 17.86.030 of the PMC includes lighting standards for protecting the aesthetic character of the City. Examples of these standards include requiring lighting fixtures within residential zones not to exceed 15 feet in height to avoid glare and light spread. The City is divided into various zones, with standards for each zone regulating these qualities. Such regulations are deemed necessary to encourage the most appropriate use of land and preserve the aesthetic qualities of the City. Examples include requiring development to provide adequate open spaces for light and air, limiting the density of development, and implementing landscaping standards.

The City has adopted plans with established zones that help govern development in various parts of Palmdale where zoning regulations and standards may differ from the PMC. The specific plans range from one development (e.g., a specific site) to a large geographic area. The City's specific plans include the following:

- Antelope Valley Auto Center Specific Plan
- Antelope Valley Business Park Specific Plan
- City Ranch Specific Plan
- Foothill Ranch Specific Plan (to be rescinded)
- Hillside Specific Plan (to be rescinded)
- Joshua Hills Specific Plan (to be rescinded)
- Lockheed Plant Specific Plan
- Palmdale Business Park Center Specific Plan (to be rescinded)
- Palmdale Transit Area Specific Plan (PTASP)
- Palmdale Trade and Commerce Center Specific Plan (rescinded when the PTASP was adopted)
- Rancho Vista Specific Plan
- Ritter Ranch Specific Plan

Hillside Management

Chapter 17.100 of the PMC, *Hillside Management*, includes provisions that allow for development in hillside areas in conjunction with the preservation of natural open space on steeper terrain. The City's skyline backdrop provides views of significant natural ridgelines and prominent landforms. Natural landforms and features forming this backdrop include Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona mountains, and secondary ridges associated with the San Andreas Rift Zone and the lower foothills of the San Gabriel mountains. The City considers hillsides as a scenic skyline backdrop, which is visible from the Antelope Valley floor, or adjacent valleys.

4.1.3 Impact Analysis

a. Methodology and Significance Thresholds

The assessment of aesthetic impacts involves qualitative analysis inherently subjective in nature. Viewers react to views and aesthetic conditions differently. This evaluation measures the existing visual environment of the Planning Area, described above, against implementation of the Plan, analyzing the nature of the anticipated change. It is important to underscore that the Plan does not contain specific development proposals. This analysis therefore focuses on land use changes envisioned under the Plan and the aesthetic impacts on the community in terms of arrangement of built to open space, density and intensity of development, and height according to the thresholds of significance discussed below. The existing visual character and context of the Planning Area is shown and described in Section 4.1.1, *Environmental Setting*, of this EIR.

According to CEQA Guidelines Appendix G, impacts related to aesthetics would be potentially significant if implementation of the Plan would:

1. Have a substantial adverse effect on a scenic vista
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway
3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings; or, in urbanized areas, conflict with applicable zoning and other regulations governing scenic quality
4. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

b. Project and Cumulative Impacts

Threshold 1: Would implementation of the Plan have a substantial adverse effect on a scenic vista?

Impact AES-1 FUTURE DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY AFFECT PUBLIC VIEWS ALONG DESIGNATED SCENIC CORRIDORS. ADHERENCE TO DEVELOPMENT REVIEW PROCEDURES AND PLAN POLICIES WOULD REDUCE POTENTIAL IMPACTS TO SCENIC VISTAS TO A LESS THAN SIGNIFICANT LEVEL.

The Plan would allow for increased development in the Planning Area, which could include increased building heights. Increased heights could create adverse effects on scenic vistas of the San Gabriel Mountains in portions of the Planning Area. Views of scenic vistas would change gradually and incrementally because the Plan covers approximately the next 20 years and development would occur gradually according to market demand over that time. However, future developments would undergo further environmental and design review on a project-by-project basis, as applicable and as they are proposed, to identify and address project-specific impacts to scenic vistas. Additionally, the following three General Plan policies would limit building heights in two specific geographic areas of the Planning Area and for industrial land uses:

- **Policy LUD-10.5: Avenue Q Revitalization.** Reinforce Avenue Q with development patterns that create a “Main Street” environment. Design the buildings facing Avenue Q (and to a lesser extent 6th Street East and 3rd Street East) to reflect the vision for a new “Main Street” – active uses, street-oriented entrances, tall floor-to-ceiling heights, reduced setbacks (unless adjacent to a plaza or park).

- **Policy LUD-17.3 Industrial Development Standards.** Adopt development standards for industrial uses near residential uses, to ensure compatibility and aesthetically pleasing views from adjacent rights of way, including but not limited to standards for screening of outdoor storage, locations of loading and refuse disposal areas, height, bulk, impervious surface area, architectural enhancement, landscaping, and other measures as deemed appropriate.
- **Policy LUD-24.4 Avenue S and State Route 14.** Require that development near the intersection of Avenue S and State Route 14 is complementary to Lake Palmdale, surrounding hillside, and mountain views by minimizing building heights and viewshed impacts; and is consistent with sound water quality management practices by providing a minimum 100-foot setback from the historical high-water mark of Lake Palmdale and meeting other relevant environmental standards.

The Plan does not propose specific development projects that would have a substantial negative impact on public views or scenic vistas. In addition, there are no adopted scenic vistas in the Planning Area. Development and redevelopment that may occur under the Plan would be governed by the policies listed above as well as design standards contained in the PMC, which would be applied and enforced through the City's standard development review procedures that concern the protection of public views or scenic vistas. Impacts to scenic vistas would therefore be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would implementation of the Plan substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Impact AES-2 FUTURE DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY IMPACT SCENIC RESOURCES, INCLUDING TREES, ROCK OUTCROPPINGS, AND HISTORIC BUILDINGS. THIS DEVELOPMENT COULD RESULT IN DIRECT IMPACTS TO SCENIC RESOURCES SHOULD CONSTRUCTION RESULT IN THE PHYSICAL DEMOLITION, DESTRUCTION, RELOCATION, OR ALTERATION OF A SCENIC RESOURCE. COMPLIANCE WITH PLAN GOALS AND POLICIES WOULD REDUCE POTENTIAL IMPACTS TO SCENIC VISTAS TO A LESS THAN SIGNIFICANT LEVEL.

Future development carried out under the Plan may impact scenic resources, including trees, rock outcroppings, and historic buildings. This development could result in direct impacts to scenic resources should construction result in the physical demolition, destruction, relocation, or alteration of a scenic resource. Scenic resources in the Planning Area include scenic tree resources, hillsides, and historic buildings. As identified in PMC Section 14.04.20 scenic tree resources include Joshua trees or those designated as 'desert vegetation' such as the California juniper. PMC Chapter 17.100 identifies hillsides (including, Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona Mountains, and the lower foothills of the San Gabriel Mountains) as scenic resources if visible from the Antelope Valley floor. As discussed in Section 4.5, *Cultural Resources*, there are five state-designated and 14 locally recognized historical resources located in Palmdale. Four of these resources are buildings located on the property of U.S. Air Force Plant 42. Any future development of these historical resources would be subject to future CEQA review to ensure no impact to that historic resource. Future development in the Planning Area may impact desert vegetation, hillsides, and historic buildings through the destruction or alteration of such resources.

The following goals and policies in the Conservation Element of the Plan would ensure that potential impacts to desert vegetation and hillsides are reduced and minimized in conjunction with future development:

- **Goal CON-1: Protect Significant Ecological Areas in and around the City, including, but not limited to, sensitive flora and fauna habitat areas.**
 - **Policy CON-1.2: Joshua and Juniper trees.** Continue enforcing the City's Native Vegetation Ordinance to protect western Joshua Trees and Juniper Trees.
- **Goal CON-2: Preserve designated natural hillsides and ridgelines in the Planning Area, to maintain the aesthetic character of the Antelope Valley.**
 - **Policy CON-2.1: Hillside land management.** Establish a systematic approach to the management of land uses and development in hillside areas.
 - **Policy CON-2.2: Natural ridgelines.** Retain the integrity of the natural ridgelines of Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona Mountains, and the lower foothills of the San Gabriel Mountains.
 - **Policy CON-2.3: Density transfers.** Encourage density transfers where appropriate so that the density of development respects and is reflective of the natural terrain.
 - **Policy CON-2.4: Development in suitable locations.** Facilitate development in more suitable locations while retaining significant natural slopes and areas of environmental sensitivity as natural open space.

The following goals and policies in the Conservation Element of the Plan would ensure that impacts to historic buildings are reduced and minimized in conjunction with future development:

- **Goal CON-8: Protect historical and culturally significant resources, which contribute to the community's sense of history.**
 - **Policy CON-8.1: Historic landmark.** Identify and recognize historic landmarks from Palmdale's past.
 - **Policy CON-8.2: Cultural and historic buildings.** Identify and preserve unique cultural and historic buildings and features in order to enhance community character.
 - **Policy CON-8.3: Identified landmarks.** Maintain, rehabilitate, and appropriately reuse identified landmarks where feasible.
 - **Policy CON-8.4: Preservation in new development.** Require that new development preserve significant historic, paleontological, or archaeological resources.
 - **Policy CON-8.5: Tribal consultation.** Conduct Native American consultation consistent with most recent regulations when new development is proposed in potentially culturally sensitive areas.
 - **Policy CON-8.6: Discovery coordination with Tribal groups.** When human remains suspected to be of Native American origin are discovered, coordinate with the Native American Heritage Commission and any local Native American groups to determine the most appropriate course of action.
 - **Policy CON-8.7: Cooperation with preservation entities.** Cooperate with private and public entities whose goals are to protect and preserve historic landmarks and important cultural resources.
 - **Policy CON-8.8: Recognition of local historic resources.** Promote respect and recognition of unique historical resources within the community by identifying significant cultural

resources with landmark designation plaques, directional signage, self-guided tours, school curriculum, programs, and events.

- **Policy CON-8.9: Maintain cultural assets.** Discourage historic landmark properties from being altered in such a manner as to significantly reduce their cultural value to the community.
- **Goal CON-9: Promote community design that reflects Palmdale’s history and preserves Palmdale’s cultural resources.**
 - **Policy CON-9.1: Design elements.** Promote use of design elements, which reflect the various periods of history and settlement in Palmdale.
 - **Policy CON-9.2: Locally relevant community design.** Community design should reflect the community’s roots, rather than simulating historic periods or events, which did not occur in the Antelope Valley.
 - **Policy CON-9.3: Locally appropriate landscape design.** Preserve the natural heritage of the region through landscape design by ensuring the local stock of native trees and vegetation is replenished and protected.

Implementation of specific Plan policies such as those under Goal CON-1, Goal CON-2, Goal CON-8, and Goal CON-9 would ensure that desert vegetation is conserved and adequate study and identification of historic structures occur. Adherence to these policies would ensure that impacts to historic and scenic resources are less than significant.

As discussed in Section 4.1.1, *Environmental Setting*, there are no officially designated scenic highways in the Planning Area. The closest state scenic highway as identified by Caltrans is Angeles Crest Highway (Route 2), approximately 25 south of Palmdale and Interstate 210, approximately 26 miles south of Palmdale, is eligible for state scenic highway designation (Caltrans 2019). A state scenic highway changes from “eligible” to “officially designated” when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the roadway has been designated as a Scenic Highway. The Planning Area is not visible from Interstate 210 (or vice versa) because of intervening mountains. While the Planning Area may be visible from portions of Route 2, implementation of the Plan would not substantially affect scenic resources in the viewshed of this state scenic highway in a noticeable way because development carried out under the Plan would not be highly noticeable or obtrusive from this distance or substantially affect scenic resources in the viewshed of Route 2. Impacts would be less than significant.

Future development would be required to comply with the Plan policies and regulations that concern the preservation of scenic resources, including PMC (Chapter 17.100). Adherence to specific Plan policies, such as Goal CON-1, Goal CON-2, Goal CON-8, and Goal CON-9 listed above, would ensure that new developments, when proposed, preserve and take into consideration significant resources such as trees, hillsides, and historical resources. Regulations governing historical resources are also discussed in Section 4.5, *Cultural Resources*.

For all the reasons discussed above, potential impacts to scenic resources associated with the Plan would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 3: Would implementation of the Plan, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) In urbanized areas, would the Plan conflict with applicable zoning and other regulations governing scenic quality?

Impact AES-3 WHILE DEVELOPMENT UNDER THE PLAN COULD CHANGE THE VISUAL CHARACTER AND QUALITY OF PORTIONS OF THE PLANNING AREA, THE PLAN CONTAINS GOALS AND POLICIES SPECIFICALLY DESIGNED TO PROTECT AREAS OF HIGH VISUAL CHARACTER AND QUALITY AND IMPROVE AREAS OF LOW VISUAL CHARACTER AND QUALITY. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The land use changes envisioned under the Plan may affect the aesthetic character of various areas in Palmdale. While all land uses would be required to adhere to the design, density, and height guidelines applicable to particular land use designations, the Plan would also establish goals and policies that would help define and guide the desired visual character and quality of specific districts, village centers, and corridors in the community, described in Section 2, *Project Description*, of this EIR. The vision established by the Plan places a greater emphasis on enhancing community identity, building on planned infrastructure investments, integrating health and equity, and capitalizing on the Planning Area’s unique location in the region. The vision established by the Plan places a greater emphasis on an active and vibrant downtown and transforming Palmdale Boulevard (the current streetscape of which is shown in Figure 4.1-1) into a mixed-use corridor. These corridors are highly visible and can help to define the character of the Planning Area. As discussed below, the Plan defines (both physically and visually) the desired character and quality of these areas and sets policies in place to ensure that the Planning Area retains the unique aesthetic qualities valued by its residents. The Plan does not call for substantial changes to established residential neighborhoods, and includes specific policies aimed at retaining the character of rural areas as stated in Goal LUD-22 listed below.

Figure 4.1-1 Palmdale Boulevard Current Streetscape





Source: Land Use + Urban Form Existing Conditions Report (City of Palmdale 2020)

The Plan would foster a high level of visual character and quality in various ways. For example, as stated in Section 2.3.1 of this EIR, the Plan would focus on enhancing community identity through the following goals related to visual character and quality that are in turn part of the Plan's vision themes:

- Seek to promote Palmdale's positive reputation while boosting community beautification (unified and welcoming community vision theme)
- Create a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale (active and vibrant downtown vision theme)
- Improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky (beautiful natural setting vision theme)

Public projects to enhance the Planning Area include the Palmdale Transportation Center Transit & Design Project, Avenue Q Complete Streets Project, and the Digitized Utilities Inventory Project.

The goals and policies in the Land Use and Community Design Element of the Plan related to visual character and quality include:

- **Goal LUD-10: Growth of a transit-oriented community near high-speed rail that combines high-quality mixed-use development, a Downtown 'feel,' office employment, affordable housing, and improved mobility.**
 - **Policy LUD-10.2: Places for the Community.** Develop community gathering spaces including plazas and neighborhood parks near the future multimodal transit station, in order to evolve the relocated Palmdale Transportation Center into an attractive and unique transit gateway.
 - **Policy LUD-10.5: Avenue Q Revitalization.** Reinforce Avenue Q with development patterns that create a "Main Street" environment. Design the buildings facing Avenue Q (and to a lesser extent 6th Street East and 3rd Street East) to reflect the vision for a new "Main Street" – active uses, street-oriented entrances, tall floor-to-ceiling heights, reduced setbacks (unless adjacent to a plaza or park).
 - **Policy LUD-10.6: Pedestrian-Oriented Design.** Implement urban design guidelines and features that encourage pedestrian activity and reduce automobile use.

- **Goal LUD-17: Facilitation of industrial areas that support and buffer Plant 42 while maintaining compatibility with adjacent non-industrial uses.**
 - **Policy LUD-17.2: Infrastructure Master Planning.** Encourage master planning and infrastructure funding districts within industrial areas to ensure adequate and comprehensive provision of infrastructure and efficient, attractive designs, through cohesive planning of larger development projects.
 - **Policy LUD-17.3: Industrial Development Standards.** Adopt development standards for industrial uses near residential uses, to ensure compatibility and aesthetically pleasing views from adjacent rights of way, including but not limited to standards for screening of outdoor storage, locations of loading and refuse disposal areas, height, bulk, impervious surface area, architectural enhancement, landscaping, and other measures as deemed appropriate.
- **Goal LUD-24: Maintain the character of rural areas.**
 - **Policy LUD-24.1: Appropriate Densities.** Avoid designating land for higher density uses where prevailing existing development patterns are rural residential with lot sizes of one acre or more.
 - **Policy LUD-24.2: Commercial Developments.** Permit neighborhood commercial development within rural areas to serve the needs of these areas, provided that such projects include safe, logical, and functional access from the adjacent neighborhoods for pedestrian and equestrian users.
 - **Policy LUD-24.3: Septic Requirements.** Enforce Los Angeles County standards and requirements regarding septic systems.
 - **Policy LUD-24.4: Avenue S and State Route 14.** Require that development near the intersection of Avenue S and State Route 14 is complementary to Lake Palmdale, surrounding hillside, and mountain views by minimizing building heights and viewshed impacts; and is consistent with sound water quality management practices by providing a minimum 100-foot setback from the historical high-water mark of Lake Palmdale and meeting other relevant environmental standards.
 - **Policy LUD-24.5: Landfill Buffer.** Provide a 1,000-foot buffer between Antelope Valley Landfill operations and residential developments.
 - **Policy LUD-24.6: Potential Annexation.** Consider annexation as a last resort option and only as a logical extension of the City boundaries as neighboring properties are annexed and adjacent properties are developed. Before initiating annexation, evaluate the fiscal, infrastructural and land use impacts of proposed annexations to the City, as well as the desires of inhabitants within the areas to be annexed.

Development and redevelopment that may occur under the Plan would be governed by these policies, which would be applied and enforced through the City's standard development review procedures. These plans and procedures work together to protect Palmdale's aesthetic resources and are a means to retain the community's character, while providing enhancements in certain areas of the city. Impacts to the visual character and quality of the Planning Area would therefore be less than significant with implementation of applicable policies and regulations.

Mitigation Measures

No mitigation measures are required.

Threshold 4: Would implementation of the Plan create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Impact AES-4 NEW DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD ADD NEW SOURCES OF LIGHT AND GLARE TO THE PLANNING AREA, BUT DEVELOPMENT WOULD BE REQUIRED TO COMPLY WITH THE CITY'S LIGHTING REGULATIONS AND IMPACTS WOULD THEREFORE BE LESS THAN SIGNIFICANT.

The Plan proposes development changes include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. This planned development could create new sources of light from exterior building illumination, outdoor lighting, and glare from reflective building surfaces and vehicle surfaces or the headlights of vehicular traffic. As a result, these new sources of light or glare could affect adjacent light-sensitive land uses.

Portions of the Planning Area are already developed and a substantial amount of ambient light from urban uses already exists. As discussed in chapter 4.11 *Land Use*, implementation of the Plan includes goals that facilitate the development of complete neighborhoods; and promote high quality mixed use development that includes office employment, affordable housing and improved transit and pedestrian linkages near existing transit. Such development would occur in areas that are already at least partly developed. Thus, the Plan would not in itself significantly increase light and glare beyond existing conditions or levels already allowed under the current Plan. As discussed in Section 4.1.2, *Regulatory Framework*, PMC 17.86.030 addresses design standards that apply to lighting in Palmdale. Examples of these standards include requiring lighting fixtures within residential zones not to exceed 15 feet in height to avoid glare and light spread. Lastly, the Plan contains the following goal related to maintaining a dark night sky that is in turn part of the Plan's vision themes:

- Improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky (beautiful natural setting vision theme)

For all the reasons discussed above, the Plan would not create new sources of substantial light or glare that would adversely affect day or nighttime views in the area, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Cumulative Analysis

Future development carried out under the Plan, in an existing developed area, could result in aesthetic impacts. Such impacts would be site-specific and would require evaluation on a case-by-case basis at the project level in accordance with each proposed project. Each discretionary project would require separate discretionary approval and evaluation under CEQA, which would address potential impacts to visual resources and identify necessary mitigation measures, where appropriate. Even ministerial (non-discretionary) projects carried out in the City would be subject to the City's ministerial development review procedures. These projects taken together as a whole would increase the impression of urbanization and development in the Planning Area but, as

discussed throughout this chapter of the EIR (and especially Impact AES-3) and in Chapter 2, *Project Description* of this EIR, this development would be in response to market demand, and is intended to enhance community identity, build on planned infrastructure investments, improve multi-modal active transportation and connectivity, integrate health and equity, and capitalize on the City's unique location in the region. This development would also be strategically focused in areas that have been determined by the community through the Plan development process (including public involvement) to preserve existing neighborhoods and improve the focus areas. Consequently, future development carried out under the Plan would not result in significant cumulative environmental impacts in conflict with aesthetics requirements for preserving visual character, public views, scenic vistas and resources, or requirements for minimizing and controlling potential light and glare. Therefore, the Plan would not cause a cumulatively considerable impact on aesthetics, and no mitigation is required.

4.2 Agriculture and Forestry Resources

This section evaluates the agriculture and forestry resource impacts of the proposed Plan. This section is based in part on information from the Land Use and Urban Form Background Report prepared for the proposed Plan (Raimi & Associates 2020c).

4.2.1 Setting

Important Farmland

To characterize the environmental baseline for agricultural resources, Important Farmland Maps produced by the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) were reviewed. Unless otherwise expressed, the future use of "Farmland" specifically includes the following definitions provided by the DOC (DOC 2019):

- Prime Farmland: Land which has the best combination of physical and chemical characteristics for producing crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming standards.
- Unique Farmland: Land of lesser quality soils used for the production of specific high economic value crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. It is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Examples of crops include oranges, olives, avocados, rice, grapes and cut flowers.
- Farmland of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors following recommendations by a local advisory committee.

Forestry Resources

The Planning Area does not contain forestry resources. Forestry resources include forestland, timberland, and timberland production zones. Definitions used for forest land and timberland are those found in the California Public Resources Code (PRC) Sections 12220(g) and 4789.2(g) and California Government Code (CGC) Section 51104(g). These codes define forestland, timberland, and timberland production zones as follows:

- Forest Land: Forest land is land that can support, under natural conditions, 10 percent native tree cover of any species, including hardwoods, and that allows for the preservation or management of forest-related resources such as timber, aesthetic value, fish and wildlife, biodiversity, water quality, recreational facilities, and other public benefits (PRC Section 12220(g)).
- Timberland: Timberland means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species are determined by the board on a district basis (PRC Section 4526(g)).

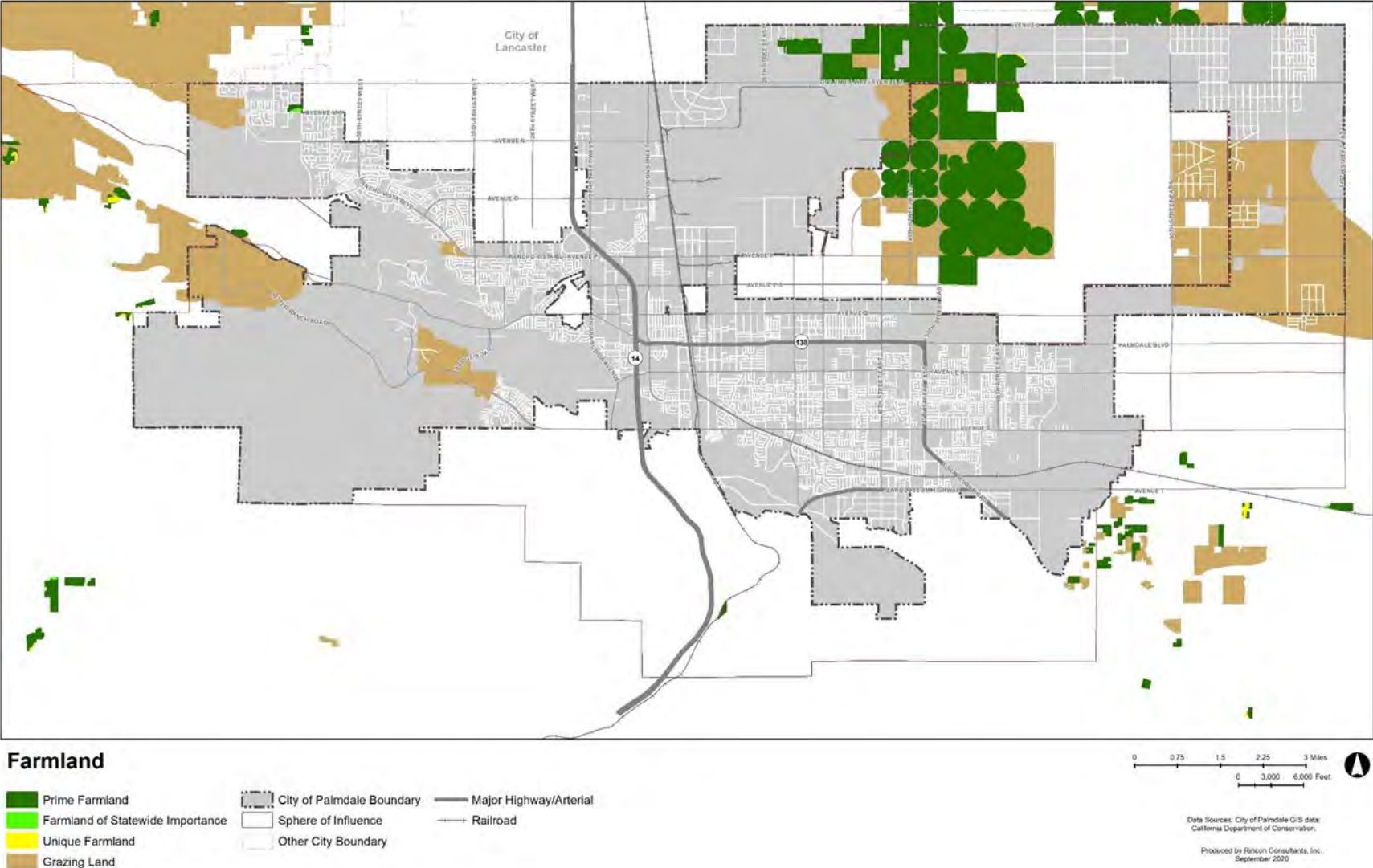
- Timberland Production Zones: Timberland production zones means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h) (CGC Section 51104).

4.2.2 Environmental Setting

Most of the area within Palmdale city limits is classified as Urban and Built-Up land according to FMMP maps prepared by the DOC. However, parts of the Planning Area (mostly outside city limits) contain approximately 4,898 acres of agricultural land, accounting for approximately 4.6 percent of the Planning Area (Raimi & Associates 2020c). Most of this farmland is designated as Prime Farmland, with a few small parcels in the Planning Area designated as Farmland of Statewide Importance or Unique Farmland. Farmland within the Planning Area is shown in Figure 4.2-1. Grazing lands, while not within the category of “Farmland,” surround much of the Prime Farmland and occur on their own in various parts of the Planning Area including in hillside areas in the western and southwestern parts of the Planning Area and in the far eastern part of the City and Planning Area near the Alpine Butte Wildlife Sanctuary.

As shown on Figure 4.2-1, the area that contains most of the Planning Area’s agricultural land is in the vicinity of Palmdale Regional Airport/Plant 42. This area is currently designated as Industrial (IND) or as Airport and Related Uses in the City’s existing General Plan and is zoned as Planned Industrial in the City’s municipal code (City of Palmdale 2016; 2018). The proposed Plan would designate this area as Aerospace Industrial and Industrial. There are also a few small areas of agricultural land in the Planning Area outside the vicinity of the airport, but these amount to much less agricultural land than the area near the airport. For example, a small parcel containing Prime Farmland and Farmland of Statewide Importance, located inside City limits in the northwest portion of the Planning Area, is designated and zoned as Single Family Residential (City of Palmdale 2016; 2018). The proposed Plan would designate this area as Single Family Residential 2. There are also a few parcels of agricultural and grazing land outside City limits but inside the City’s Sphere of Influence (SOI) in the southeast part of the Planning Area, and one parcel of agricultural land outside City limits but inside the SOI in the southern central part of the Planning Area bordering the railroad tracks east of SR-14. These parcels do not have a land use designation on the City’s current General Plan Land Use Map (Figure 4.11-1). Under the proposed Plan, these parcels would be designated as Low Density Residential, as shown on Figure 2-3. None of the agricultural land in the Planning Area is currently enrolled in a Williamson Act Contract (DOC 2016b). There are no timber resources or timberland production zones in the Planning Area (California Department of Fish and Wildlife 2019).

Figure 4.2-1 Farmland in the Planning Area



4.2.3 Regulatory Setting

Various policies and regulations are enforced at the federal, State, and local level to protect forestry, timberland, and agriculture resources.

a. Federal

Farmland Protection Policy Act (FPPA)

The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that to the extent possible, federal programs are administered to be compatible with state and local units of government and private programs and policies to protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.

Federal Forest Legacy Program

The Federal Forest Legacy Program was a part of the 1990 Farm Bill. Its purpose is to identify and protect environmentally important forestlands that are threatened by present or future conversion to non-forest uses. The program provides conservation easements and gives priority to lands that can be effectively protected and managed, as well as lands that have significant scenic, recreational, timber, riparian, fish and wildlife, threatened and endangered species, and other cultural or environmental values. Properties that are “working forests,” whereby the forestland is managed for the production of forest products, are also eligible under this program. Involvement in this program by private landowners is voluntary.

b. State Regulations

Farmland Mapping and Monitoring Program (FMMP)

The DOC, under the Division of Land Resource Protection, developed the FMMP to monitor the conversion of the state’s farmland to and from agricultural use. Data is collected at the county level to produce a series of maps identifying eight land use classifications using a minimum mapping unit of 10 acres. The program also produces a biannual report on the amount of land converted from agricultural to non-agricultural use. The program maintains an inventory of state agricultural land and updates the “Important Farmland Series Maps” every two years (DOC 2016a).

Right to Farm Act 1981

The Right to Farm Act (Civil Code Section 3482.5) is designed to protect commercial agricultural operations from nuisance complaints that may arise when an agricultural operation is conducting business in a “manner consistent with proper and accepted customs.” The code specifies that established operations that have been in business for 3 or more years that were not nuisances at the time they began shall not be considered a nuisance as a result of new land use.

Williamson Act

The California Land Conservation Act of 1965, Sections 51200 et seq. of the California Government Code, commonly referred to as the “Williamson Act”, enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. Landowners enter into contracts

with participating cities and counties and agree to restrict their land to agriculture or open space use for a minimum of 10 years. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market (speculative) value.

Forest Practice Act of 1973

The California Department of Forestry and Fire Protection (CAL FIRE) enforces the laws that regulate logging on privately owned lands in California under the Forest Practice Act. Under the Forest Practice Act, timber operations may only be conducted pursuant to an approved Timber Harvesting Plan (THP), an environmental review document prepared by a Registered Professional Forester and submitted by landowners to CAL FIRE. The THP outlines the timber they want to harvest, how it will be harvested, and the steps that will be taken to prevent damage to the environment. Because a THP is the functional equivalent of an EIR for tree removal activities, the approval of a THP could depend on the inclusion of required mitigation.

A landowner that proposes to carry out a project that will result in timberland being converted to a non-timber growing use must apply for either a Timberland Conservation Program (TCP) or a notice of exemption. Grounds for exemption include conversions of less than three acres, conversions to construct or maintain a right-of-way by a public agency or a public or private utility, and development of subdivisions on forest land where approved by local government. When a TCP is issued, restocking of the timber resources is not required, as the land is converted to a non-timber growing use.

c. Local Regulations

PMC Chapter 17.30) establishes Zone A-1, Light Agriculture, and zones intended to maintain the rural character of portions of the Planning Area. Typical uses in this zone include truck farming, field and tree crops, and low density residential uses.

4.2.4 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to agriculture and forestry resources would be potentially significant if implementation of the Plan would:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use
2. Conflict with existing zoning for agricultural use or a Williamson Act contract
3. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])
4. Result in the loss of forest land or conversion of forest land to non-forest use
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
Threshold 2:	Would the Plan conflict with existing zoning for agricultural use or a Williamson Act contract?
Threshold 5:	Would the Plan involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

Impact AG-1 THE PLAN WOULD NOT CONVERT FARMLAND TO NON-AGRICULTURAL USE, CONFLICT WITH EXISTING ZONING OR A WILLIAMSON ACT CONTRACT, OR INVOLVE OTHER CHANGES THAT COULD RESULT IN THE CONVERSION OF FARMLAND TO NON-AGRICULTURAL USE. THERE WOULD BE NO IMPACT.

The City's current General Plan land use map (shown in Figure 4.11-1) designates Farmland within the Planning Area (shown in Figure 4.2-1) as Industrial (IND) or as Airport and Related Uses (AR) (City of Palmdale 2016). As shown in Figure 4.11-2, this area is zoned as Planned Industrial (M-4) or Light Agriculture (A-1) under the City's Municipal Code (City of Palmdale 2018). A small parcel containing Prime Farmland and Farmland of Statewide Importance, located in the northwest portion of the Planning Area, is designated and zoned as Single Family Residential (City of Palmdale 2016; 2018). The agricultural land to the south and southeast of the City limits but within the Planning Area do not currently have a City of Palmdale land use designation; however, Los Angeles County designates these lands as Agricultural Resource Areas (County of Los Angeles 2022).

As shown in the proposed Plan land use map in Figure 2-3, the Plan would not involve land use designation changes to agricultural lands, and the Farmland within the Planning Area would continue to be designated as Industrial or Aerospace Industrial in the vicinity of the Palmdale Regional Airport. The Prime Farmland currently designated and zoned as Single Family Residential would remain designated as Single Family Residential under the proposed Plan land use map. The parcels of Farmland to the south and southeast of the City within the Planning Area would be designated as Low Density Residential under the Plan. Additionally, the City has adopted and is developing several specific plans, none of which are proposed to occur in areas that contain Prime Farmland. Therefore, the Plan would not conflict with existing zoning for agricultural use. There would be no impact. Furthermore, as shown on maps prepared by the DOC (DOC 2016b), there are no parcels in the Planning Area that are currently enrolled in a Williamson Act contract. Therefore, the Plan would not conflict with Williamson Act contracts and there would be no impact.

The Plan would not change the land use designation of other property in the Planning Area shown on Figure 4.2-1 from an agricultural to a non-agricultural designation. Furthermore, the Plan does not specifically call for non-agricultural development in any of these areas. Future development carried out under the Plan would be subject to the existing Federal and State laws and regulations discussed in Section 4.2.3, *Regulatory Framework*, which aim to conserve and protect farmland; as well as proposed Plan policies that would discourage development in agricultural areas and the conversion of Farmland to non-agricultural use. Therefore, the Plan would not result in or involve other changes in the environment that would result in the conversion of Farmland to non-agricultural use. There would be no impact.

As shown in the proposed Plan land use map in Figure 2-3 in Chapter 2, *Project Description*, of this EIR, the Plan focuses on infill and urban development. The Plan would not involve specific development on Farmland. The Plan also contains Policy LUD-21.4, which is to strive to create an undeveloped or rural greenbelt around the City comprised of natural areas, parks and open space, and agricultural/utility lands.

For all the reasons discussed above, the Plan would not convert Farmland to non-agricultural use, conflict with existing zoning or a Williamson Act Contract, or involve other changes that could result in the conversion of Farmland to non-agricultural use. There would be no impact.

Mitigation Measures

No mitigation measures are required.

<p>Threshold 3: Would the Plan conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?</p> <p>Threshold 4: Would the Plan result in the loss of forest land or conversion of forest land to non-forest use?</p>

Impact AG-2 THERE IS NO LAND IN THE PLANNING AREA DESIGNATED OR ZONED AS FOREST LAND, TIMBERLAND, OR TIMBERLAND PRODUCTION. THEREFORE, THE PLAN WOULD NOT CONFLICT WITH ZONING FOR FOREST LAND, TIMBERLAND, OR TIMBERLAND PRODUCTION, OR RESULT IN THE CONVERSION OF FOREST LAND TO NON-FOREST USE. THERE WOULD BE NO IMPACT.

According to the California Department of Fish and Wildlife (CDFW), the Planning Area does not include areas of forest land, timberland, or timberland zoned Timberland Production (CDFW 2019). As shown in Figure 4.11-1 and Figure 2-3, no lands within the Planning Area are currently designated, or would be designated under the Plan, as forest land or timberland in the City's General Plan (City of Palmdale 2016). As shown in Figure 4.11-2, no lands within the City are zoned for timberland production (City of Palmdale 2018). Therefore, the Plan would not conflict with existing zoning or cause rezoning of forest land, timberland, or areas zoned for timberland production. The Plan would not result in or involve other changes in the environment that would result in the loss of forest land or conversion of forest land to non-forest use. There would be no impact.

Mitigation Measures

No mitigation measures are required.

4.2.5 Cumulative Impacts

As described in the above analysis, the Planning Area does not contain agricultural land or forest land that would be impacted by the Plan, and implementation of the Plan would therefore result in no impact to these resources. Areas surrounding the Planning Area have a variety of land uses, from neighboring urbanized areas such as the City of Lancaster, to open desert areas, to hillsides and mountains. There is some Farmland to the northeast of the Planning Area in the eastern portion of the City of Lancaster and north of that in unincorporated Los Angeles County. Cumulative development in the region has the potential to result in the conversion of nearby Farmland or forest

land to urban uses, but individual projects in these areas would be assessed for potential impacts to agriculture and forestry resources and would be required to implement mitigation in accordance with any applicable state and local policies. Additionally, because the Plan would not directly or indirectly contribute to farmland or forestland conversion, it would not contribute to cumulative impacts to these resources. Implementation of the Plan would not result in a considerable contribution to a significant cumulative impact to agriculture and forestry resources.

4.3 Air Quality

This section describes existing air quality conditions in Palmdale and the Plan's potential impacts on air quality. Information for this section is based in part on data from the Antelope Valley Air Quality Management District (AVAQMD), the Mojave Desert Air Quality Management District, and the California Air Resources Board (CARB).

4.3.1 Environmental Setting

a. Climate

Palmdale is located in the Mojave Desert Air Basin (MDAB), which is under the jurisdiction of the AVAQMD. The AVAQMD is the local air quality management agency responsible for monitoring the local air pollutant levels to ensure that state and federal air quality standards are met. The MDAB is characterized by mountain ranges and valleys, with frequent prevailing winds originating from coastal and central regions.

Palmdale is located in the northeast Los Angeles County portion of the district. Temperatures in the area average lows and highs of 71 degrees Fahrenheit (°F) and 95°F, respectively, in the summer months and 36°F and 58°F, respectively in the winter months. Average annual precipitation is eight inches. This pattern is broken only by occasional winter storms and infrequent Santa Ana winds from the mountains west of the district. Usually warm, dry, and dusty, Santa Ana winds are particularly strong in passes and at the mouths of canyons. Sustained winds of 60 miles per hour with higher gusts are common for these conditions. On average, Santa Ana wind conditions occur five to 10 times per year, with each event lasting up to a few days. Palmdale is sheltered from import of inter-basin pollution by mountain barriers extending on the north and south. Air quality is generally good; however, the city receives windborne air pollutants from the greater Los Angeles area via canyons, such as the Newhall Pass and Soledad Canyon, which lie to the south of the city.

b. Air Pollutants

Air pollutant emissions in the MDAB are generated by stationary, mobile, and natural sources. The characteristics of these sources are discussed below. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

The definitions of the six primary criteria pollutants, including ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter equal to or less than 10 and 2.5 microns in diameter (PM₁₀ and PM_{2.5}, respectively), and lead (Pb) are provided below. Ozone is considered a secondary criteria pollutant because it is created by atmospheric chemical and photochemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_x).

- **Ozone.** Ozone is a highly oxidative unstable gas produced by a photochemical reaction (triggered by sunlight) between NO_x and ROG/VOC. VOC is composed of non-methane hydrocarbons (with specific exclusions), and NO_x is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and NO_2 . NO_x is formed during the combustion of fuels, while VOC is formed during the combustion and evaporation of organic solvents. As a highly reactive molecule, ozone readily combines with many different atmosphere components. Consequently, high ozone levels tend to exist only while high VOC and NO_x levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant. In addition, because ozone requires sunlight to form, it mainly occurs in concentrations considered serious between April and October. Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors (United States Environmental Protection Agency [USEPA] 2021). Depending on the level of exposure, ozone can cause coughing and a sore or scratchy throat; make it more difficult to breathe deeply and vigorously and cause pain when taking a deep breath; inflame and damage the airways; make the lungs more susceptible to infection; and aggravate lung diseases such as asthma, emphysema, and chronic bronchitis.
- **Carbon Monoxide.** CO is a localized pollutant found in high concentrations only near its source. The primary source of CO, a colorless, odorless, poisonous gas, is automobile traffic's incomplete combustion of petroleum fuels. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. Other sources of CO include the incomplete combustion of petroleum fuels at power plants and fuel combustion from wood stoves and fireplaces during the winter. When CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability to get oxygenated blood to their hearts in situations where they need more oxygen than usual. As a result, they are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain, also known as angina (USEPA 2021).
- **Nitrogen Dioxide.** NO_2 is a by-product of fuel combustion. The primary sources are motor vehicles, industrial boilers, and furnaces. The principal form of NO_x produced by combustion is nitric oxide, but nitric oxide reacts rapidly to form NO_2 , creating the mixture of nitric oxide and NO_2 , commonly called NO_x . NO_2 is a reactive, oxidizing gas and an acute irritant capable of damaging cell linings in the respiratory tract. Breathing air with a high concentration of NO_2 can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases leading to respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma and children and the elderly are generally at greater risk for the health effects of NO_2 (USEPA 2021). NO_2 absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of ozone/smog and acid rain.
- **Suspended Particulates.** Suspended atmospheric PM_{10} and $\text{PM}_{2.5}$ are comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. Both PM_{10} and $\text{PM}_{2.5}$ are emitted into the atmosphere as by-products of fuel combustion and wind erosion of soil and unpaved roads. The atmosphere, through chemical reactions, can form particulate matter. The characteristics, sources, and potential health effects of PM_{10} and $\text{PM}_{2.5}$ can be very different. PM_{10} is generally associated with dust mobilized by wind and vehicles. In contrast, $\text{PM}_{2.5}$ is

generally associated with combustion processes and formation in the atmosphere as a secondary pollutant through chemical reactions. PM₁₀ can cause increased respiratory disease, lung damage, cancer, premature death, reduced visibility, and surface soiling. For PM_{2.5}, short-term exposures (up to 24-hours duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases (CARB 2022a).

- **Sulfur Dioxide (SO₂).** SO₂ is included in a group of highly reactive gases known as “oxides of sulfur.” The largest sources of SO₂ emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO₂ emissions include industrial processes such as extracting metal from ore and burning fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Short-term exposures to SO₂ can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO₂ (USEPA 2021).
- **Lead (Pb).** Pb is a metal found naturally in the environment, as well as in manufacturing products. The major sources of lead emissions historically have been mobile and industrial. However, due to the USEPA’s regulatory efforts to remove lead from gasoline, atmospheric Pb concentrations have declined substantially over the past several decades. The most dramatic reductions in Pb emissions occurred before 1990 due to the removal of Pb from gasoline sold for most highway vehicles. Pb emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least partly due to national emissions standards for hazardous air pollutants (USEPA 2013). As a result of phasing out leaded gasoline, metal processing is currently the primary source of Pb emissions. The highest Pb level in the air is generally found near Pb smelters. Other stationary sources include waste incinerators, utilities, and Pb-acid battery manufacturers. Pb can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and cardiovascular system depending on exposure. Pb exposure also affects the oxygen-carrying capacity of the blood. The Pb effects most likely encountered in current populations are neurological in children. Infants and young children are susceptible to Pb exposures, contributing to behavioral problems, learning deficits, and lowered IQ (USEPA 2021).
- **Toxic Air Contaminants.** In addition to the criteria pollutants, toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as diesel particulate matter (DPM). More than 90 percent of DPM is less than one micron in diameter (about 1/70th the diameter of a human hair) and thus is a subset of PM_{2.5}. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2022a). TACs are different than criteria pollutants because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health. People exposed to toxic air pollutants at sufficient concentrations and durations may have an increased chance

of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems (USEPA 2020).

c. Current Ambient Air Quality

The AVAQMD monitors air pollutant levels to assure that air quality standards are met, and, if they are not met, develops strategies to meet the standards. Depending on if the standards are met or exceeded, the air district is classified as being in “attainment” or in “nonattainment.” Current attainment status is shown in Table 4.3-2. The AVAQMD is in nonattainment for both the federal and state standards for ozone and PM_{2.5}, as well as the state standard for PM₁₀. In 2020, the AVAQMD did not exceed the standards for CO, NO₂, or SO₂. Nonattainment status in the MDAB is a result of several factors, primarily the naturally adverse meteorological conditions that limit the dispersion and diffusion of pollutants (surface and subsidence inversions), the limited capacity of the local airshed to eliminate pollutants from the air, and the number, type, and density of emission sources in the MDAB.

To monitor the various concentrations of air pollutants throughout the MDAB, the AVAQMD currently operates six monitoring stations located at different sites throughout the MDAB. Ambient air pollutant concentrations in Palmdale are monitored in the City of Lancaster. Table 4.3-1 provides a summary of ambient air quality measured from 2018 to 2020. As of 2020, ambient ozone concentrations in the AVAQMD regularly exceeded both national and state standards, while standards for the other criteria pollutants have not been exceeded during this period. Neither CO or SO₂ are monitored in the Palmdale area and therefore are not reported.

Table 4.3-1 Summary of Ambient Air Quality in the AVAQMD

Pollutant	Air Quality Standards	Year		
		2018	2019	2020
Ozone				
Maximum 1-hour concentration in ppm		0.125	0.096	0.099
Number of days exceeding State 1-hour standard	>0.09 ppm	5	1	4
Maximum 8-hour concentration in ppm		0.105	0.082	0.084
Number of days exceeding State 8-hour standard	>0.070 ppm	49	14	8
Nitrogen Dioxide (NO₂)				
Maximum 1-hour concentration in ppm		0.048	0.049	0.052
Number of days exceeding State 1-hour standard	>0.18 ppm	0	0	0
Particulate Matter <10 microns (PM₁₀)				
Maximum 24-hour concentration in µg/m ³		89.3	26.1	192.3
Number of days exceeding State 24-hour standard	> 50 µg/m ³	N/A	15	28.8
Number of days exceeding national 24-hour standard	> 150 µg/m ³	0	2	1
Particulate Matter <2.5 microns (PM_{2.5})				
Maximum 24-hour concentration in µg/m ³		40.4	13.6	74.7
Number of days exceeding national 24-hour standard	>0.25 µg/m ³	1	0	9

Source: CARB2022b.

d. Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, including children under 14, persons aged over 65, persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases. Most sensitive receptor locations are therefore schools and hospitals. The Palmdale Regional Medical Center is located south of West Palmdale Boulevard and east of Tierra Subida Avenue and several urgent clinics are located throughout the City. School locations are identified in Section 4.15, *Public Services*.

4.3.2 Regulatory Setting

The federal and state governments have been empowered by the federal and state clean air acts (CAA) to regulate the emission of airborne pollutants. The USEPA is the federal agency designated to administer air quality regulation, while CARB is the state equivalent. Local control in air quality management is provided by CARB through multi-county and county-level Air Pollution Control Districts (APCD). CARB establishes statewide air quality standards and is responsible for the control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. Palmdale is under the jurisdiction of the AVAQMD.

a. Federal Regulations

The USEPA is responsible for enforcing the federal CAA. The USEPA is also responsible for establishing National Ambient Air Quality Standards (NAAQS). The NAAQS are required under the 1977 CAA and subsequent amendments. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by the CARB.

b. State Regulations

In California, CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for meeting the State requirements of the federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the state to endeavor to achieve and maintain the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB established passenger vehicle fuel specifications, which became effective in March 1996. CARB oversees the functions of local APCDs, which in turn administer air quality activities at the regional and county level. CARB has established 15 air basins statewide, including the MDAB.

The USEPA has set primary NAAQS for ozone, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and Pb. Primary standards are those levels of air quality deemed necessary, with an adequate margin of safety, to protect public health. In addition, California has established health-based CAAQS for these and other

pollutants, some of which are more stringent than the federal standards. Table 4.3-2 lists the current federal and state standards for regulated pollutants.

Table 4.3-2 Current Federal and State Ambient Air Quality Standards & Attainment Status

Pollutant	Federal Standard	Attainment Status	California Standard	Attainment Status
Ozone (O ₃)	0.075 ppm (8-hr avg)	Non Attainment	0.07 ppm (8-hr avg) 0.09 ppm (1-hr avg)	Non Attainment
Carbon Monoxide (CO)	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	Attainment/ Unclassified	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)	Attainment
Nitrogen Dioxide (NO ₂)	100 ppb (1-hr avg) 0.053 ppm (annual avg)	Attainment/ Unclassified	0.18 ppm (1-hr avg) 0.03 ppm (annual avg)	Attainment
Sulfur Dioxide (SO ₂)	0.03 ppm (annual avg) 0.14 ppm (24-hr avg) 75 ppb (1-hr avg)	Attainment/ Unclassified	0.25 ppm (1-hr avg) 0.04 ppm (24-hr avg)	Attainment
Lead (Pb)	1.5 µg/m ³ (3-month avg)	Attainment/ Unclassified	1.5 µg/m ³ (30-day avg)	Attainment
Particulate Matter (PM ₁₀)	150 µg/m ³ (24-hr avg)	Attainment/ Unclassified	20 µg/m ³ (annual avg) 50 µg/m ³ (24-hr avg)	Non Attainment
Fine Particulate Matter (PM _{2.5})	15 µg/m ³ (annual avg) 35 µg/m ³ (24-hr avg)	Attainment/ Unclassified	12 µg/m ³ (annual avg)	Unclassified

ppb = parts per billion; ppm = parts per million; µg/m³ = micrograms per cubic meter
 Source: CARB 2016; AVAQMD 2017a

State Implementation Plan

The State Implementation Plan (SIP) is a collection of documents that set forth the state’s strategies for achieving the NAAQS. In California, the SIP is a compilation of new and previously submitted plans, programs (such as monitoring, modeling, and permitting), district rules, state regulations, and federal controls. The CARB is the lead agency for all purposes related to the SIP under state law. Local air districts and other agencies, such as the Department of Pesticide Regulation and the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The items included in the California SIP are listed in the Code of Federal Regulations (CFR) at 40 CFR 52.220.

As the regional air quality management district, the AVAQMD is responsible for preparing and implementing the portion of the SIP applicable to the portion of the MDAB within its jurisdiction. The air pollution control district for each county adopts rules, regulations, and programs to attain federal and state air quality standards and appropriates money (including permit fees) to achieve these objectives.

California Code of Regulations

The California Code of Regulations (CCR), is the official compilation and publication of the regulations adopted, amended or repealed by state agencies pursuant to the Administrative Procedure Act (APA) (State of California, 2022). The following California Code of Regulations would be applicable to the project:

- **Engine Idling.** In accordance with Section 2485 of Title 13 of the California Code of Regulations, the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds) during construction shall be limited to five minutes at any location.
- **Emission Standards.** In accordance with Section 93115 of Title 17 of the California Code of Regulations, operation of any stationary, diesel-fueled, compression-ignition engines shall meet specified fuel and fuel additive requirements and emission standards.

California Building Standards Code

California Code of Regulations Title 24 is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2019 Title 24 standards. The California Building Standards Code's energy-efficiency and green building standards are outlined below.

PART 6 – BUILDING ENERGY EFFICIENCY STANDARDS/ENERGY CODE

California Code of Regulations Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission. The 2019 Title 24 standards are the applicable building energy efficiency standards for the Plan because they became effective on January 1, 2020.

The voluntary standards require:

- **Tier I:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste with third-party verification, 10 percent recycled content for building materials, 20 percent permeable paving, and 20 percent cement reduction.
- **Tier II:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste with third-party verification, 15 percent recycled content for building materials, 30 percent permeable paving, and 25 percent cement reduction.

c. Local Regulations

Antelope Valley Air Quality Management District

As the local air quality management agency, the AVAQMD is required to monitor air pollutant levels to ensure that State and federal air quality standards are met and, if they are not met, to develop

strategies to meet the standards. In areas designated as non-attainment for one or more air pollutants, a cumulative air quality impact exists for those air pollutants, and the human health impacts described under *Air Pollutants* discussed above are already occurring in that area as part of the environmental baseline condition.

Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. The AVAQMD adopted the Federal 75 parts per billion (ppb) Ozone Attainment Plan for the Western Mojave Desert Nonattainment Area in March 2017 to reach attainment for federal and state standards. The Ozone Attainment Plan incorporates new scientific data and notable regulatory actions that have occurred since adoption of the 2010 Ozone Attainment Plan including the approval of the new federal 8-hour ozone standard of 0.070 parts per million (ppm) that was finalized in 2015. The Final 2017 Ozone Attainment Plan addresses several state and federal planning requirements and incorporates new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and meteorological air quality models. The Southern California Association of Governments' (SCAG) projections for socio-economic data (e.g., population, housing, employment by industry) and transportation activities from the 2016 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) are integrated into the 2017 Ozone Attainment Plan.

Project-level significance thresholds established by local air districts set the level at which a project would cause or have a cumulatively considerable contribution to an exceedance of a federal or state ambient air quality standard. Therefore, if a project's air pollutant emissions exceed the significance thresholds, the project could cause or contribute to the human health impacts.

To minimize potential impacts from project emissions, the AVAQMD implements rules and regulations for emissions that may be generated by various uses and activities. The rules and regulations detail pollution-reduction measures that must be implemented during construction and operation of projects. Rules and regulations relevant to the Plan include the following:

- **Rule 403 (Fugitive Dust).** The purpose of this rule is to reduce the amount of Particulate Matter entrained in the ambient air as a result of anthropogenic (man-made) Fugitive Dust sources by requiring actions to prevent, reduce or mitigate Fugitive Dust emissions. The new construction would be required to comply with all provisions of Rule 403, including, but not limited to, the following measures:
 - Pre-activity:
 - Pre-water the site sufficiently to limit Visible Dust Emissions (VDE) to 20 percent opacity; and,
 - Phase work to reduce the amount of Disturbed Surface Area at any one time.
 - During Activity:
 - Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20 percent opacity;
 - Construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity. If utilizing wind barriers, control measure (a) above shall also be implemented; or,
 - Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20 percent opacity and meet the requirements of section (C)(9).

- Temporary Stabilization during Periods of Inactivity:
 - Restrict vehicular access to the area; and,
 - Apply water or chemical/organic stabilizers/suppressants, sufficient to limit VDE to 20 percent opacity, or to comply with the conditions of a Stabilized Surface. If an area having one-half acres or more of Disturbed Surface Area remains unused for seven or more days, the area must comply with the conditions for a Stabilized Surface area.
- **Rule 402 (Nuisance).** A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- **Rule 1113 (Architectural Coatings).** This rule limits the content of VOCs in architectural coatings that are supplied, sold, offered for sale, and manufactured within the Air District. Effective January 6, 2014, all building envelope coatings were limited to a VOC content of 50 grams per liter for flat coatings and 150 g/l for nonflat-high gloss coatings.

2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, the economy, community development and the environment. On September 3, 2020, SCAG's Regional Council formally adopted the 2020-2045 RTP/SCS (titled Connect SoCal). The 2020-2045 RTP/SCS builds upon the progress made through implementation of the 2016-2040 RTP/SCS and includes 10 goals focused on promoting economic prosperity, improving mobility, protecting the environment, and supporting healthy/complete communities. The SCS implementation strategies include focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, and supporting implementation of sustainability policies. The SCS establishes a land use vision of center-focused placemaking, concentrating growth in and near Priority Growth Areas, transferring of development rights, urban greening, creating greenbelts and community separators, and implementing regional advance mitigation (SCAG 2020).

Palmdale General Plan

The Plan includes numerous goals and policies in the Air Quality Element through which air quality would be improved and regional impacts reduced, as follows:

- **Goal AQ-1: Minimize local air pollution caused by motor vehicles.**
 - **Policy AQ 1-1: Reduced work-related trips.** Reduce the number and length of work-related trips through such means as providing a balance of jobs and housing in the community, promoting alternate work schedules, telecommuting, teleconferencing, company-sponsored ride-share and alternative fuel vehicle programs, use of commuter trains and other alternative modes of transportation to the workplace, creation of additional park and ride facilities, and improving the fiber optic network and connectivity.
 - **Policy AQ 1-2: Reduced Non-Work Trips.** Reduce motor vehicle non-work trips through such means as location of residences in proximity to shopping and recreation/entertainment destinations, transit system improvements, and promoting merchant transportation incentives, and distance learning.

- **Policy AQ 1-3: Improve Traffic Flow.** Reduce vehicle emissions by maintaining and improving traffic flow per the Mobility Element.
- **Policy AQ 1-4: High Occupancy Vehicle Lanes.** Coordinate with Caltrans to promote high occupancy vehicle lanes on State Route 14.
- **Policy AQ 1-5: Reduced Tailpipe Emissions.** As technology allows, reduce tailpipe emissions from City vehicles by replacing them with alternative fuel vehicles and encourage reduction of emissions from private vehicles through such means as reducing parking requirements and providing preferential parking for alternative fuel vehicles and bicycles.
- **Policy AQ 1-6: Airport Emissions Control.** To the extent practicable, reduce emissions from the future Palmdale Regional Airport by purchasing renewable energy, installing airport renewable energy systems, reducing energy consumption, monitoring the efficiency of heating, ventilation, and colling systems, and purchasing low or zero emission vehicles and ground support equipment.
- **Policy AQ 1-7: Expand Dial-A-Ride.** Expand services of the existing dial-a-ride program, resulting in reduced need for automobiles and parking by seniors and those with disabilities.
- **Policy AQ 1-8: Environmentally Review New Development.** Use the environmental review process for new development applications to assess and, as necessary, mitigate the impacts of new development related to increased vehicle miles traveled.
- **Policy AQ 1-9: Encourage transit and bike use.** Provide incentives to residents who bike or use public transportation such as free or discounted public transit or employer-provided subsidies or reimbursements for residents willing to bike or use public transit.
- **Policy AQ 1-10: Truck routes.** Restrict freight to certain routes and times by adopting rules and regulations that prohibit the use of trucks in certain areas within Palmdale.
- **Goal AQ-2: Minimize particulates less than 10 microns in size (PM₁₀) and minimizes activities that generate dust.**
 - **Policy AQ 2-1: Vegetative Stabilization.** Reduce roadway dust by requiring paving or vegetative stabilization of unpaved roads and parking lots.
 - **Policy AQ 2-2: Construction Site Requirements.** Require measures at construction sites to prevent deposition of soil onto public rights-of-way.
 - **Policy AQ 2-3: Natural Contours.** Encourage developers to maintain natural contours to the greatest degree possible, to eliminate the need for extensive land clearing, blasting, ground excavation, grading and cut and fill operations.
 - **Policy AQ 2-4: Erosion and Dust Control Measures.** Require erosion and dust control measures for new construction, including covering soil with straw mats or use of chemical soil and dust binders during site grading, followed by hydroseeding and watering disturbed construction areas as soon as possible after grading to prevent fugitive dust.
- **Goal AQ-3: Reduction and/or elimination of unnecessary sources of air pollution.**
 - **Policy AQ 3-1: AVAQMD and Proven Technologies.** Promote the AVAQMD program to encourage local entities to install public electric vehicle charging stations to offer incentivize residents to purchase electric vehicles (e.g., vehicle buy-back program), and the Carl Moyer program, which aims to improve the local air quality by funding local, cost-effective projects to upgrade heavy-duty equipment (Gross Vehicle Weight Rating greater than 14,000 lbs.) using proven technologies.

- **Policy AQ 3-2: Eliminate Emissions.** Promote the AVAQMD’s efforts to eliminate emissions from such sources as excessive car dealership cold starts, excessive curb idling, emissions from advertising vehicles, and emissions from leaf blowers, among others, through assisting with implementation and enforcement of AVAQMD programs and rules.
- **Policy AQ 3-3: Complete Streets.** Design a more effective street system by emphasizing complete streets which accommodate all modes of transportation.
- **Policy AQ 3-4: Reduce Reactive Organic Gas.** Reduce reactive organic gas (ROG) and particulate emissions from building materials and construction methods, by promoting the use of nonsolvent-based, high-solid, or water-based coatings, and requiring compliance with all pertinent AVAQMD rules.
- **Policy AQ 3-5: Minimize Emissions.** Minimize emissions of toxic air contaminants that contribute to climate change and ozone depletion, and that create potential health risks for residents, workers, and visitors.
- **Policy AQ 3-6: Community Awareness.** Promote community awareness of the effects of climate change and ozone depleting gases, as well as methods to minimize the creation of those gases, by preparing and distributing educational materials, and cooperating with AVAQMD in establishing regional programs.
- **Policy AQ 3-7: Environmentally Review New Development Applications.** Through the environmental review process for new development applications, ensure that emissions of toxic air contaminants are minimized and that any significant health effects associated with such contaminants are appropriately mitigated.
- **Policy AQ 3-8: Green Technology Companies.** Encourage non-polluting industry and clean green technology companies to locate in the city.
- **Goal AQ-4: Reduce air pollution caused by energy consumption.**
 - **Policy AQ 4-1: EPIC Participation.** Encourage residents and business owners to participate in Energy for Palmdale’s Independent Choice (EPIC).
 - **Policy AQ 4-2: Energy Conservation.** Encourage energy conservation from all sectors of the community by promoting and/or requiring the use of energy efficient appliances, processes, and equipment, and promoting energy audits and retrofits of existing structures.
 - **Policy AQ 4-3: Recycling.** Require local government, Palmdale citizens, and local businesses and industries to recycle, as mandated by state law, and to otherwise recycle to the maximum extent possible in accordance with the requirements of the Palmdale Municipal Code.
 - **Policy AQ 4-4: Solar Energy.** Require new developments to minimize obstruction of direct sunlight for solar energy systems on adjacent properties.

4.3.3 Impact Analysis

a. Significance Thresholds

The analysis of the Plan’s air quality impacts follows the guidance and methodologies recommended in the AVAQMD *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines* (2016), as well as Appendix G of the CEQA Guidelines.

According to CEQA Guidelines Appendix G, impacts related to air quality would be potentially significant if implementation of the Plan would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the Plan region is in nonattainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations; and/or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The AVAQMD has adopted numeric significance thresholds for individual development projects. However, these thresholds are project specific and while not generally appropriate for plan level analysis, are used to determine significance for the analysis as the AVAQMD has not adopted plan level thresholds.

AVAQMD guidance states that a project would conform to the applicable attainment or maintenance plans if the project is consistent with the existing land use plan (AVAQMD 2016).¹ Zoning changes, specific plans, general plan amendments and similar land use plan changes which do not increase dwelling unit density, vehicle trips, and vehicle miles traveled are also deemed to be consistent with the applicable attainment or maintenance plans.

The AVAQMD recommends quantitative regional significance thresholds for temporary construction activities and long-term project operation in the MDAB, shown in Table 4.3-3.

Table 4.3-3 AVAQMD Regional Project Level Significance Thresholds

	Annual Thresholds (tons/year)	Daily Thresholds (lbs/day)
CO	100	548
NO _x	25	137
VOC	25	137
SO _x	25	137
PM ₁₀	15	82
PM _{2.5}	12	65

NO_x = Nitrogen Oxides; VOC = Volatile Organic Compounds; PM₁₀ = Particulate Matter with a diameter no more than 10 microns; PM_{2.5} = Particulate Matter with a diameter no more than 2.5 microns; SO_x = Sulfur Oxide; CO = Carbon Monoxide

Source: AVAQMD 2016

b. Methodology

The California Emissions Estimator Model (CalEEMod), version 2020.4.0. was used to model emissions from buildout of the Plan. CalEEMod uses default and project-specific information, including the project’s land uses, square footages for different uses (e.g., multi-family residence, parking lot), and location, to estimate a project’s construction and operational emissions. Detailed assumptions and modeling output is included in Appendix B.

Construction Emissions

Development carried out under the Plan is anticipated to be constructed over approximately 25 years. It is anticipated that several individual projects could be constructed at any given time. To

¹ For this analysis the existing land use plan would be the 1993 General Plan.

provide an estimate of construction emissions, the analysis conservatively assumes that up to eight projects and 1/20th of the total land use would be constructed per year.²

Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. Based on the eight sample projects and development of 1/20th of the total land use growth, the analysis models one single family residential project of up to 56 units, one multi-family residential project up to 1,045 units, one retail/restaurant development of up to 68,623 square feet, one hotel of up to 58 rooms, one office development project of up to 171,275 square feet, one industrial project of up to 502,343 square feet, school development of up to 51,102 square feet, and one government office project of up to 7,300 square feet.³ Construction phases would include demolition, grading, building construction, paving, and architectural coating. It is assumed that the majority of growth under the Plan would be associated with the re-development of existing sites, however as it is unknown exactly where the new development would occur or what buildings would need to be removed, thus the extent of demolition needed is unknown. Therefore, as a conservative estimate of demolition activity, demolition for each individual project modeled assumes the removal of building area the same square footage as the development to be constructed (i.e. a 1:1 replacement of building area). Construction was assumed to last one year for each “project”.

Other details such as construction equipment, worker trips, and vendor trips were based on CalEEMod defaults. Development facilitated by the Plan would comply with all applicable regulatory standards, including AVAQMD Rule 403, Rule 402, and Rule 1113. AVAQMD Rules 402 and 1113 are defaults in the CalEEMod model. Rule 402 is associated with the emission factors incorporated for construction equipment and Rule 1113 is incorporated as the standard unmitigated emission factors for VOCs associated with architectural coating. Rule 403 is incorporated into the modeling using CalEEMod’s mitigation settings through watering exposed areas twice a day and replacing ground cover in disturbed areas as soon as possible.

Operational Emissions

Operational emissions for growth within the Planning Area was modeled similarly using CalEEMod. Emissions represent buildout of the Plan in 2045 over the next 25 years. Therefore, consistent with the analysis of construction impacts, sample individual projects account for the development of one single family residential project of up to 56 units, one multi-family residential project up to 1,045 units, one retail/restaurant development of up to 68,623 square feet, one hotel of up to 58 rooms, one office development project of up to 171,275 square feet, one industrial project of up to 502,343 square feet, school development of up to 51,102 square feet, and one government office project of up to 7,300 square feet.

In CalEEMod, operational sources of criteria pollutant emissions include area, energy, and mobile sources. Emissions were based on CalEEMod defaults for each land use type with the following exceptions:

1. New residential units were assumed not to have any hearths or fireplaces based on 100% electric development.

² Emissions were estimated for sample projects for each land use type that has the potential to occur in one year. As there is growth withing 8 different land use types, there are eight sample projects used in the analysis.

³ Hotel growth was assumed at 58 rooms in one year, this annual construction estimate was multiplied by 3 to determine total emissions from the construction of up to 174 new hotel rooms throughout the city

2. Minimal to no natural gas use for new development due to consistency with the climate action plan targets.⁴
3. Title 24 compliance for the Plan was based on compliance with 2019 Title 24.
4. Modeling for water and wastewater were based on the information in Section 4.19-7, *Utilities and Service Systems*.
5. Mobile source emissions consist of emissions generated by vehicles to and from the project sites. Average daily vehicle miles traveled was derived from the Plan-specific Traffic Report prepared by Parsons (Appendix D) and used to estimate mobile source emissions.

c. Project Impacts

Threshold 1: Would the Plan conflict with or obstruct implementation of the applicable air quality plan?

Impact AQ-1 INDIVIDUAL DEVELOPMENT PROJECTS CARRIED OUT UNDER THE PLAN WOULD GENERATE CONSTRUCTION AND OPERATIONAL-RELATED EMISSIONS. SUCH EMISSIONS MAY CONFLICT WITH OR OBSTRUCT THE IMPLEMENTATION OF THE AVAQMD'S OZONE ATTAINMENT PLAN. IMPLEMENTATION OF PLAN POLICIES, COMPLIANCE WITH EXISTING REGULATIONS, AND IMPLEMENTATION OF MITIGATION WOULD REDUCE CONSTRUCTION- AND OPERATIONAL EMISSIONS, BUT NOT BELOW APPLICABLE EMISSIONS THRESHOLDS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The applicable air quality plan for the AVAQMD is the Ozone Attainment Plan. As detailed under the thresholds section above, a general plan amendment/update would be consistent if it does not increase dwelling unit density, vehicle trips, and vehicle miles traveled.

As detailed in Section 4.14, *Population and Housing*, development facilitated by the Plan is projected to result in approximately 22,000 additional housing units in the Planning Area over the next 25 years. Based on Palmdale's estimated average household size of 3.44 persons (California Department of Finance 2021), this would lead to an increase of approximately 75,756 residents. Adding the 75,756 new residents cited above to the city's 2022 population of 167,398, future residential growth facilitated by the proposed project is predicted to increase the city's total population to 243,154, which is above SCAG's 2040 population forecasts of 207,000 (SCAG 2016). Therefore, the Plan would induce substantial population growth in the area, either directly or indirectly.

The Plan calls for redevelopment and increased residential density through infill and mixed-use development. Specifically, the Air Quality Chapter of the Plan include Goals 1 through 4 as identified in the *Regulatory Section* to promote re-use, infill, and mixed-use development. By increasing the overall population density of the community, encouraging mixed land uses, and improving the city's jobs/housing balance, implementation of the Plan would largely reduce per capita automobile trips and travel distances as compared to existing conditions or lower density development more widely distributed throughout the community. Therefore, the Plan would generally reduce per capita air pollutant emissions associated with vehicle use. Consistency with the Ozone Attainment Plan is also a function of consistency with applicable Ozone Plan control measures. The Ozone Plan includes specific control measures to reduce air pollutant emissions to meet Federal and State air quality standards. One of the main methods the Plan relies on to achieve its goals is the use of

⁴ CAP targets within Chapter 14 of the Plan intend that all new development would be all-electric and energy efficient (Raimi and Associates 2022 [Sustainability, Climate and Resilience])

Transportation Control Measures (TCM) (AVAQMD 2017b). TCMs provide strategies and measures as options to offset growth in emissions from VMT growth.

Given the above discussion, population growth associated with the Plan would exceed SCAG population growth forecasts, and the project would therefore be inconsistent with the underlying assumptions of the emissions forecasts contained in the Ozone Attainment Plan. Therefore, impacts from the Plan related to consistency with emissions forecasts in the AQMP would be significant and unavoidable.

However, although the Plan would facilitate development beyond what is forecast in the current Ozone Attainment Plan, the new population forecast based on the Plan will be incorporated into AVAQMD's next attainment plan, and therefore the Plan would not be anticipated to obstruct implementation of the attainment plan.

Mitigation Measures

There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan. However, the Plan would not obstruct the implementation of the air quality plan.

Significance After Mitigation

There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan, even though the Plan would not obstruct the implementation of the air quality plan. Therefore, impacts remain significant and unavoidable.

Threshold 2: Would the Plan result in a cumulatively considerable net increase of any criteria pollutant for which the Plan region is nonattainment under an applicable federal or state ambient air quality standard?

Impact AQ-2 INDIVIDUAL DEVELOPMENT PROJECTS FACILITATED BY THE PLAN WOULD GENERATE CONSTRUCTION AND OPERATIONAL EMISSIONS. SUCH EMISSIONS MAY RESULT IN ADVERSE IMPACTS TO LOCAL AIR QUALITY. IMPLEMENTATION OF PLAN POLICIES AND COMPLIANCE WITH EXISTING REGULATIONS WOULD REDUCE EMISSIONS, BUT NOT BELOW APPLICABLE LEVELS OF SIGNIFICANCE. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Construction

Construction activity facilitated by the Plan would cause temporary emissions of various air pollutants. Ozone precursors NO_x and CO would be emitted by the operation of construction equipment, while fugitive dust (PM₁₀, and PM_{2.5}) would be emitted by activities that disturb the soil, such as grading and excavation, road construction, and building construction.

As shown in Table 4.3-4, emissions from construction activities for individual industrial/retail, office, and residential projects are anticipated to exceed regulatory thresholds for ROG emissions, therefore emissions would be potentially significant.

Table 4.3-4 Regional Daily Unmitigated Construction Emissions by Land Use Type

Emissions Source	Estimated Emissions (lbs/day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
SFR	50	39	34	<1	6	3
MFR	286	39	62	<1	10	4
Retail / Restaurant	50	21	25	<1	4	2
Hotel	35	22	25	<1	4	2
General Office	69	28	33	<1	4	2
Industrial	179	52	42	<1	19	4
School	38	21	25	<1	4	2
Government Office	12	14	17	<1	3	2
AVAQMD Thresholds	<i>137</i>	<i>137</i>	<i>548</i>	<i>137</i>	<i>82</i>	<i>82</i>
Threshold Exceeded?	Yes	No	No	No	No	No

See Appendix B for summaries and CalEEMod results. Note: Totals may not add up due to rounding.

Depending upon the type, size, and timeframe of development, maximum daily emissions associated with individual projects could potentially exceed AVAQMD significance thresholds. Plan Goal 2 and Goal 3, as identified in Section 4.3.2, *Regulatory Framework*, would reduce the overall level of air quality impacts related to construction during the Plan period by minimizing PM₁₀, fugitive dust, and by reducing or eliminating unnecessary sources of air pollution. In addition, the AVAQMD has established Rules 402 and 403, which strive to eliminate emissions of airborne pollutants and require project-specific control measures designed to reduce the level of fugitive dust entrainment, respectively. Rule 403 specifically requires the use of best available control measures for all construction activities. The major construction phases or elements specifically addressed by Rule 403 to reduce fugitive dust include earth moving, disturbed surface areas, unpaved roads, open storage piles, demolition, and other various construction activities. Compliance with Rule 403 by individual property owners, developers, or contractors would further reduce temporary construction-related air pollutant emissions. However, emissions would remain significant and mitigation would be required.

Operation

As shown in Table 4.3-5, development facilitated by the Plan would result in annual emissions in exceedance of the AVAQMD’s regional thresholds for individual projects for all pollutants except SO_x. Emissions from individual projects under the Plan would result in operational emissions based on the activities of each project. Table 4.3-6 shows regional operational emissions based on sample projects identified to provide for a conservative amount of annual growth as detailed in the *Methodology*. Individual sample projects used to determine annual construction emissions under the Plan are shown here separately to provide an idea of the range of emissions anticipated for potential individual projects and how they may compare to the regulatory thresholds. As shown, none of the individual projects would result in emissions above AVAQMD regulatory thresholds, however as the “project” being analyzed consists of all annual development under the Plan, consistency is determined by the Plan’s conformance to the thresholds.

Table 4.3-5 Regional Daily Unmitigated Plan Operational Emissions

Emissions Source	Estimated Emissions (tons/year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	174	2	163	0	1	1
Energy	2	0	0	0	0	0
Mobile	53	53	552	1	173	47
Total Daily	229	55	715	1	174	47
AVAQMD Thresholds	25	25	100	25	25	25

See Appendix B for summaries and CalEEMod results. Note: Totals may not add up due to rounding.

Table 4.3-6 Regional Daily Unmitigated Operational Emissions by Example Project

Emissions Source	Estimated Emissions (tons/year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Single Family Residential	1	<1	3	<1	<1	<1
Multi-Family Residential	7	3	29	<1	6	2
Retail/Restaurant	<1	<1	1	<1	<1	<1
Hotel	<1	<1	1	<1	<1	<1
Office	1	<1	4	<1	1	<1
Industrial	3	<1	5	<1	1	<1
School	<1	<1	2	<1	<1	<1
Government Office	<1	<1	<1	<1	<1	<1
Max Daily	7	3	29	<1	6	2
AVAQMD Thresholds	25	25	100	25	25	25
Exceed Thresholds	No	No	No	No	No	No

See Appendix B for summaries and CalEEMod results. Note: Totals may not add up due to rounding.

Depending upon the type, size, and timeframe of development, maximum daily emissions associated with individual projects could potentially exceed AVAQMD significance thresholds. Plan policies encouraging enhancements to building energy efficiencies and reduction in vehicle miles traveled, as detailed in Section 4.3.2, *Regulatory Framework*, would reduce the overall level of air quality impacts related to operational activities. In addition, the AVAQMD has established Rule 1113, which reduces ROG emissions from architectural coating activities. Adherence to applicable Plan policies and AVAQMD rules would reduce operational-related impacts to the greatest extent possible. However, given the unknown specifics of each project, there is the potential that even with implementation of AVAQMD measures and policies from the Plan, operational impacts would remain significant and unavoidable. Mitigation would be required.

Mitigation Measures

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce emissions for individual projects carried out under the Plan.

AQ-1 *Architectural Coating*

The City shall require that the following measures be implemented for all projects where unmitigated ROG impacts exceed regulatory thresholds. Implementation of these measures shall ensure that ROG emissions are reduced to below 137 lbs/day during construction activities.

- Project contractors shall use architectural coating materials that are zero-emission or has a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the City shall perform periodic site inspections during construction to verify compliance; and/or,
- All architectural coating phases shall be extended such that ROG emissions are reduced to below 137 lbs/day.

AQ-2 *Operational Emissions Reductions*

The City shall require that some or all of the following measures be implemented for individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. Applicable measures shall be incorporated such that emissions are fully reduced to below regulatory thresholds or the greatest extent feasible. The reduction measures shall include, as applicable to an individual project, but are not limited to, the following:

- Architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, the coating with the lowest ROG rating available shall be used
- Require new development to exceed the applicable Title 24 energy-efficiency requirements
- Projects shall incorporate outdoor electrical outlets such that 10 percent of outdoor landscaping equipment can be electrically powered
- All dock doors shall be equipped with electric plugs for electric TRUs
- Installation of electric vehicle charging stations at three percent beyond those required by State and local codes
- Provide infrastructure to allow for future electric vehicle charging stations for a minimum of 10 percent of the parking spaces beyond those already required to accommodate electric vehicle charging stations
- Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment
- Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet
- Provision of dedicated parking for carpools, vanpool, and clean air vehicles
- Provision of vanpool and/or shuttle service for employees
- Implementation of reduced parking minimum requirements
- Implementation of maximum parking limits
- Provision of bicycle parking facilities beyond those required by State and local codes
- Provision of a bicycle-share program
- Expansion of bicycle routes/lanes along the project site frontage
- Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if the project site is located along an existing transit route

- Expansion of sidewalk infrastructure along the project site frontage
- Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes
- Provision of employee lockers and showers
- Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services)
- Provision of alternative work schedule options, such as telework or reduced working days per week (e.g., 9/80 or 10/40 schedules), for employees
- Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options
- As applicable all industrial uses shall be required to enroll in U.S. EPA’s SmartWay program and shall use carriers that are SmartWay carriers

Significance After Mitigation

As shown in Table 4.3-7, with incorporation of Mitigation Measure AQ-1, emissions from construction activities could be reduced to less than significant levels for the sample multi-family and industrial projects implemented under the Plan. As part of Mitigation Measure AQ-1, individual project architectural coating phases were extended as follows: Multi-family Residential from 35 days to 88 days; and industrial from 20 to 30 days. Adherence to applicable Plan policies, AVAQMD rules, and Mitigation Measure AQ-1 would reduce potential construction-related impacts to the greatest extent possible. However, given the unknown specifics of each individual project, there is the potential that even with these measures, construction impacts would remain significant. Therefore, impacts would be significant and unavoidable.

Table 4.3-7 Regional Daily Mitigated Construction Emissions by Land Use Type

Emissions Source	Estimated Emissions (lbs/day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Multi-Family Residential	118	39	62	0	10	4
Industrial	120	52	42	0	19	4
AVAQMD Thresholds	137	137	548	137	82	82
Threshold Exceeded?	No	No	No	No	No	No

See Appendix B for summaries and CalEEMod results. Note: Totals may not add up due to rounding.

Incorporation of Mitigation Measure AQ-2 would reduce operational emissions. However, given the unknown nature of future development under the Plan and the extent to which the measures identified in Mitigation Measure AQ-2 would be incorporated by each project is unknown, therefore reductions from these measures cannot be quantified. Due to the level of exceedance and the uncertainty of implementation under future Plan development, even with this mitigation it is anticipated the emissions would continue to exceed regulatory thresholds. Therefore, operational impacts would remain significant and unavoidable.

Threshold 3: Would the Plan expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-3 INDIVIDUAL DEVELOPMENT PROJECTS CARRIED OUT UNDER THE PLAN WOULD GENERATE CONSTRUCTION- AND OPERATIONAL-RELATED EMISSIONS. SUCH EMISSIONS MAY RESULT IN ADVERSE IMPACTS TO LOCAL AIR QUALITY. HOWEVER, IMPLEMENTATION OF PLAN POLICIES AND COMPLIANCE WITH EXISTING REGULATIONS, WOULD REDUCE CONSTRUCTION AND OPERATIONAL EMISSIONS SUCH THAT IT WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Carbon Monoxide Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal one-hour standard of 35.0 parts per million (ppm) or the federal and state eight-hour standard of 9.0 ppm (CARB 2016).

The entire MDAB is in conformance with state and federal CO standards, no air quality monitoring stations report CO levels in the AVAQMD jurisdiction. Additionally, CARB no longer reports CO concentrations anywhere in California. Based on the low background level of CO in the Planning Area (indicated by the lack of monitoring at state or local levels), and the ever-improving vehicle emissions standards for new sources in accordance with state and federal regulations, the Plan would not create new CO hotspots. Therefore, the Plan would not expose sensitive receptors to substantial CO concentrations, and localized air quality impacts related to CO hot spots would be less than significant.

Toxic Air Contaminants

Sources of operational TAC's typically include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. Individual projects may include operation of permitted sources, such as emergency back-up generators, and gasoline stations, but these would be regulated under AVAQMD permits requiring emissions to be at levels that would not expose sensitive receptors to substantial health risk. Additionally, Plan Air Quality Goal 3 promotes minimizing idling and traffic congestion as well as minimizing the emissions of toxic air contaminants therefore further reducing the potential for TAC impacts to local receptors. As such, operations of individual projects carried out under the Plan would not be a substantial source of TACs. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 4: Would the Plan result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact AQ-4 INDIVIDUAL DEVELOPMENT PROJECTS CARRIED OUT UNDER THE PLAN WOULD GENERATE CONSTRUCTION- AND OPERATION-RELATED ODORS. SUCH EMISSIONS MAY RESULT IN TEMPORARY IMPACTS TO LOCAL AIR QUALITY. IMPLEMENTATION OF PLAN POLICIES AND COMPLIANCE WITH EXISTING REGULATIONS WOULD REDUCE ODOR EMISSIONS TO A LESS THAN SIGNIFICANT LEVEL.

Construction activities for projects carried out under the Plan would generate odors that would be short-term in nature and subject to AVAQM Rule 402 Nuisance. This rule prohibits the discharge of contaminants that could be detrimental or would cause a nuisance. Construction activities would be temporary and transitory and associated odors would cease upon construction completion. Accordingly, construction of individual projects under the Plan would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

Common sources of operational odor complaints include sewage treatment plants, landfills, recycling facilities, and agricultural uses. Implementation of individual projects under the Plan would not include these land uses as the Plan would result in residential, office, hotel, industrial, educational, and retail uses that do not typically emit odors that would be perceived by receptors as being a nuisance. Solid waste generated by the operations would be collected by a contracted waste hauler, ensuring that any odors resulting from on-site waste would be managed and collected in a manner to prevent the proliferation of odors. Operational odor impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.3.4 Cumulative Impacts

Plan related air pollution may combine with other cumulative projects (past, present, and reasonably foreseeable future) to violate criteria pollutant standards if the existing background sources cause nonattainment conditions. Air districts manage attainment of the criteria pollutant standards by adopting rules, regulations, and attainment plans, which comprise a multifaceted programmatic approach to such attainment.

The Plan itself is cumulative in nature as it represents growth through the Planning Area over approximately 25 years. The Plan is not one individual project, but a number of undefined future projects that may occur under the Plan. Therefore, cumulative impacts with respect to air quality would be identical to the individual impacts addressed above for the Plan. The Plan may cumulatively increase the potential for impacts resulting from increased air pollutant emissions. Implementation of the Plan policies and compliance with existing laws and regulations would reduce cumulative impacts, but not to a less than significant level. Cumulative impacts would be significant and unavoidable.

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4.4 Biological Resources

This section describes the existing biological resources in the Planning Area and evaluates the significance of potential impacts to sensitive biological resources (including impacts to special status species, habitats, and local policies or ordinances protecting biological resources) that would result from implementation of the proposed Plan and feasible mitigation measures to reduce these potential impacts. Sources utilized in this discussion include data provided by the U.S. Fish and Wildlife Service (USFWS), the California Native Plant Society (CNPS), and the California Department of Fish and Wildlife (CDFW).

4.4.1 Environmental Setting

a. Environmental Setting

The Planning Area is in the Antelope Valley in northern Los Angeles County. The region is bounded by the southern portion of the Sierra Nevada Mountain range to the north, the Tehachapi Mountains to the northwest, the Sierra Pelona Mountains to the southwest, and the San Gabriel Mountains to the southeast. To the east and northeast it is bounded by the Mojave Desert. The climate and ecological region of the Planning Area is unique to Los Angeles County because it is in the Mojave Desert Ecological Section. Specifically, the Planning Area is within the Western Mojave Mountains and Valleys Zone. This portion of the Mojave Desert contains more saltbush (*Atriplex* spp.) and other chenopod scrub than any other region in the Mojave area. Sparse western Joshua tree (*Yucca brevifolia*) and California juniper (*Juniperus californica*) are found within the Planning Area.

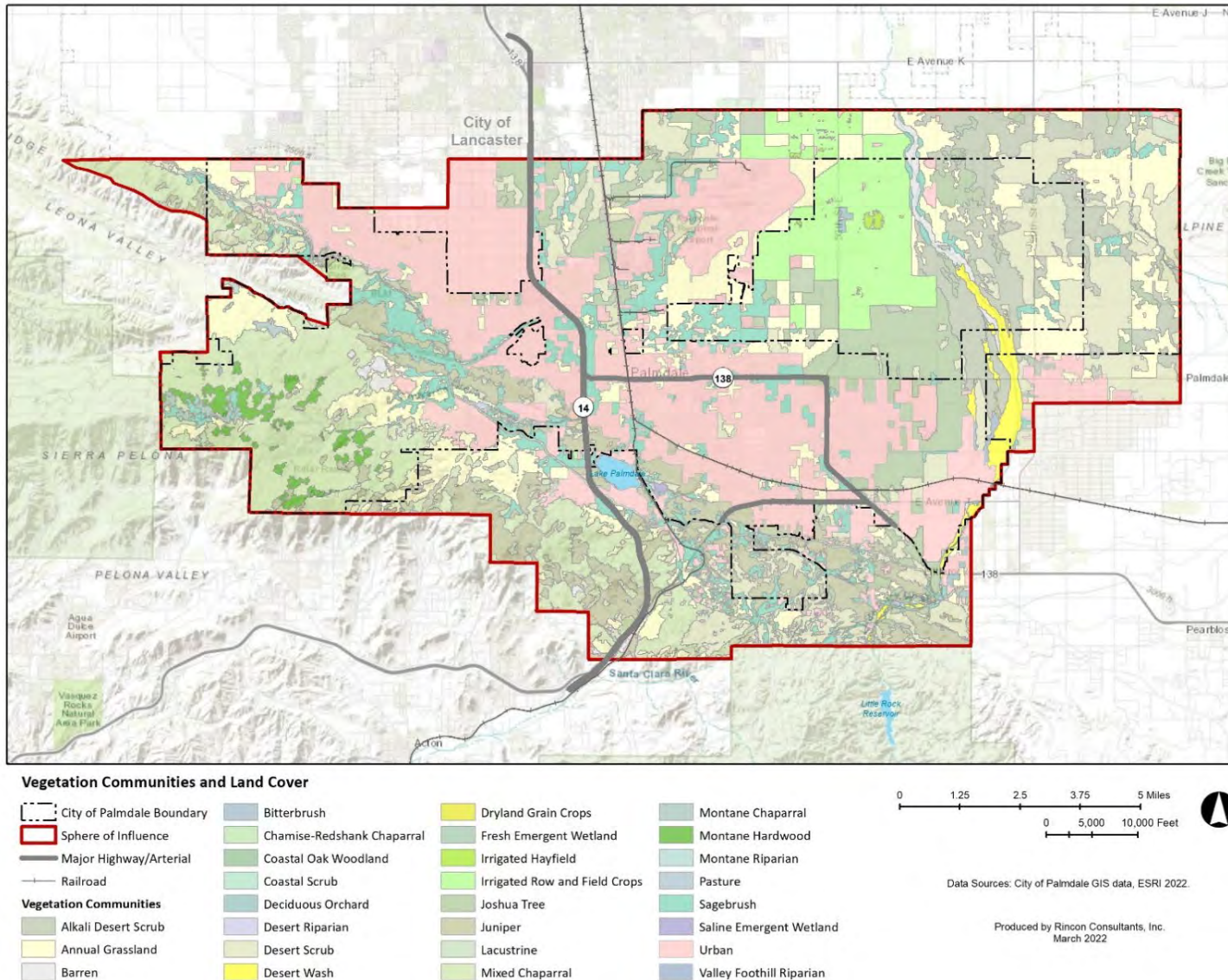
The Planning Area and the surrounding area has a relatively low percentage of vegetation cover due to the harsh temperature variation, low amount of precipitation, and low topographical variation. The area also was historically farmed and abandoned, creating large areas of non-native habitat.

The Planning Area encompasses approximately 174 square miles and abuts the unincorporated Los Angeles County community of Acton to the south and the City of Lancaster to the north. The developed parts of the Planning Area are predominantly developed with landscaped open spaces, residential, commercial, and airport industrial uses. There is also undeveloped, vacant land in the area, and mature ornamental and native trees are scattered throughout the Planning Area.

Vegetation Communities and Land Cover Types

The natural community descriptions listed below are based on the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships classification scheme (CWHHR) (Mayer and Laudenslayer 1988) (CDFW 2022). Figure 4.4-1 shows the habitat types/natural communities for the Planning Area. This information is based on data from the CDFW Vegetation Classification and Mapping Program. Primary habitat for plants and wildlife in the Planning Area consists of desert scrub, Joshua tree woodlands, ruderal and landscape, and developed/disturbed areas. The list below includes a discussion of natural communities in the Planning Area.

Figure 4.4-1 Vegetation Communities and Land Cover in the Planning Area



Alkali Desert Scrub

Alkali Scrub vegetation generally occurs at lower to middle elevations and interdigitates with a number of other arid and semiarid wildlife habitats. Alkali Scrub types can generally be found surrounding the receding shores of large prehistoric lakes or alkali playas that mark the locations of dry lake beds. Climatic conditions associated with Alkali Scrub generally include low precipitation and relative humidity, and high summer temperatures. Alkali Scrub vegetation occurs in California throughout the Mojave Desert, parts of the Colorado Desert, parts of northeastern California within the Great Basin, and in the southern San Joaquin Valley.

Barren

Barren habitat is defined by the absence of vegetation. Any habitat with less than two percent total vegetation cover by herbaceous, desert, or nonwild land species and less than 10 percent cover by tree or shrub species is defined this way. Barren habitat may be found in juxtaposition with many different habitats, depending on the region of the state. Where there is little or no vegetation, the structure of the non-vegetated substrate becomes a critical component of the habitat. The physical settings for permanently barren habitat represent extreme environments for vegetation.

Bitterbrush

Bitterbrush stands range from small, widely spaced shrubs to large, closely spaced shrubs with more than 90 percent canopy cover. Bitterbrush is only occasionally found in pure stands. Bitterbrush reproduces sexually by seeds, vegetatively by stem layering, and by sprouting after fire or mechanical damage. Several bitterbrush stands over 125 years old have been found on deep, well-drained soils. Bitterbrush is highly digestible and contains desirable levels of moisture, calcium, phosphorus, and fat. Bitterbrush is found on flats and slopes with deep, well-drained, rapidly permeable soils having a slightly acid reaction (pH 6.0 to 7.0). The elevation of bitterbrush varies with latitude, exposure, soil, and precipitation.

Chamise-Redshank Chaparral

Fire occurs regularly in Chamise-Redshank Chaparral and influences habitat structure. Chamise-Redshank Chaparral may consist of nearly pure stands of chamise or redshank, a mixture of both, or with other shrubs. Fire is the primary disturbance initiating secondary succession in Chamise-Redshank Chaparral. Chamise-Redshank Chaparral generally occurs below and grades into Mixed Chaparral. Chamise-dominated stands are most common on south- and west-facing slopes; redshank is found on all aspects. This habitat is usually found below 1,200 m (4,000 ft) on mountain ranges outside the deserts.

Coastal Oak Woodland

Coastal oak woodlands are extremely variable. The overstory consists of deciduous and evergreen hardwoods (mostly oaks 4.5-21 m [15 to 70 ft]) tall, sometimes mixed with scattered conifers. Composition of both overstory trees and understory of coastal oak woodland varies and reflects the environmental diversity over which this habitat occurs. Coastal oak woodlands are comprised of slow growing, long-lived trees, so succession requires a long time. Coastal oak woodlands are common to mesic coastal foothills of California. Coastal oak woodlands occupy a variety of Mediterranean type climates that vary from north to south and west to east. (The climate becomes

hotter and drier toward the south and east). Precipitation occurs in the milder winter months, almost entirely as rainfall, followed by warm to hot, dry summers.

Coastal Scrub

Structure of the plant associations that comprise Coastal Scrub is typified by low to moderate-sized shrubs with mesophytic leaves, flexible branches, semi-woody stems growing from a woody base, and a shallow root system. Disturbances such as road cuts or landslides create areas often invaded by both northern and southern Coastal Scrub. Coastal Scrub seems to tolerate drier conditions than its associated habitats. It is typical of areas with steep, south-facing slopes; sandy, mudstone or shale soils; and average annual rainfall of less than 30 cm (12 in). However, it also regularly occurs on stabilized dunes, flat terraces, and moderate slopes of all aspects where average annual rainfall is up to 60 cm (24 in).

Deciduous orchards

Deciduous orchards in California are typically open single species tree dominated habitats. Depending on the tree type and pruning methods they are usually low, bushy trees with an open understory to facilitate harvest. The understory in deciduous orchards often has herbaceous annuals and perennials during the winter months. Deciduous orchards are planted in uniform patterns and intensively managed. Orchards have been planted on deep fertile soils that once supported productive and diverse natural habitats. Larger and more diverse populations of wildlife were also supported by these native habitats. Deciduous orchards can be found on flat alluvial soils in the valley floors, in rolling foothill areas, or on relatively steep slopes.

Desert Riparian

Desert Riparian habitats are characterized as dense groves of low, shrublike trees or tall shrubs to woodlands of small to medium-sized trees. These habitats support more bird species at greater densities than other desert habitats. Soils vary from silty alluvial to rocky, sandy, well-drained substrates. Soils generally are moist, but some are dry at the surface with moisture beginning at a depth of several meters. Desert Riparian habitats are found along permanent streams and at seeps and springs in the Mojave and Sonoran deserts, and in desert canyons of the Peninsular ranges. These habitats generally are found at elevations less than 900 m (3,000 ft); however, willow thickets may be found well above that level in mountains.

Desert Scrub

Desert scrub is a generic habitat characterized by sandy soils that are dominated by shrubs with a minimal understory. The species associated with this habitat type are highly adapted to survive under harsh environmental conditions, specifically high temperatures and low rainfall. Annual species occur during years with adequate moisture, but these landscapes typically consist of perennial shrubs. There are different categories of desert scrub based on species assemblages, such as Mojave creosote bush scrub (*Larrea tridentata*), saltbush scrub (*Atriplex confertifolia*), rabbitbush scrub (*Ericameria nauseosa*), and shadescale scrub (*Atriplex confertifolia*). Desert scrub habitat occurs in small, undeveloped locations in the Planning Area, typically in narrow strips along parking lots or paved areas. This vegetation community is also common in vacant lands and areas of existing residential development in the Planning Area.

Desert Wash

Desert Wash habitats are characterized by the presence of arborescent, often spiny, shrubs generally associated with intermittent streams (washes) or drier bajadas (alluvial deposits adjacent to washes), especially in the Sonoran Desert. The composition of desert wash plant assemblages depends on variables such as latitude, elevation, and precipitation. Soils of Desert Wash habitats tend to be sandy to gravelly; some wash plants (e.g., mesquite) may be found on a variety of soils. These habitats are found at elevations between 760 meters (about 2,500 ft) and 2,000 meters (6,600 feet).

Dryland grain and seed crops

Vegetation in the dryland grain and seed crops habitat includes seed producing grasses, primarily barley, cereal rye, oats, and wheat. Dryland grain and seed crops in California are annuals. Dryland grain and seed crops occur in association with orchards, vineyards, pasture, urban, and other wildlife habitats such as riparian, chaparral, wetlands, desert, and herbaceous types. Dryland grain and seed crops are usually established on fertile soils, which historically supported an abundance of wildlife. Grain crops have reduced the wildlife habitat richness and diversity. Non-irrigated grain and seed crops are often located on flat to gently rolling terrain.

Fresh Emergent Wetlands

Fresh Emergent Wetlands are characterized by erect, rooted herbaceous hydrophytes. Fresh emergent wetlands are among the most productive wildlife habitats in California. Fresh emergent wetland habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. However, they are most common on level to gently rolling topography. Fresh emergent wetlands are found throughout California at virtually all elevations but are most prevalent below 2,270 meters (7,500 feet).

Irrigated Hayfield (IRH)

Except for an initial growing period of 2-6 months, depending on climate and soil, this habitat is dense, with nearly 100 percent cover. This habitat includes alfalfa fields and grass hayfields. This habitat occurs in variable climates, from hot and dry to cool and wet to cold and snowy. IRH requires relatively flat topography that allows irrigation or water spreading. Soils are highly variable but usually more than one meter (3.3 feet) deep and often of alluvial origin.

Joshua Tree

Joshua Tree habitats generally occur at moderate elevations in the Mojave Desert between creosotebush scrub and pinyon-juniper woodlands. Joshua Tree habitats occur in broad valleys where soils are deep, on alluvial or rocky slopes, and on pediments with minimal runoff surrounding desert mountains and mesas. Soils must be well drained but may vary considerably in other characteristics. Typical soils may be loose, porous, loamy, sandy, or fine gravelly and are more permeable with lower salt concentrations and more organic matter than other soils, especially those at lower elevations. Hot, dry summers and cool to cold, moist winters are characteristic of areas occupied by Joshua trees and their associates. The sharp spiny leaves provide protective havens for birds and lizards.

Juniper

Juniper habitats are characterized as woodlands of open to dense aggregations of junipers (Western Juniper, California Juniper, or Utah Juniper) in the form of arborescent shrubs or small trees. Junipers are relatively slow growing, and the successional sequence is relatively long. Juniper berries are an important food source for wintering birds. Western Juniper Woodland occurs on gentle slopes, alluvial fans, canyon slopes, and steep, rocky escarpments. Elevational range of juniper is 100 to 3,100 meters (330 to 10,170 feet).

Lacustrine

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water. Depth can vary from a few centimeters to hundreds of meters. Suspended organisms such as plankton are found in the open water of lacustrine habitats. Dominant are the phytoplankton, including diatoms, desmidsx, and filamentous green algae. The relatively calm waters of lakes and ponds offer environmental conditions that contrast sharply with those of running water. Light penetration is dependent on turbidity. Temperatures vary seasonally and with depth. Because only a small proportion of the water is in direct contact with the air and because decomposition is taking place on the bottom, the oxygen content of lake water is relatively low compared to that of running water. In some lakes, oxygen may decrease with depth, but there are exceptions. These gradations of oxygen, light and temperature along with the currents and seiches, influence the vertical distribution of lake organisms. Lacustrine habitats are found throughout California at virtually all elevations but are less abundant in arid regions.

Mixed Chaparral

Mixed chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Shrub height and crown cover vary with age since last burn, precipitation, aspect, and soil type. At maturity, cismontane mixed chaparral typically is a dense, nearly impenetrable thicket. On serpentine soils or transmontane slopes, shrub cover may be considerably reduced, and shrubs may be shorter. Leaf litter and standing dead material may accumulate in stands that have not burned for several decades. Mixed chaparral can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Ceanothus cuneatus* Shrubland Alliance and the *Arctostaphylos* spp. Shrubland Alliances.

Montane Chaparral

Montane chaparral varies markedly throughout California. Species composition changes with elevational and geographical range, soil type, and aspect. Montane chaparral can be found on shallow to deep soils, on all exposures, and from gentle to relatively steep slopes. It may dominate on more xeric sites but occurs locally throughout the coniferous forest zone. Generally, climate is like that associated with the coniferous forest zone, cold winter temperatures with substantial precipitation. Summers are typically hot and dry. Montane chaparral is associated with mountainous terrain from mid to high elevation at 914 to 3,047 meters (3,000-10,000 feet).

Montane Hardwood

Montane hardwood habitat is typically composed of a pronounced hardwood tree layer, with an infrequent and poorly developed shrub stratum, and a sparse herbaceous layer. The montane hardwood habitat ranges throughout California mostly west of the Cascade-Sierra Nevada crest.

East of the crest, it is found in localized areas of Placer, El Dorado, Alpine and San Bernardino Counties. Elevations range from 300 feet near the Pacific Ocean to 9,000 feet in southern California. In the Planning Area, the canyon live oak (*Quercus chrysolepis*) alliance is the representative montane hardwood community. In the Coast Range and Klamath Mountains, canyon live oak often forms pure stands on steep canyon slopes and rocky ridge tops. Canyon live oak and associates are found on a wide range of slopes, especially those that are moderate to steep. Soils are for the most part rocky, alluvial, coarse textured, poorly developed, and well drained. Soil depth classes range from shallow to deep. Canyon live oak, along with a few of its associates are also found on ultrabasic soils. Mean summer temperatures in the montane hardwood habitat vary between 68- and 77-degrees Fahrenheit (°F) and mean winter temperatures between 37 and 45°F. Annual precipitation varies from 110 inches in the northern Coast Range to 36 inches in the mountains of southern California.

Montane Riparian

Usually, the montane riparian zone occurs as a narrow, often dense grove of broad-leaved, winter deciduous trees up to 30 meters (98 feet) tall with a sparse understory. All riparian habitats have an exceptionally high value for many wildlife species. Such areas provide water, thermal cover, migration corridors and diverse nesting and feeding opportunities. The shape of many riparian zones, particularly the linear nature of streams, maximizes the development of edge which is so highly productive for wildlife. Riparian areas are found associated with montane lakes, ponds, seeps, bogs, and meadows as well as rivers, streams, and springs.

Pasture

Pasture vegetation is a mix of perennial grasses and legumes that normally provide 100 percent canopy closure. Pastures often occur in association with agricultural habitats. Pastures are used by a variety of wildlife depending upon geographic area and types of adjacent habitats. Pastures are planted on flat and gently rolling terrain. Flat terrain is irrigated by the border and check method of irrigation, except on sandy soils or where water supplies are limited.

Sagebrush

Sagebrush stands are typically large, open, discontinuous stands of big sagebrush of fairly uniform height. Big sagebrush tends to have a single short, thick, stem that branches into a nearly globular crown. Plant heights range from one half to three meters (1.6 to 9.8 feet) and density ranges from very open, widely spaced, small plants to large, closely spaced plants with canopies touching. The sagebrush habitat can exist in any of the structural stages. The most common disturbance factors are wildfire, prescribed burning, seeding to grasses, livestock grazing, and defoliation by larvae of the sagebrush defoliator moth. Sagebrush occurs at a wide range of middle and high elevations. The Sagebrush type is important to wildlife because it serves as habitat for game animals and occupies a vast area. Sagebrush occupies dry slopes and flats from about 500 meters (1,600 feet) to 3,200 (10,500 feet) in elevation.

Saline Emergent Wetland

Saline Emergent Wetlands (SEW) are characterized as salt or brackish marshes consisting mostly of perennial graminoids and forbs, the latter often succulent and suffrutescent, ranging in height from 0.2 to 2 meters (0.7-6.6 feet) or more. SEW becomes established as low marsh on intertidal flats and advances seaward as plant detritus and sediments accrete, gradually causing a change to high

marsh. SEW occur above intertidal sand and mud flats and below upland communities not subject to tidal action. The upper part of estuaries grade into brackish and freshwater marshes. SEW provide food, cover and nesting and roosting habitat for a variety of birds, mammals, reptiles, and amphibians. SEW occur along the margins of bays, lagoons, and estuaries sheltered from excessive wave action. SEW occur in the upper intertidal zone from about the level of mean lower high water to extreme high water. Maximum elevation is about 3.1 m (10.3 ft) above mean lower low water or one m (3.3 ft) above mean high water.

Urban

The structure of urban vegetation varies, with five types of vegetative structure defined: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. The juxtaposition of urban vegetation types within cities produces a rich mosaic with considerable edge areas. The overall mosaic may be more valuable as wildlife habitat than the individual units in that mosaic. Species composition in urban habitats varies with planting design and climate. Detwyler has classified urban vegetation into four major types: the interstitial forest, consisting of trees growing between man's constructions (buildings, streets, etc.); parks and green zones, existing in blocks or sizable patches that are relatively unbroken by human construction; gardens, in which are green ornamental plants as well as food plants; and lawns, or interstitial grasslands. Most units of urban vegetation are relatively static in species composition because of maintenance. Unmaintained units often include exotic and native species.

Urban development has occurred in or adjacent to most other habitats in California, with the highest density at lower elevations. Most urban developments exceeding 10,000 in population were developed in grassland or scrub (coastal sagebrush or chaparral) vegetation. Three urban categories relevant to wildlife are distinguished: downtown, urban residential, and suburbia. The heavily developed downtown is usually at the center, followed by concentric zones of urban residential and suburbs. Urban habitats occur throughout California. Urban habitats are the result of modifying pre-settlement vegetation and introducing new species.

Valley Foothill Riparian

Riparian habitats are associated with rivers and streams as well as lakes, ponds, seeps, bogs, meadows, and springs. Valley foothill riparian habitats occur in the Central Valley and the lower foothills of the Cascade, Sierra Nevada, and Coast ranges. They are also found in lower slopes at the bases of the Peninsular and Transverse ranges. A few lower elevation locations are on the desert side of the southern California mountains. Valley foothill riparian habitats range from sea level to 3,000 feet, reaching an elevation of 5,000 feet on south-facing slopes. Valley-foothill riparian habitats are found in valleys bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. They are generally associated with low velocity flows, flood plains, and gentle topography. Valleys provide deep alluvial soils and a high-water table. Average precipitation ranges from 6 to 30 inches, with little or no snow. Mean summer maximum temperatures are 75 to 102°F, mean winter minimum temperatures are 29 to 44 °F. Valley Foothill Riparian habitats are characterized by hot, dry summers, mild and wet winters. Valley-foothill riparian habitats provide food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for an abundance of wildlife.

Wetlands and Aquatic Resources

In accordance with Section 1602 of the CFGC, the CDFW has jurisdiction over lakes and streambeds (including adjacent riparian resources). CDFW regulates wetland areas that are part of a river, stream, or lake, but also temporary wetland features such as vernal pools. Under Section 404 of the Clean Water Act (CWA), the United States Army Corps of Engineers (USACE) has authority to regulate activities that discharge dredge or fill material into wetlands or other “waters of the United States” through issuance of a Section 404 Permit. Wetlands and water features in Palmdale have been highly altered and are presently very scarce, due to the urbanized nature of the area. The major watercourses flowing through Palmdale are Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash. The primary potential jurisdictional feature in the southern portion of the Planning Area is Lake Palmdale.

The area outside Palmdale city limits but within its Sphere of Influence, contains wetlands and waters mapped by the U.S. Fish and Wildlife’s (USFWS) National Wetland Inventory (NWI) (2022). These include freshwater emergent wetland, freshwater forested/shrub wetland, freshwater ponds, and riverine features. Wetland and water features located in the Planning Area and surrounding area are shown in Figure 4.4-2 and discussed below.

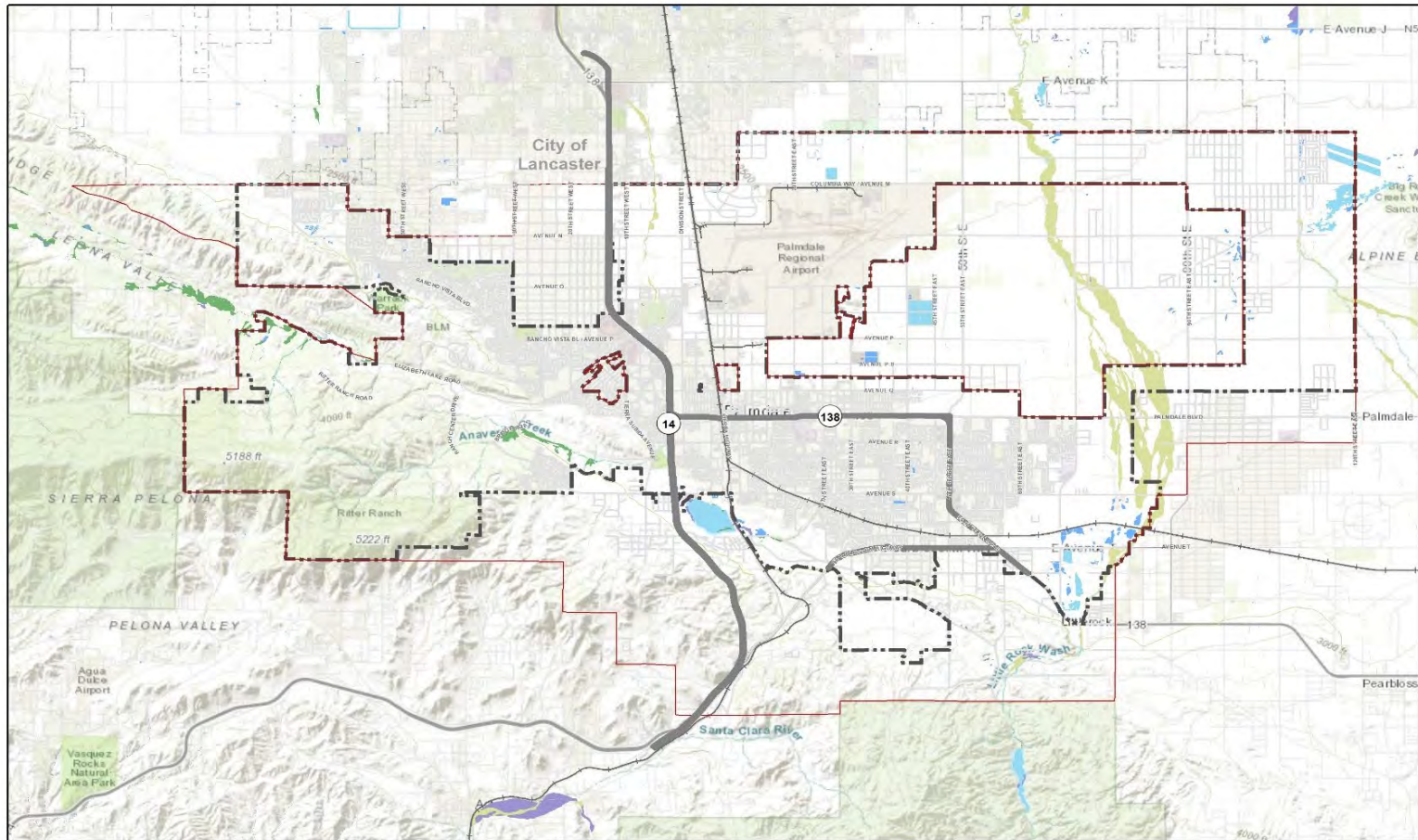
Freshwater Emergent Wetland

Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. Within the Planning Area, this habitat is dominated by perennial monocots up to 6.6 feet tall (Cheatham and Haller 1975, Cowardin et al. 1979). All emergent wetlands are flooded frequently, enough so that the roots of the vegetation prosper in an anaerobic environment (Gosselink and Turner 1978). On the upper margins of freshwater emergent wetlands, saturated or periodically flooded soils support several moist soil plant species including big leaf sedge (*Carex amplifolia*), baltic rush (*Juncus balticus*), redroot nutgrass (*Cyperus erythrorhizos*) and on more alkali sites, saltgrass (*Distichlis spicata*). On wetter sites, common cattail (*Typha latifolia*), tule bulrush (*Schoenoplectus acutus*), and river bulrush (*Bolboschoenus fluviatilis*) are potential dominant species (Cheatham and Haller 1975, U.S. Army Corps of Engineers [USACE] 1978, Wentz 1981).

Freshwater emergent wetlands are found throughout California at virtually all elevations but are most prevalent below 7,500 feet (Cheatham and Haller 1975). The largest acreage of fresh emergent wetlands occurs in the Klamath Basin, Sacramento Valley, San Joaquin Valley, Sacramento-San Joaquin Delta, and Imperial Valley-Salton Sea. Freshwater emergent wetland habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. However, they are most common on level to gently rolling topography. They are found in various landscape depressions or at the edge of rivers or lakes (Wentz 1981). Soils are predominantly silt and clay, although coarser sediments and organic material may be intermixed (Cowardin et al. 1979). In some areas organic soils (peat) may constitute the primary growth medium (USACE 1978).

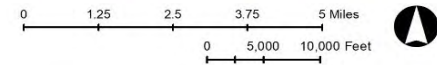
Freshwater emergent wetlands are among the most productive wildlife habitats in California. They provide food, cover, and water for more than 160 species of birds (U.S. Comptroller General 1979), and numerous mammals, reptiles, and amphibians. Many species rely on Freshwater emergent wetlands for their entire life cycle. The endangered California red-legged frog (*Rana draytonii*), and vernal pool fairy shrimp (*Branchinecta lynchi*) require pond water with associated emergent vegetation for breeding, and tricolored blackbird (*Agelaius tricolor*) use Freshwater emergent wetlands as feeding areas.

Figure 4.4-2 National Wetlands Inventory



National Wetland Inventory

- | | | |
|---------------------------|-----------------------------------|-----------------|
| City of Palmdale Boundary | Wetland Type | Freshwater Pond |
| Sphere of Influence | Freshwater Emergent Wetland | Lake |
| Other City Boundary | Freshwater Forested/Shrub Wetland | Riverine |
| Major Highway/Arterial | | |
| Railroad | | |



Data Sources: City of Palmdale GIS data; NWI, 2022.

Produced by Rincon Consultants, Inc.
 March 2022

Freshwater Forested/Shrub Wetland

Shrub wetland includes areas dominated by woody vegetation less than 20 feet tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. All water regimes except subtidal and regularly flooded-tidal fresh are included. Shrub wetlands may represent a successional stage leading to forested wetland, or they may be relatively stable communities. They occur only in the Estuarine and Palustrine Systems but are one of the most widespread classes in the U.S. (Shaw and Fredine 1956).

Forested wetland is characterized by woody vegetation that is 20 feet or taller. Forested wetlands are most common in the eastern U.S. and in those sections of the West where moisture is relatively abundant, particularly along rivers and in the mountains. Like shrub wetland, they only occur in the Palustrine and Estuarine Systems and normally possess an overstory of trees, an understory of young trees or shrubs, and an herbaceous layer. Tricolored blackbirds and the endangered western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) use freshwater forested/shrub wetlands as nesting sites.

Freshwater Pond

In the Planning Area, freshwater pond features are generally seasonal, lasting only a few months out of the year. Freshwater ponds may have limited species diversity since they are often isolated from one another and from other water sources like rivers and oceans. Producers in freshwater ponds generally include rooted plants and phytoplankton. Water lilies (*Nymphaea* spp.) are common rooted plants in many freshwater ponds, especially in man-made ponds. Curly pondweed (*Potamogeton crispus*) and duck weed (*Lemna* spp.) are common elements of freshwater ponds. Phytoplankton grows in freshwater pond habitats and is one of the biggest contributors to the production of oxygen in a pond ecosystem.

Temperature varies in freshwater ponds seasonally. During the summer, the temperature can range from 40°F near the bottom to 72°F at the top. During the winter, the temperature at the bottom can be 40°F while the top is 32°F (ice). There are also many freshwater ponds throughout California that do not freeze during the winter.

Freshwater ponds are commonly used as a foraging location for many species including aquatic and semi-aquatic amphibians and reptiles, fish, and waterfowl. Specifically, western pond turtle (*Emys marmorata*) uses freshwater ponds for all life stages.

Riverine

Riverine habitat features include intermittent or continually running water such as rivers and streams. A stream originates at some elevated source, such as a spring or lake, and flows downward at a rate relative to slope or gradient and the volume of surface runoff or discharge. Rivers and streams occur statewide, mostly between sea level and 8,000 feet. Riverine habitats can occur in association with many terrestrial habitats. Riparian habitats are found adjacent to many rivers and streams. Riverine habitats are also found contiguous to lacustrine and fresh emergent wetland habitats.

The open water zones of large rivers provide resting and escape cover for many species of waterfowl. Gulls (*Larus* spp.), terns (*Sterna* spp.), and osprey hunt in open water. Near-shore waters provide food for waterfowl, herons, shorebirds, belted-kingfisher, and American dipper. Many species of insectivorous birds (swallows, swifts, flycatchers) hawk their prey over water. Some of the

more common mammals found in riverine habitats include river otter (*Lontra canadensis*), mink (*Neovison vison*), and muskrat (*Ondatra zibethicus*).

Special-Status Species

Special-status species include those listed as rare, threatened, or endangered by CDFW or the USFWS, or are candidates for either state or federal listing, or have been designated as "fully protected" or "species of special concern" by USFWS and CDFW, or are other species that are tracked by the *California Natural Diversity Database* (CNDDDB) or California Native Plant Society (CNPS), but do not fall into any of the categories cited above. Information regarding the occurrences of special-status species in the Planning Area was obtained from searching the CDFW CNDDDB (CDFW 2022), USFWS *Information for Planning and Conservation* (IPaC) (February 2022), and CNPS's Inventory of Rare and Endangered Plants (CNPS 2022) searching for the U. S. Geological Survey (USGS) *Palmdale* and eight surrounding 7.5-minute quadrangles. These databases contain records of reported occurrences of federal- or State-listed endangered, threatened, rare, or proposed endangered or threatened species, federal species of concern, State species of special concern, or otherwise sensitive species or habitat that may occur in the Planning Area. Lists from the USFWS and CDFW were also reviewed and tables of common and sensitive wildlife and plant species potentially occurring within the Planning Area were generated and provided in Appendix C. This search range encompasses a sufficient distance to accommodate for regional habitat diversity and to overcome the limitations of the CNDDDB (the CNDDDB is based on reports of actual occurrences and does not constitute an exhaustive inventory of every resource). See Appendix C for detailed species lists.

Listed Species

Federal, State, and local authorities under a variety of legislative acts share regulatory authority over biological resources. The CDFW has direct jurisdiction under law for biological resources through the California Fish and Game Code and under the California Endangered Species Act (CESA). The federal Endangered Species Act (FESA) also provides direct regulatory authority over special-status species and their habitats to the USFWS. These acts specifically regulate listed and candidate endangered species and candidate threatened species, which are defined as follows:

- **Endangered Species:** any species in danger of extinction throughout all or a significant portion of its range
- **Threatened Species:** any species likely to become an endangered species within the foreseeable future throughout all or a significant part of its range

Special-Status Wildlife

Invertebrate, fish, amphibian, reptile, bird, and mammal species of concern are known or possibly found in the Planning Area, based on a search of the CNDDDB. Appendix C identifies animal species with the potential to occur in the Planning Area based on a search of the CNDDDB and USFWS IPaC and presence of suitable habitat within or adjacent to the Planning Area. Three of these species have federal and State listing status. These include:

- Federally Endangered and State Endangered
 - Southern mountain yellow-legged frog (*Rana muscosa*)
 - Least Bell's vireo (*Vireo bellii pusillus*)

- Federally Threatened and State Threatened Desert tortoise (*Gopherus agassizii*)

Six wildlife species with the potential to occur in the Planning Area have either federal or State protection status. These include:

- Federally Threatened
 - Coastal California gnatcatcher (*Polioptila californica californica*)
 - Vernal pool fairy shrimp (*Branchinecta lynchi*)
 - California red-legged frog (*Rana draytonii*)
- State Threatened
 - Tricolored blackbird
 - Swainson's hawk (*Buteo swainsoni*)
 - Mohave ground squirrel (*Xerospermophilus mohavensis*)

State or federally listed species are afforded the highest protection status.

Special-Status Plant Species

Special-status plant species are defined as listed as endangered or threatened under FESA or CESA, or rare under the California Native Plant Protection Act or considered to be rare (but not formally listed) by resource agencies and the scientific community. CDFW and local governmental agencies may also recognize special-status listings developed by focal groups (i.e., Audubon Society Blue List, CNPS Rare and Endangered Plants, U.S. Forest Service regional lists). A total of 43 special-status plant species have been observed or have the potential to occur within the nine-quad search area of the Planning Area. Appendix C shows the special-status species and habitat requirements for each species within the vicinity of the Planning Area.

Sensitive Natural Communities

Special-status habitats are vegetation communities, associations, or sub-associations that support concentrations of special-status plant and/or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Although special-status habitats are not afforded legal protection unless they support special-status species, potential impacts to them may trigger the prescription of mitigation measures by resource agencies for those habitats.

Sensitive habitats are special-status plant communities considered sensitive by federal, State, and local agencies due to their rarity or value in providing habitat for vegetation, fish, and wildlife. Sensitive habitats present within the Planning Area include Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash. The primary jurisdictional feature within the Planning Area is Lake Palmdale.

Joshua tree habitats are considered a threatened California habitat by CDFW and recognized as a sensitive habitat by the City of Palmdale. They are characterized as open woodlands with scattered Joshua trees and, generally, little herbaceous understory. They are rarely found as pure stands and are associated with other trees and shrubs such as California juniper, single-leaf pinyon, and Mojave yucca. At lower elevations or areas that are less suitable for dense stands, the Joshua tree woodlands integrate with desert scrub habitats. There is Joshua Tree Woodland habitat across West Avenue K in Rawley Duntley Park and the Prime Desert Woodland Preserve in the City of Lancaster.

Significant Ecological Areas (SEAs)

Several Significant Ecological Areas (SEAs), are present in the Planning Area, including the Antelope Valley SEA to the northeast, San Andreas SEA west of the City, and the Santa Clara River SEA to the south of the City and east of SR-14. In the eastern portions of the City, there is a large community of western Joshua Trees in and around the Antelope Valley SEA. The San Andreas SEA includes communities of Sagebrush and Juniper providing habitat for select protected species like the Ferruginous Hawk and the Short-joint Beavertail. Goal CON-1 of the Conservation and Open Space Element of the proposed Plan is to protect Significant Ecological Areas in and around the City, including, but not limited to, sensitive flora and fauna habitat areas.

b. Critical Habitat

Critical habitat is defined in the FESA as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as “critical habitat” after USFWS publishes a proposed federal regulation in the Federal Register and then receives and considers public comments on that proposal. The final boundaries of a critical habitat area, once identified, are published in the Federal Register. There are no critical habitats in the Planning Area. Arroyo toad (*Anaxyrus californicus*) is the nearest critical habitat located three miles south of the Planning Area.

c. Wildlife Movement Corridors

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

The California Essential Habitat Connectivity Project: A Strategy for Conserving Connected California (Spencer et al. 2010) evaluates critical wildlife movement corridors throughout California. Essential Connectivity Areas (ECA) represent the most critical wildlife movement areas for long-term conservation of California’s special-status wildlife species. While ECAs do not occur in the Planning Area, Los Angeles County contains ECAs approximately 15 miles south of Palmdale, along the San Gabriel Mountains.

Small scale corridors that facilitate wildlife movement are also present in the Planning Area, many of which are not mapped as ECAs. These include the various rivers, creeks, drainages, and other topographic features that facilitate movement, such as Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash. These corridors provide a means to facilitate regional connectivity for a number of wildlife species as a wildlife corridor. These areas are identified as important movement corridors for species such as San Joaquin pocket mouse (*Perognathus inornatus*), coast horned lizard (*Phrynosoma blainvillii*), riparian birds, and other small carnivores.

4.4.2 Regulatory Setting

This section describes federal, State, regional, and local regulations that provide for protection and management of biological resources associated with the proposed Plan. Biological resources include plant and wildlife species, terrestrial and aquatic habitats, and habitats of concern.

Federal Regulations

Federal Endangered Species Act

The USFWS and the National Marine Fisheries Service (NMFS) are responsible for implementing the federal Endangered Species Act (FESA) (16 U.S.C. §1531 et seq.). The Act protects fish and wildlife species that are listed as threatened or endangered, and their habitats. “Endangered” species, subspecies, or distinct population segments are those that are in danger of extinction throughout all or a significant portion of their range; “threatened” species, subspecies, or distinct population segments are those that are likely to become endangered in the near future.

Section 9 of the FESA prohibits the “take” of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the recovery of a species. Take is defined as an action or attempt “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing. Under Section 9 of the FESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any State law or in the course of criminal trespass. Candidate species and species that are proposed, or under petition for listing, receive no protection under Section 9.

Clean Water Act of 1972

The purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. In accordance with Section 404 of the Clean Water Act (CWA), USACE regulates the discharge of dredged or fill material into waters of the U.S. Permitting is required for filling waters of the U.S. (including wetlands). Permits may be issued on an individual basis or may be covered under approved nationwide permits. The term “waters of the United States” is defined as:

- All waters currently used, or used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide;
- All interstate waters, including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds; the use, degradation, or destruction of which could affect foreign commerce including any such waters: (1) which could be used by interstate or foreign travelers for recreational or other purposes; or (2) from which fish or shell fish are, or could be taken and sold in interstate or foreign commerce; or (3) which are used or could be used for industries in interstate commerce;
- All other impoundments of waters otherwise as defined as waters of the United States under the definition;

- Tributaries of waters identified above;
- The territorial seas; and,
- Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in the paragraphs above.

Migratory Bird Treaty Act

The USFWS is also responsible for implementing the Migratory Bird Treaty Act (MBTA) (16 U.S.C. §703-712 et seq.). The MBTA implements a series of treaties between the United States, Mexico, and Canada that provide for the international protection of migratory birds. According to the MBTA, most actions that result in “taking” or possession (permanent or temporary) of a protected species can be a direct violation of the Act. The word “take” is defined as “pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.” The provisions of the MBTA are nearly absolute; “except as permitted by regulations” is the only exception. Examples of permitted actions that do not violate the law are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and similar activities.

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) establishes State policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that State agencies should not approve projects that jeopardize the continued existence of threatened or endangered species, if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect species on the federal and State endangered species lists, compliance with the federal ESA satisfies CESA if the CDFW determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of species that are only State-listed, the project proponent must apply for a take permit under Section 2081(b) of the California Fish and Game Code.

California Fish and Game Code

The CDFW derives its authority from the Fish and Game Code of California. The CESA (Fish and Game Code Section 2050 *et. seq.*) prohibits take of State-listed threatened and endangered species. Take under CESA is restricted to direct harm of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW additionally prohibits take for species designated as Fully Protected under the CFGC under various sections.

California Fish and Game Code Sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (CFGC Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Species of Special Concern (SSC) is a category used by the CDFW for those species considered to be indicators of regional habitat changes or potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands, and these species are considered sensitive as described under the CEQA Appendix G

questions. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (CFG Section 1900 *et seq.*). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of the plant(s).

Lakes, ponds, perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 *et seq.* of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the bed or bank of a lake or stream consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream, or lake.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (CNPPA) prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. CESA defers to the CNPPA, which ensures that State-listed plant species are protected when State agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the CNPPA are not protected under CESA; however, impacts to endangered, rare, or threatened species, including plants, are evaluated under CEQA. The following kinds of activities are exempt from CNPPA: agricultural operations; fire control measures; timber harvest operations; mining assessment work; removal of plants by private landowners on private land for construction of canals, ditches, buildings, roads, or other rights-of-way; and removal of plants for performance of a public service by a public agency or a publicly- or privately-owned public utility.

Porter-Cologne Water Quality Control Act

The SWRCB and RWQCBs maintain independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Water Quality Act of 1969. This Act is similar to and largely based off the federal Clean Water Act and is intended to preserve and enhance all beneficial uses of the waters of the State. The RWQCB currently employs the USACE procedures and definitions for defining the physical boundaries of wetlands and waters. However, there are differences in the State and federal ability to regulate these features. In order to be subject to federal regulation as waters of the United States, wetlands and waters must demonstrate that water is, or is adjacent to, a navigable waterway or a tributary to a navigable waterway, or have an interstate or foreign commerce connection. Under the Porter-Cologne Act, the State has regulatory authority over what are termed “isolated” waters and wetlands, in addition to waters of the U.S.

Regional and Local Regulations

West Mojave Coordinated Management Plan

The West Mojave Coordinated Management Plan (Conservation Plan) is a habitat conservation plan that acts as a comprehensive strategy to conserve the desert tortoise, Mohave ground squirrel, and over 100 sensitive plants, animals, and natural communities. The plan provides for a streamlined program for complying with the requirements of the California and federal Endangered Species Acts. It encompasses a 9,357,929-acre (14,621-square mile) planning area located to the north of the Los Angeles metropolitan area and applies to public and private land (U.S. Department of the Interior 2004).

Palmdale Native Desert Vegetation Ordinance

PMC Chapter 14.04, Joshua Tree and Native Desert Vegetation Preservation, establishes regulations and standards to preserve desert vegetation in the City. This ordinance is designed to protect western Joshua trees and California Junipers in the City. Joshua Trees and California Junipers both provide a unique natural desert aesthetic to the community, which the City aims to maintain. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission's vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the Palmdale Municipal Code. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW.

County of Los Angeles General Plan

The County of Los Angeles General Plan Natural Environment element provides the following policies and specific actions related to biological resources. Although the proposed Plan would not be subject to the County's General Plan policies, the following policies from the County of Los Angeles General Plan Natural Environment element pertain to biological resources in unincorporated parts of the Planning Area:

- **Policy C/NR 3.1:** Conserve and enhance the ecological function of diverse natural habitats and biological resources.
- **Policy C/NR 3.2:** Create and administer innovative County programs incentivizing the permanent dedication of SEAs and other important biological resources as open space areas.
- **Policy C/NR 3.3:** Restore upland communities and significant riparian resources, such as degraded streams, rivers, and wetlands to maintain ecological function—acknowledging the importance of incrementally restoring ecosystem values when complete restoration is not feasible.
- **Policy C/NR 3.6:** Assist state and federal agencies and other agencies, as appropriate, with the preservation of special status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs.
- **Policy C/NR 3.7:** Participate in inter-jurisdictional collaborative strategies that protect biological resources.

4.4.3 Impact Analysis

Significance Thresholds

Based on Appendix G of the *CEQA Guidelines* a project may be deemed to have a significant impact on biological resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service
3. Have a substantial adverse effect on State or Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
4. Interfere substantially (i.e., direct/indirect reduction) with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
6. Conflict with the provisions of an adopted Habitat Preservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan

Methodology

The following impact analysis is based on available literature regarding the existing biological resources within the Planning Area. Impacts on biological resources were assessed using significance criteria from federal, State, and local regulations. Impacts to flora and fauna may be determined to be significant even if they do not directly affect rare, threatened, or endangered species because development carried out under the proposed Plan may result in indirect impacts to species.

CEQA Statutes, Public Resource Section 21001 (c) states that it is the policy of the State of California to “[p]revent the elimination of fish and wildlife species due to man’s activities, insure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history.” Impacts to biological resources are assessed using impact significance criteria encompassing *CEQA Guidelines* and federal, State, and local plans, regulations, and ordinances.

a. Project and Cumulative Impacts

Threshold 1:	Would the Plan have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
Threshold 2:	Would the Plan have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?

Impact BIO-1 DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD HAVE THE POTENTIAL TO ADVERSELY AFFECT SPECIAL-STATUS SPECIES, INCLUDING NESTING BIRDS, OR THEIR HABITAT. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Areas that may provide habitat for special-status species in the Planning Area are primarily located in SEAs. Based on the review of applicable databases, 32 special-status animal species and 43 special-status plant species have been observed or have the potential to occur in the 9-quadrangle search area surrounding the Planning Area, as detailed in Appendix C. These include the desert tortoise and Mohave ground squirrel. Generally, these species are associated with desert scrub

habitats. Ornamental trees and vegetation in the Planning Area have the potential to support nesting birds that are protected under the Migratory Bird Treaty Act (MBTA) and/or California Fish and Game Code. In addition, the Planning Area is located approximately 1.5 miles south of the Prime Desert Woodland Preserve and 2 miles south of the Rawley Duntley Park, which contain Joshua tree woodland habitat. Potential impacts such as loss of habitat through vegetation removal or disturbance could occur if construction activities occur during nesting bird season (generally February 1 – September 15). These impacts would be potentially significant.

The proposed Plan designates Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona Mountains, and secondary ridges as hillsides. Development of these hillside areas is governed by PMC Chapter 17.100, *Hillside Management*. The General Plan does not facilitate new areas of development within hillsides. Habitat for special-status species in hillside area would not be affected by the development under the proposed Plan because no changes to the current land use designations that would accommodate development in this area are proposed.

The proposed Plan does not include changes to existing Open Space land use designations, including along creeks and waterways in the Planning Area. Therefore, the proposed Plan would not facilitate permanent development in riparian vegetation along these creeks.

Under the proposed Plan, development that could alter biological habitats could occur in portions of the Planning Area, but all development would be subject to the provisions of the various federal and State natural resources regulations discussed in Section 4.4.2, *Regulatory Setting* and their respective permitting processes. These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found. Plan goals and policies that would encourage the conservation and protection of public open space and natural resources and reduce potential impacts to special-status species and sensitive habitats include the following:

- **Goal CON-1: Protect Significant Ecological Areas in and around the city, including, but not limited to, sensitive flora and fauna habitat areas.**
 - **Policy CON-1.1: Endangered species protection.** Ensure local compliance with the California Endangered Species Act and the Federal Endangered Species Act (ESA).
 - **Policy CON-1.2: Joshua and Juniper trees.** Continue enforcing the City’s Native Vegetation Ordinance to protect western Joshua Trees and Juniper Trees.
 - **Policy CON-1.3: West Mojave Plan.** Comply with the required implementation of the West Mojave Plan for protection of desert tortoise and Mohave ground squirrel.
 - **Policy CON-1.4: Significant ecological areas.** Identify and preserve to the greatest extent feasible significant ecological areas (SEA’s) as shown in Figure 11.3. Areas to consider for open space preservation include, but are not limited to, Tejon Park, Barrel Springs Southern Trailhead, and the Una Lake area
 - **Policy CON-1.5: Preserve ecological resource areas.** Preserve natural drainage courses and riparian areas where ecological resources exist in significant concentrations.
 - **Policy CON 1-6: Increase conservation areas.** Coordinate with state agencies to help achieve the goals of 30x30 to protect 30% of California’s land by 2030 by identifying optimal sites for land conservation.
 - **Policy CON-1.7: Wetland and floodplain areas.** Solicit and utilize all available sources of local, regional, state and federal funds to acquire significant wetland areas and floodplains

to minimize disturbance and prevent damage from erosion, turbidity, siltation, a loss of wildlife and vegetation, or the destruction of the natural habitat.

- **Goal CON-2: Preserve designated natural hillsides and ridgelines in the Planning Area, to maintain the aesthetic character of the Antelope Valley.**
 - **Policy CON-2.4: Development in suitable locations.** Facilitate development in more suitable locations while retaining significant natural slopes and areas of environmental sensitivity as natural open space.
- **Goal CON-3: Plan for safe operations of mineral resource extraction areas and reduce unreasonable impacts.**
 - **Policy CON-3.1:** Reduce mineral resource extraction impacts. Reduce impacts to human and environmental health caused by mineral resource extraction including:
 - Ground water contamination
 - Removal or demise of sensitive Ecological Areas of flora and fauna
 - Excessive noise or dust
- **Goal CON-9: Promote community design that reflects Palmdale’s history and preserves Palmdale’s cultural resources.**
 - **Policy CON-9.3: Locally appropriate landscape design.** Preserve the natural heritage of the region through landscape design by ensuring the local stock of native trees and vegetation is replenished and protected.

Implementation of these goals and policies would ensure that projects carried out under the proposed Plan would be completed in accordance with protecting and preserving SEAs. While these goals and policies generally aim at protecting special-status species, if vegetation and trees are to be trimmed or removed during project construction or if construction would occur near trees and vegetation, nesting birds could be impacted. Therefore, impacts related to nesting birds would be potentially significant and Mitigation Measure BIO-1 would be required for projects where mature trees and other habitat are present and construction activities are scheduled from early spring to late summer. With implementation of Plan goals and policies and Mitigation Measure BIO-1, potential impacts to special-status species and sensitive habitat would be reduced to a less than significant level.

Mitigation Measures

BIO-1 Pre-Construction Nesting Bird Surveys

To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) (~~February 1 through August 31~~). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than three days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using

binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

Significance After Mitigation

Implementation of Mitigation Measure BIO-1 would reduce potential impacts to nesting birds and associated habitat to a less than significant level by requiring pre-construction surveys and avoidance measures.

Threshold 2: Would the Plan have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Threshold 3: Would the Plan have a substantial adverse effect on state or federally protected wetlands (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Impact BIO-2 PROJECTS CARRIED OUT UNDER THE PLAN MAY ADVERSELY AFFECT RIPARIAN HABITAT OR OTHER SENSITIVE NATURAL COMMUNITIES DURING PROJECT CONSTRUCTION. IMPLEMENTATION OF FEDERAL, STATE, AND OR LOCAL POLICIES (INCLUDING PLAN POLICIES) WOULD ENSURE THAT RIPARIAN HABITAT AND WETLANDS ARE NOT SIGNIFICANTLY IMPACTED. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As stated in Section 4.3.1, *Environmental Setting*, riparian habitats have been recorded in and around the Planning Area. According to the National Wetlands Inventory database (see Figure 4.4-2), Lake Palmdale in the southern portion of the Planning Area is the primary potential jurisdictional feature. Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash in the southeastern portion of the Planning Area are designated as Freshwater Ponds (USFWS 2022). Development in the Planning Area, along with other sites near or bisected by waterways and other tributaries and drainages throughout the Planning Area, may be subject to USACE, CDFW, and RWQCB permitting requirements.

Under the Plan, new development would generally result from re-use of properties, infill development on vacant lots, conversion of uses in response to market demand (e.g., mixed use developments), and more intense use of land in defined areas. While most development carried out under the Plan would be infill development in already urbanized areas not near wetlands or waterways, development could reasonably occur in undeveloped areas due to the significantly undeveloped nature of the Planning Area. Therefore, a jurisdictional delineation would be required in accordance with CWA Section 404 for development that would occur in areas near wetlands or waterways. More specifically, any proposed development in areas identified as jurisdictional waters and/or wetlands, streambed/banks, or riparian vegetation would be subject to the permit requirements of the USACE, RWQCB, and CDFW, pursuant to Section 404 of CWA and the Porter-

Cologne Water Quality Control Act. Actual jurisdictional areas are determined by the State and federal authorities at the time that permits are requested.

Development in or adjacent to sensitive habitats could result in potential direct impacts through removal of vegetation, filling of wetland habitat, compaction of soils, and/or indirectly through dust and vegetation thinning. As stated in PMC Section 8.04.265, Chapter 70, *Excavation and Grading*, the issuance of a grading permit by the building official or City Engineer for ministerial and discretionary projects requires obtaining other permits required by State or federal agencies. These include but are not limited to streambed alteration permits from the CDFW and permits for grading in the vicinity of wetlands and certain watercourses from the USACE. These permit clearances may also be required as conditions of approval for grading work to commence. Approval of permits also requires findings that the proposed grading will not result in erosion, stream sediment, or other adverse off-site effects to riparian habitat.

On sites one acre or larger, implementation of the required Stormwater Pollution Prevention Plan (SWPPP) Best Management Practices (BMPs), in accordance with the NPDES construction general permit, during project construction would reduce the potential for eroded soil and any contaminants attached to that soil to contaminate a waterbody following a storm event. Additionally, PMC Section 15.28.004 provides design standards to address erosion and sedimentation. Future developments carried out under the proposed Plan would employ low impact development techniques and stormwater control measures as outlined in PMC Section 14.05.200 to reduce, capture, and treat stormwater pollution to reduce impacts to waterways, including water quality. Impacts related to drainage and pollution are further discussed in Section 4.10, *Hydrology and Water Quality*.

The proposed Plan contains goals and policies that would further reduce impacts to riparian and wetland habitats. The following goals and policies address development in or near riparian habitat:

- **Goal CON-1: Protect Significant Ecological Areas in and around the city, including, but not limited to, sensitive flora and fauna habitat areas.**
 - **Policy CON-1.5: Preserve ecological resource areas.** Preserve natural drainage courses and riparian areas where ecological resources exist in significant concentrations.
 - **Policy CON-1.7: Wetland and floodplain areas.** Solicit and utilize all available sources of local, regional, state and federal funds to acquire significant wetland areas and floodplains to minimize disturbance and prevent damage from erosion, turbidity, siltation, a loss of wildlife and vegetation, or the destruction of the natural habitat.
- **Goal CON-4: Plan for mineral resource extraction site remediation and end users.**
 - **Policy CON-4.1: Mining reclamation plan.** Require mining operators to establish a reclamation plan that indicates what the various properties will be used for when mining operations cease, what the target land use designation and zoning shall be for the reclaimed lands, and how the transition to new uses shall be implemented.
 - **Policy CON-4.3: Plan remediation and restoration of sites.** Plan for remediation and restoration of extraction sites after operations cease, including adequate areas for groundwater recharge.
- **Goal CON-5: Protect the quality and quantity of local water resources.**
 - **Policy CON-5.1: Ground water recharge.** Ensure that ground water supplies are recharged and protect natural recharge areas such as the Little Rock and Big Rock Washes, and

Amargosa and Anaverde Creeks from pollutants or other materials, which might degrade groundwater supplies.

- **Policy CON-5.4: Flood control measures.** Maximize groundwater recharge capabilities with flood control measures.
- **Goal CON-6: Minimize the impacts of urban development of groundwater supplies.**
 - **Policy CON-6.5: Monitoring and coordination.** Coordinate with local water agencies to monitor ground water levels, State water allocations and development approvals, to assure that development does not outpace long-term water availability.
- **Goal CON-7: Maintain and further the City's commitment to long-term water management within the Antelope Valley by planning for the conservation and managed use of water resources, including groundwater, imported water, and reclaimed water.**
 - **Policy CON-7.1: Reclaimed water irrigation.** Assess and implement, when feasible, reclaimed water for landscape irrigation.
 - **Policy CON-7.2: Water run-off capture.** Work with local water purveyors to assess the potential for capturing local run-off and utilization of imported water (water banking) for groundwater recharge within the Planning Area.
 - **Policy CON-7.3: Retain recharge areas.** Through the land use planning process, ensure that important recharge areas are retained.
 - **Policy CON-7.4: Water management.** Continue to seek out long-range water management techniques as new technology is developed.
 - **Policy CON-7.5: Implementation.** Promote implementation of systems that are feasible and appropriate to the Planning Area.
 - **Policy CON-7.6: Water recycling.** Encourage residents and businesses to recycle water where feasible, and where water recycling does not result in health and safety concerns,.
 - **Policy CON-7.7: Water sources.** Participate in regional efforts to retain imported water allocations and seek out other sources as they become available.

Implementation of these goals and policies would reduce direct impacts to riparian habitat during construction and operation by reducing direct and indirect modifications to creeks, embankments, and other waterways in the Planning Area. Furthermore, if jurisdictional waters occur on any site developed under the proposed Plan, jurisdictional delineation and RWQCB permits would be required that would address potential impacts to those waters. Adherence to state and federal regulations, the PMC, and implementation of Plan goals and polices would reduce impact to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 4: Would the Plan interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Impact BIO-3 DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD AVOID IMPACTS TO WILDLIFE MOVEMENT CORRIDORS BY CONSERVING NATURAL AREAS IN THE PLANNING AREA, AS DIRECTED BY POLICIES IN THE PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

While most development carried out under the Plan would be infill development in already urbanized areas, development could reasonably occur in undeveloped areas due to the significantly undeveloped nature of the Planning Area, including riparian corridors (such as Amargosa Creek and Anaverde Creek) that may provide corridors for wildlife movement, including migratory birds and California red legged frog. If construction occurs during migration periods in or near habitat and breeding habitat, impacts would be potentially significant.

The California Essential Habitat Connectivity Project does not show any areas inside Palmdale’s city limits that are in an essential connectivity area, a natural landscape block, or an interstate connection (CDFW 2021), but SEAs in the Planning Area have more intact habitat that may facilitate and allow for the movement of wildlife and may connect to habitat areas outside the Planning Area such as the San Gabriel Mountains and Tehachapi Mountains. There are also habitat patches and SEAS surrounding the Planning Area that can provide suitable spaces for migrating wildlife, especially birds and more mobile species, to utilize as they travel. For example, the Prime Desert Woodland Preserve, Rawley Duntley Park within the City of Lancaster, and vacant land to the west and northwest of the Planning Area contain desert scrub and individual Joshua trees and can potentially harbor migrating species. As noted in Plan Goal CON-1 and its associated policies listed under Impact BIO-1, habitat preservation and endangered species protection is a priority for the City. Riparian corridors, which provide corridors for resident and migratory species through the Planning Area, would be protected by implementation of Plan policies listed under Impact BIO-1, including Policy CON-1.1.

In summary, development carried out under the Plan would not impact any established wildlife corridors, and with implementation of Mitigation Measure BIO-1 to prevent impacts to migrating and nesting birds, the Plan would not interfere substantially with the movement of wildlife species. Impacts would be less than significant with mitigation.

Mitigation Measures

See Mitigation Measure BIO–1.

Significance After Mitigation

With implementation of Mitigation Measure BIO-1, impacts to wildlife corridors and species would be less than significant.

Threshold 5: Would the Plan conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact BIO-4 WITH IMPLEMENTATION OF PLAN GOALS AND POLICIES AND REGULATIONS CONTAINED IN THE PALMDALE MUNICIPAL CODE, THE PLAN WOULD NOT CONFLICT WITH AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN. THERE WOULD BE NO IMPACT.

Some development carried out under the proposed Plan could occur on sites that have mature street trees along their boundaries and/or mature trees on the site. Removal of these trees would be subject to the provisions of PMC Chapter 8.44, which addresses minimum obligations by a property owner with respect to the maintenance of street trees, including damage to any septic tank, public sewer, water main, electrical, gas, or telecommunications utility facility. Development facilitated by the proposed project would be required to comply with the PMC Chapter 8.44 – *Maintenance of Steet Trees*. The Ordinance further defines street trees permitted and the owner’s civil liability to maintain trees. PMC Section 8.44.020 addresses tree preservation, including maintaining tree cover on private lands and ensuring new development projects include tree planting in their landscape plans submitted and reviewed as part of the project permitting process.

Additionally, goals and policies included in the proposed Plan are designed to protect trees and other vegetation in Palmdale as follows:

- **Goal CON-1: Protect Significant Ecological Areas in and around the city, including, but not limited to, sensitive flora and fauna habitat areas.**
 - **Policy CON-1.2: Joshua and Juniper trees.** Continue enforcing the City’s Native Vegetation Ordinance to protect western Joshua Trees and Juniper Trees.

PMC Chapter 14.04 prohibits the removal of any desert vegetation unless a native desert vegetation removal permit has been issued from the City. Section 14.04.040 protects desert vegetation and allows for its removal only if it creates an imminent threat to public health or safety. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission’s vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the PMC. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW. Development carried out under the proposed Plan would be required to adhere to City ordinances and CDFW requirements protecting desert vegetation such as Joshua Trees, which would ensure that such vegetation is not damaged or removed unless properly permitted.

Compliance with applicable regulations and implementation of Plan goals and policies would prevent potential conflicts with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be no impact.

Mitigation Measures

No mitigation measures are required.

Threshold 6: Would the Plan conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

IMPACT BIO-5 THE PLANNING AREA IS IN THE WEST MOJAVE COORDINATED MANAGEMENT PLAN PLANNING AREA. IMPACTS TO AREAS IDENTIFIED IN THE WEST MOJAVE COORDINATED MANAGEMENT PLAN STRATEGY WOULD BE REDUCED THROUGH COMPLIANCE WITH CONSERVATION STRATEGIES CONTAINED IN GOALS AND POLICIES OF THE PROPOSED PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Planning Area is in the Conservation Plan planning area, which is administered by the Bureau of Land Management (BLM). The Conservation Plan proposes several amendments to the BLM's California Desert Conservation Area Plan. The Conservation Plan presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel, and nearly 100 other sensitive plants and animals and the natural communities of which they are a part, and provides a streamlined program for complying with the requirements of the CESA and FESA.

Most of the Conservation Areas identified in the Conservation Plan are located outside Palmdale city limits but within the SOI. As discussed in Section 2, *Project Description*, no development is proposed outside city limits but within the SOI as part of the Plan. The following Conservation and Open Space Element policies of the proposed Plan would further ensure that impacts resulting from conflicts with the Conservation Plan are taken into consideration and reduced or minimized and ensure the Plan is consistent with the Conservation Plan:

- **Goal CON-1: Protect Significant Ecological Areas in and around the city, including, but not limited to, sensitive flora and fauna habitat areas.**
 - **Policy CON-1.3: West Mojave Plan.** Comply with the required implementation of the West Mojave Plan for protection of desert tortoise and Mohave ground squirrel.

Furthermore, future development subject to discretionary approval would be required to undergo project-specific environmental review pursuant to CEQA, which requires an evaluation of impacts with respect to conflict with the Conservation Plan and mitigation for significant impacts. Even projects not subject to discretionary approval would be subject to the City's standard development review process, during which the City could evaluate such projects for consistency with the Conservation Plan and applicable Plan policies. As future projects are planned, they must adhere to applicable Plan policies; therefore, future development would not conflict with the Conservation Plan, and impacts associated with growth forecast under the General Plan would be less than significant.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur. Therefore, the analysis of Plan impacts also constitutes the cumulative analysis, at least at the level of the Planning Area discussed in this chapter of the EIR.

While the preceding impact discussion focuses on potential impacts of the proposed Plan on biological resources, the following cumulative impacts discussion focuses on potential cumulative impacts of the proposed Plan in a more regional context.

Significant adverse cumulative biological resources impacts may occur where the construction or operation of cumulative projects would encroach into areas containing sensitive biological resources, affect the movement of wildlife species, or affect the functionality of a planned conservation area. For further discussion of the cumulative project setting and lists of the development status of major approved projects and approved specific plans, see Section 3.5, *Cumulative Project Setting* of this EIR. Future development in the Planning Area that could impact biological resources is considered in the impact analysis provided in Section 4.4.4 of this EIR. This cumulative extent is used to evaluate potential direct and indirect, and permanent and temporary impacts to special-status species, sensitive habitats, wildlife movement, local policies and ordinances protecting biological resources, and approved habitat conservation plans within the context of regional diminishment of these resources.

Potential biological resources impacts resulting from cumulative development would include direct and indirect impacts to sensitive/special status species or their habitat; impacts to riparian, wetland, or other sensitive natural communities; or interference with wildlife movement. Similarly, development pursuant to other local and regional planning efforts within the cumulative impact analysis area would impact these resources, and as a result, cumulative impacts would be significant. Due to the potential direct and indirect impacts that may occur, the proposed Plan would contribute considerably to this significant cumulative impact.

Mitigation Measure BIO-1 would reduce impacts from reasonably foreseeable development under the Plan by requiring project applicants to avoid, minimize, or mitigate for impacts to nesting birds. Thus, the Plan would not make a substantial contribution to cumulatively considerable impacts. Therefore, cumulative impacts related to sensitive species and habitats would be less than significant.

Projects carried out under the Plan and other projects within the cumulative impact analysis area would be required to comply with ordinances and requirements protecting biological resources, such as the PMC in the city of Palmdale, and other ordinances and regulations in areas outside the Planning Area, as described in Section 4.4.3, *Regulatory Setting*.

The proposed Plan, for all the reasons discussed above, including the fact that it would not have any impacts to biological resources that could not be mitigated to a less than significant level, would not make a substantial contribution to any cumulative biological resources impact.

4.5 Cultural Resources

This section analyzes the potential impacts of the Plan on cultural resources. Impacts to historical resources, archaeological resources, and human remains are addressed herein. Data used to prepare this section was also sourced from the California Office of Historic Preservation’s (OHP) Historic Property Data File. The analysis of tribal cultural resources is included in Section 4.18, *Tribal Cultural Resources*.

4.5.1 Cultural Setting

Prehistoric Context

Over the past century, various chronological sequences have been proposed by archaeologists to describe cultural change within southern California (Jones and Klar 2007; Moratto 2004). Most recently, Sutton et al. (2007) devised an updated Mojave Desert cultural history, dividing it into four temporal periods: Pleistocene, Early Holocene, Middle Holocene, and Late Holocene (Table 4.5-1).

Table 4.5-1 Mojave Desert Chronology (after Sutton et al. 2007:236)

Cultural Complex	Period	Approximate Dates
Pre-Clovis	Pleistocene	Pre-10,000 cal B.C.
Paleo-Indian		10,000-8000 cal B.C.
Lake Mojave	Early Holocene	8000-6000 cal B.C.
Pinto	Middle Holocene	7000-3000 cal B.C.
Gypsum	Late Holocene	2000 cal B.C.-cal A.D. 200
Rose Spring		cal A.D. 200-1100
Late Prehistoric		cal A.D. 1100-Contact

Pleistocene Period (ca. 10,000 to 8000 B.C.)

The climate of the Pleistocene Period in the Mojave Desert is generally characterized as cool and wet (Sutton et al. 2007: 231). During this time, the Antelope Valley featured several pluvial lakes such as Lake Thomson and Lake China. The presence of lakes generally indicates an environment with plentiful food and water resources suitable for early human habitation, especially as compared to the harsher desert environment now present. However, claims of pre-Clovis archaeological sites in the Mojave Desert remain controversial and generally not accepted by most professional archaeologists. Nonetheless, it is possible that such occupation did occur and sites with reliable early dates may yet be found, as has happened elsewhere in the Americas.

The Clovis Complex is the earliest and only Paleo-Indian cultural complex widely accepted in the Mojave Desert (Sutton et al. 2007:233-234). This complex is predominantly defined by large lanceolate-shaped bifaces with fluting, prepared to thin and flatten the base of the artifact for hafting. Other tools associated with the Clovis Complex include large side scrapers, blades derived from prepared cores, and a mixture of expedient flaked tools (Justice 2002:73). Paleo-Indian populations associated with fluted point technology consisted of small, mobile groups who hunted and gathered near permanent sources of water such as pluvial lakes. The tools associated with

these populations are most commonly found in the drainage basins of the pluvial lakes (Sutton et al. 2007: 234).

Fluted points have traditionally been interpreted as tools used for hunting Pleistocene megafauna due to their clear association with megafauna remains in the Great Plains and Southwest, but most fluted points found in California have lacked corroborating Pleistocene radiocarbon dates (Arnold et al. 2004). One exception was found during excavations at China Lake in the early 1970s, where fluted points associated with burned, extinct megafaunal material were uncovered (Davis 1975). As Davis and Panlaqui (1978:31) noted, the sites at China Lake demonstrate that Paleo-Indians exploited many available resources, not just megafauna.

Evidence of terminal Pleistocene and early Holocene habitation in the Antelope Valley has remained sparse until recently. Evidence of late Pleistocene occupation was identified on the southern slopes of the Tehachapi Mountains near Cottonwood Creek in the form of a basal fragment of a fluted Clovis projectile point (Glennan 1971, 1987). Basgall and Overly (2004) have found evidence of occupation near Pleistocene China Lake and Fort Irwin yielding radiocarbon dates from 9,500-8,000 ybp (years before present).

Locus KER-4050 of the Bean Spring Archaeological Site Complex (KER-2821/H), located in the Antelope Valley to the northwest of the Planning Area, yielded two *Tivela stultorum* clam shell beads on the surface of the site. One of the beads submitted for radiocarbon assay produced one of the earliest known calibrated dates attained in the Antelope Valley with a date range between 9020-9430 Radiocarbon Years Before Present (RCYBP) and temporally diagnostic artifacts supporting this early date can be identified (Way 2009).

Early Holocene (8000 to 6000 B.C.)

The onset of the early Holocene was marked by warmer temperatures, reduced precipitation, and the eventual drying up of the pluvial lakes of the Pleistocene. These changes are believed to have caused an irregular distribution of resources available to the early Holocene inhabitants (Sutton et al. 2007:237). The shallow lakes and marshes of the Mojave Desert during this period were biologically very productive but surrounded by desert vegetation typical of later time periods, initially dominated by white bursage and later creosote bush (Grayson 1993:199-200). The Lake Mojave Complex is the only clear complex in the region during this time and reflects an increasingly diversified subsistence strategy that was necessary for successful adaptation to climatic changes.

The Lake Mojave Complex is identified primarily by heavy, stemmed projectile points of the Great Basin Stemmed series such as Lake Mojave and Silver Lake. Other tools include bifaces, steep-edged unifaces, crescents, the occasional cobble-core tool, and, infrequently, ground stone implements (Justice 2002:91). Settlement organization components include extensive residential accumulations, workshops, and small camps containing handfuls of tools (Sutton et al. 2007: 237).

While earlier research presumed a dependence on lacustrine subsistence strategies, recent studies have found Lake Mojave Complex sites in other contexts (e.g., Basgall 2005; Basgall and Jurich 2006; Giambastiani and Berg 2008:14). Sutton et al. (2007:237) stated that the Lake Mojave assemblages included tools that are “consistent with long-term curation and transport.” The presence of exotic lithic materials and marine shell beads in Lake Mojave Complex assemblages further supports the assertion that these people were highly mobile and possibly traded with groups over long distances.

The Bean Spring Archaeological Site Complex (KER-2821/H) dates to at least as early as the Early Holocene, as indicated by the presence of Lake Mojave artifact types. Various loci within the site indicate habitation during each Mojave Desert prehistoric temporal periods. Artifact concentrations

suggest that the springs and remnant marshlands of Pleistocene Lake Thompson offered inhabitants a wide variety of resources for prolonged occupation. The presence of two *Tivela* sp. beads and *Olivella biplicata* disc and spire-removed beads indicate that interaction reached at least as far as the Santa Barbara Channel Area. Temblor Range chert indicates trade networks reaching well into the western San Joaquin Valley (Way 2009).

Middle Holocene (7000 to 3000 B.C.)

The middle Holocene climate was generally more arid than periods before and after, but experienced multiple oscillations between wetter and drier conditions throughout its 4000 years. The desiccation of the lakes and marshes of the Pleistocene and early Holocene required the region's inhabitants to rely on streams and springs for water, resulting in lower occupational densities (Aikens 1978; Basgall 2000; Cleland and Spaulding 1992; Sutton 1996; Warren 1984). As average temperatures and aridity increased, peaking between 6000 and 5000 B.C., settlement patterns adapted, including a shift to upland settings where sources of water still existed and changes in tool assemblage content and diversity marked the emergence of the Pinto Complex (Sutton 1996).

The Pinto Complex was defined by Campbell and Campbell (1935) based on their work at the Pinto Basin site, but it has a wider distribution throughout the Mojave Desert than previous complexes. During the latter part of the Early Holocene, archaeological data indicate that the Pinto Complex overlaps the Lake Mojave Complex (Sutton et al., 2007:237). The Pinto Complex reflects shifts in subsistence patterns and adaptation to the shriveling of the Pleistocene lakes, including a greater emphasis on the exploitation of plants, with the continued pursuit of artiodactyls and smaller game. The broad distribution of this complex implies a high degree of residential mobility. The Bean Spring site shows evidence of occupation during the Pinto period in at least one locus (Way 2009). Pinto occupation appears to be associated with springs and extinct rivers and is most commonly identified in the northern portion of the Antelope Valley (Norwood 1987).

The hallmarks of the Pinto Complex tool assemblage include concave base and bifurcate base projectile points with strong basal ears and more gradual shoulders (Justice 2002:126; Zyniecki 2003:12). Other diagnostic artifacts of this complex include domed and keeled scrapers, large and small leaf-shaped bifaces, core/cobble tools, large metates and milling slabs, and shaped and unshaped handstones.

Near the end of the middle Holocene the climate became increasingly hotter and arid. Very few sites date to during this time, between 3,000 and 2,000 B.C., suggesting that populations were very low. It is possible that some areas were abandoned during this hot period (Sutton et al. 2007:241).

Late Holocene (2000 B.C. to European Contact)

The climate of the prehistoric late Holocene was similar to current conditions; cooler and more moist than the middle Holocene, but not as cool and moist as the early Holocene. The climate remained highly variable with periods that included the Mojave lakes refilling to levels of earlier high stands, contrasted with at least two major droughts, circa A.D. 892 to 1112, and circa A.D. 1209 to 1350 (Stine 1994). A cooler and wetter period occurred between 600 and 150 years ago (Cleland and Spaulding 1992:4). These climatic changes at the onset of the late Holocene once again resulted in modified subsistence strategies and correlating tool kits of three progressive cultural complexes: Gypsum Complex, Rose Spring Complex, and Late Prehistoric Complex (or period).

Dart-point size projectile points including notched or eared (Elko), concave base (Humboldt), and small-stemmed (Gypsum) types characterized the projectile points of the Gypsum Complex. In addition to these diagnostic points, Gypsum Complex sites included leaf-shaped points, rectangular-based knives, flake scrapers, drills, and occasionally, large scraper planes, choppers, and hammerstones (Warren 1984:416). Manos and milling stones were common, but the mortar and pestle were also introduced during this period. Other artifacts found at Gypsum Complex sites include split-twig animal figurines, Olivella shell beads, and Haliotis beads and ornaments, which are indicative of trade with people of the southern California coast and southern Great Basin. The inhabitants of the Mojave Desert exported high quality locally available cryptocrystalline tool stone such as obsidian, chalcedony, and chert in exchange for exotic materials.

By A.D. 200, a slightly cooler climate appears to have provided for an increased population, based on a higher frequency of archeological sites. The Rose Spring Complex was present from approximately A.D. 200 to 1100, with regional temporal variations known as the Saratoga Springs, Haiwee, or Amargosa periods (Sutton 1996; Sutton et al. 2007:236). A Rose Spring Series projectile point was found at Locus A of the Bean Spring site (Way 2009). The smaller Rose Spring projectile points replaced the dart-size points of previous complexes and heralded the introduction of the bow and arrow (Yohe 1998). The bow and arrow provided its user a way to rapidly fire multiple projectiles during hunting or warfare and from a position of relative security compared to the atlatl or spear. This technological innovation appears to correspond with the onset of the Numic expansion westward to the coast, which some researchers believe started from southeastern California (Bettinger and Baumhoff 1982; Grayson 1993). Bedrock milling features supplement portable milling stones in villages and ancillary sites within the California deserts.

The Late Prehistoric period (circa A.D. 1100–1769) corresponds to the introduction of ceramic artifacts in the Mojave Desert region as well as replacement of Rose Spring projectile points with even smaller Desert Side-notched points and Cottonwood series points, an example of which was identified at the Bean Spring site (Way 2009). The mortar and pestle became more widespread during this period and evidence of food storage facilities becomes increasingly common. In the central Mojave Desert, the Mojave River became a primary focus of occupation, and trade networks increased along the Mojave River and over the San Gabriel Mountains (Sutton 1996).

Archeological evidence left by highly mobile hunter-gatherers in the Mojave Desert during the Late Prehistoric period is typified by sparse scatters of flaked stone, ground stone, and ceramic artifacts and features such as hearths, rock rings, and trails.

Historical Setting

Post-Contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States.

Spanish Period (1769 – 1822)

In 1542, Juan Rodriguez Cabrillo led the first European expedition to observe what is now called southern California (Bean and Smith 1978). For more than 200 years, Cabrillo and other Spanish,

Portuguese, British, and Russian explorers sailed the Alta (upper) California coast and made limited inland expeditions, but they did not establish permanent inland settlements (Bean 1968, Rolle 2003).

Gaspar de Portolá and Franciscan Father Junípero Serra established the first Spanish settlement along the west coast of the modern United States in what was known as Alta California at Mission San Diego de Alcalá in 1769. Mission San Diego was the first of 21 missions established by the Spanish between 1769 and 1823. The missions were responsible for controlling the native populations as well as converting the population to Christianity (Engelhardt 1927a). No Spanish missions were established in the Antelope Valley, but local Native Americans were influenced by other native populations migrating to the area, driven from their homelands by the encroaching Spanish.

Although Portolá may have encountered a group of Tataviam during the 1769 explorations, the first known Spanish explorers to enter the Antelope Valley were a group of soldiers led by Pedro Fages in 1772. In 1776, Friar Francisco Garcés traveled through the valley coming from the Colorado River (Hoover et al. 2002:321). During the Juan Batista de Anza expedition, Friar Francisco Garcés reported “interaction with the Kitanemuk but very little historical information has been recorded on them” (Pacific Legacy, Inc. 2008:14).

During this period, Spain also deeded a limited number of ranchos to prominent citizens and soldiers, few in comparison to the following Mexican Period. To manage and expand herds of cattle on these large ranchos, colonists enlisted the labor of the surrounding Native American population (Engelhardt 1927b). The increased local population density and contact with European-brought diseases significantly reduced the Native American population (McCawley 1996). Native American populations in the Antelope Valley were less affected by the missions and the problems associated with European settlement of California. However, in some cases, individuals were taken from their tribes to be educated at one of the missions before being sent back (Morgan 1914). By 1810, for example, the Tataviam “almost all had been baptized at the San Fernando Mission” located approximately 28 miles southwest of the Palmdale Civic Center.

Mexican Period (1822 – 1848)

The Mexican period commenced when news of the success of the Mexican Revolution (1810-1821) against the Spanish crown reached California in 1822. This period was an era of extensive interior land grant development and exploration by American fur trappers west of the Sierra Nevada Mountains. The California missions declined in power and were ultimately secularized in 1834. The hallmark of the Mexican period was large ranchos deeded to prominent Mexican citizens, frequently soldiers, by the governor. These ranchos became important economic and social centers; however, no ranchos were claimed in the arid Antelope Valley. Rancho La Liebre, straddling present Los Angeles and Kern counties was the closest land grant located in the mountains west of the valley. Governor Pío Pico and his predecessors made more than 600 rancho grants between 1833 and 1846, putting most of the state’s lands into private ownership for the first time (Gumprecht 1999). Gold was found on Rancho San Francisco in 1842 at Placerita Canyon, the first to be found in California.

American Period (1848 – Present)

The American Period officially began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico \$15 million for conquered territory including

California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. In 1850, California was admitted as the 31st state.

The discovery of gold in the foothills east of Sacramento led to the California Gold Rush in 1848, despite the first California gold being discovered in Placerita Canyon near the San Fernando Mission in 1842 (Guinn 1977). Cattle ranches continued to dominate Southern California in the early American period, though droughts and increasing population resulted in farming and more urban professions. These new developments increasingly supplanted ranching through the late nineteenth century. By 1853, the population of California exceeded 300,000. Thousands of settlers and immigrants continued to move into the state, particularly after the completion of the transcontinental railroad in 1869.

During the Gold Rush, thousands of people traveled the Mojave River Trail from the east attempting to reach the fabled goldfields of California. The Mojave River Trail was called the Old Spanish Trail by Captain John C. Frémont, until he met a group of Native Americans northeast of Victorville who told Frémont they had lived along the Mojave River and the mountains to the north and traded with other indigenous peoples in the region along the Mojave River Trail (Frémont 1845:260).

The construction of the Southern Pacific Railroad in 1876 was a major development in the Antelope Valley and proved to be the foundation for development. By 1920, upward of 80 towns were founded in the Antelope Valley area. Most of these towns were located along the railroad. However, a major component of the economy was ranching and agriculture (County of Los Angeles Public Library 2013). Key themes in Antelope Valley history include transportation, mining, military use, and agriculture.

City of Palmdale

The Palmdale area was largely undeveloped prior to the completion of the Southern Pacific Railroad through the Antelope Valley. In 1886, farming families predominantly from the Midwest settled in the Antelope Valley, and, mistaking the region's native Joshua trees for palms, named the settlement Palmenthal. When drought in the valley's desert climate made many agricultural homesteads unviable, many settlers moved closer to the Southern Pacific Railroad Station in the present-day location of Palmdale's civic center. The completion of the Los Angeles Aqueduct in 1914 brought needed irrigation to the Antelope Valley which allowed for the cultivation of pears, apples, and alfalfa.

Palmdale remained a predominantly agricultural community until the growth of the aerospace sector during WWII. The town's proximity to Edwards Airforce Base, and the establishment of U.S. Air Force Plant 42 in 1953, made Palmdale a center of the U.S. aerospace industry. Plant 42 and the adjacent Los Angeles/Palmdale Regional Airport employ thousands of military personnel and aerospace workers and host manufacturing and flight test facilities for Northrop Grumman, Boeing, and Lockheed Martin.

Historical Resources in Palmdale

A review of the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and the California State Office of Historic Preservation Built Environment Directory, in addition to consultation with City staff, revealed there are five state-designated, and 14 locally recognized, historical resources located in Palmdale. Four of these resources are buildings located on the property of U.S. Air Force Plant 42 the other is a portion of the Southern Pacific Railroad along State Route 138. Each of these has been assigned a California State Office of Historic

Preservation status code or 2S2, meaning it was determined eligible for inclusion on the NRHP and is listed on the CRHR. Plant 42 is located on federal property within the City's boundaries. A series of Southern Pacific Railroad tracks have also been assigned a California State Office of Historic Preservation status code or 2S2. Fourteen structures are listed in the Palmdale General Plan, 1993, as recognized by the Antelope Valley Historical Society as historically significant, but the listed resources were not evaluated for eligibility for either the NRHP or the CRHR.

Archeological Resource Sensitivity

No record search or archeological surveys were conducted in the preparation of the Plan because individual project sites within the Planning Area have not been selected at this point, and these activities were not feasible due to the extent of the Planning Area.

4.5.2 Regulatory Setting

The regulatory background below offers an overview of federal, state, and local criteria used to assess historic significance, as well as Palmdale's existing regulatory process pertaining to development projects that may impact historical resources.

National Register of Historic Places

The National Register of Historic Places (NRHP) is an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment (36 Code of Federal Regulations [CFR] 60, Section 60.2). The National Park Service (NPS) administers the NRHP program.

The criterion for listing in the NRHP follows guidelines established by the NPS for determining the significance of properties. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that do the following:

1. Are associated with events that have made a significant contribution to the broad patterns of our history; or
2. Are associated with the lives of persons who are significant in our past; or
3. Embody the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; or,
4. Have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60, Section 60.3).

In addition to meeting any or all of the eligibility criteria listed above, properties must also possess historic integrity to be eligible for listing in the NRHP. Historic integrity is the ability of a property to convey its significance through "the essential physical features that enable it to convey its historic identity. The essential physical features are those features that define both why a property is significant... and when it was significant" (NPS 1995). The NPS defines seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. These qualities are defined as follows:

- Location is the place where the historic property was constructed or the place where the historic event occurred.

- Design is the combination of elements that create the form, plan, space, structure, and style of a property.
- Setting is the physical environment of a historic property.
- Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
- Feeling is a property's expression of the aesthetic or historic sense of a particular period of time.
- Association is the direct link between an important historic event or person and a historic property.

California Register of Historic Resources

A cultural resource could be considered significant if it is eligible for listing in the California Register of Historical Resources (CRHR). The CRHR helps government agencies identify, evaluate, and protect California's historical resources, and indicates which properties are to be protected from substantial adverse change (Public Resources Code [PRC] Section 5024.1[a]). The CRHR is administered through the State Office of Historic Preservation, which is part of the California State Parks system.

A resource is evaluated under four CRHR criteria to determine its historical significance. To be eligible for the CRHR, a resource must be significant at the local, state, or national level in accordance with one or more of the following criteria, as set forth in the CEQA Guidelines Section 15064.5(a)(3):

- (A) It is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage;
- (B) It is associated with the lives of persons important in our past;
- (C) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
- (D) It has yielded, or may be likely to yield, information important in prehistory or history.
[CEQA Guidelines Section 15064.5(a)(3)]

The CRHR also requires a resource to possess integrity, defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association."

Archaeological resources can sometimes qualify as "historical resources" (CEQA Guidelines Section 15064.5[c][1]). PRC Section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

- (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

- (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person. (PRC Section 21083.2[g])

Two other programs are administered by the State: California Historical Landmarks and California Points of Historical Interest. California Historical Landmarks are buildings, sites, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value, whereas California Points of Historical Interest are of local (city or county) significance. Resources listed as Landmarks or Points of Historical Interest are automatically considered eligible for listing in the CRHR.

State Health and Safety Code

State Health and Safety Code (HSC) Section 7050.5 (PRC Section 5097.9) contain provisions for the treatment of human remains contained in archaeological sites. Under HSC Section 7050.5, if human remains are discovered during any project activity, the county coroner must be notified immediately. If human remains are exposed, HSC Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. Construction must halt in the area of the discovery of human remains, the area of the discovery shall be protected, and consultation and treatment shall occur as prescribed by law. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the Native American Heritage Commission (NAHC) within 24 hours. NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased person so they can inspect the burial site and make recommendations for treatment or disposal.

Local

City of Palmdale Municipal Code

The City of Palmdale Municipal Code (PMC) does not include statutes regarding the preservation of cultural and historic resources.

4.5.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to cultural resources would be potentially significant if implementation of the Plan would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5
3. Disturb any human remains, including those interred outside of formal cemeteries

A “substantial adverse change” in the significance of a historical resource is defined as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (PRC Section

5020.1[q]). Further, according to CEQA Guidelines Section 15064.5(b)(2), the significance of a historical resource is “materially impaired” when a project:

- (A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or
- (B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources... or its identification in a historical resources survey... unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- (C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA. (CEQA Guidelines Section 15064.5[b][2])

According to CEQA Guidelines Section 15064.5(a), the term “historical resources” shall include the following:

- (1) A resource listed in, or determined to be eligible by, the State Historical Resources Commission, for listing in the CRHR (PRC Section 5024.1, Title 14 California Code of Regulations [CCR], Section 4850 et seq.).
- (2) A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in an historical resource survey meeting the requirements of PRC Section 5024.1(g), shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- (3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, may be considered to be a historical resource, provided the lead agency’s determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be “historically significant” if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1, Title 14 CCR, Section 4852), as described above under “Regulatory Setting.”

b. Project and Cumulative Impacts

Threshold 1: Would the Plan cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

Impact CUL-1 THE PLAN MAY CAUSE A SIGNIFICANT IMPACT TO HISTORICAL RESOURCES BECAUSE SITE PREPARATION, DEMOLITION, AND CONSTRUCTION ASSOCIATED WITH DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY CAUSE SUBSTANTIAL ADVERSE CHANGES IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE. HOWEVER, IMPLEMENTATION OF PLAN POLICIES AND IMPLEMENTATION ACTIONS INCLUDED IN THE CONSERVATION ELEMENT AND FURTHER MITIGATION WOULD REDUCE THIS IMPACT SIGNIFICANT BUT MITIGABLE.

Based on CEQA Guidelines Section 15064.5, future development carried out under the Plan would have a significant impact on historical resources if it would cause a substantial adverse change in the significance of a historical resource. Historical resources as defined by CEQA include properties eligible for listing on the NRHP, the CRHR, or a local register of historical resources. In addition, as explained in Section 15064.5, “[s]ubstantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.”

As discussed in Section 4.5.1, there are five resources determined eligible for the NRHP and listed in the CRHR. In addition to these known historical resources, there may be other yet unidentified resources which are eligible for inclusion in the NRHP or CRHR or for designation as a local Landmark. The Plan would guide the general distribution, location, and extent of the various land uses in the Planning Area. New residential, commercial, and industrial uses allowed under the Plan would be implemented by new development and the conversion of existing properties to new uses. Changes to the transportation network would include the redesign of streets and streetscapes to improve connectivity for all modes of transportation. The city’s historic downtown would be enhanced through the development of entertainment uses, a civic center, and public parks, while new midrise mixed-use development may emerge near the planned multimodal high-speed rail station.

The Plan includes a Conservation Element that contains goals and policies intended to protect historical and culturally significant resources, which contribute to the community’s sense of history. Goal 8.1 and policies relevant to historical resources include:

- **Goal CON-8 Protect historical and culturally significant resources, which contribute to the community’s sense of history.**
 - **Policy CON-8.1: Historic landmark identification.** Identify and recognize historic landmarks from Palmdale’s past.
 - **Policy CON-8.2: Cultural and historic buildings.** Identify and preserve unique cultural and historic buildings and features in order to enhance community character.
 - **Policy CON-8.3: Identified landmarks.** Maintain, rehabilitate, and appropriately reuse identified landmarks where feasible.
 - **Policy CON-8.4: Preservation in new development:** Require that new development preserve significant historic, paleontological, or archaeological resources.
 - **Policy CON-8.7: Cooperation with preservation entities.** Cooperate with private and public entities whose goals are to protect and preserve historic landmarks and important cultural resources.
 - **Policy CON-8.8: Recognition of local historic resources.** Promote respect and recognition of unique historical resources within the community by identifying significant cultural resources with landmark designation plaques, directional signage, self-guided tours, school curriculum, programs, and events.
 - **Policy CON-8.9: Maintain cultural assets.** Discourage historic landmark properties from being altered in such a manner as to significantly reduce their cultural value to the community.

Even with the inclusion of the above polices, damage to or destruction of known or previously unknown historical resources could occur because of the Plan, if preservation is infeasible. Potential

future development occurring under the Plan may include site preparation, demolition, and construction activities. These activities could have the potential to result in the physical demolition, destruction, relocation, or alteration of potential historical resources. Therefore, mitigation would be required.

Mitigation Measures

The following mitigation measure is intended to provide additional measures to complement the policies listed above to ensure that when development may occur in close proximity to historic resources in Palmdale, impacts can be reduced and/or avoided to the extent feasible.

CUL-1 Historical Resources

A historical resources evaluation shall be prepared for all discretionary projects carried out under the Plan involving a property which includes buildings, structures, objects, sites, landscape/site plans, or other features that are 45 years of age or older. The evaluation shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed development site. All structures 45 years of age or older shall be evaluated within their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the City for review and concurrence. If the property is already listed in the NRHP, CRHR, or as a Landmark in Palmdale, the historical resources evaluation described above shall not be required.

If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, the historical resources evaluation report shall also identify and specify the treatment of character-defining features and construction activities.

Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of any permits.

If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The report shall

comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and be submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.

Significance After Mitigation

Implementation of Mitigation Measure CUL-1 would reduce impacts to historical resources by identifying and evaluating significant historical resources and managing relocation, rehabilitation, or alteration in compliance with the Standards as applicable HABS documentation would also reduce these impacts to the greatest extent feasible in cases where compliance with the Standards or avoidance is not possible. Therefore, impacts would be less than significant with implementation of Plan policies and Mitigation Measure CUL-1.

Threshold 2: Would the Plan cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?
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Impact CUL-2 THE PLAN MAY CAUSE A SIGNIFICANT IMPACT IF GROUND DISTURBANCE ASSOCIATED WITH DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE, INCLUDING THOSE THAT QUALIFY AS HISTORICAL RESOURCES. THIS IMPACT WOULD BE SIGNIFICANT BUT MITIGABLE.

Ground-disturbing activities associated with development carried out under the Plan have the potential to damage or destroy archaeological resources that may be present on or below the ground surface, particularly in areas not studied in a cultural resources investigation or when excavation depths exceed those attained previously for past development.

The Plan includes a Conservation, Natural and Cultural Resources element that contains goals and policies intended to protect historical and culturally significant resources, which contribute to the community's sense of history. The Plan includes policies that require new development to preserve historic, paleontological, and archeological resources through collaboration with public, private, and tribal entities. Implementation actions associated with these policies include:

- **Municipal Code Review.** Review the existing survey protocol and report/mapping requirements for the protection of paleontological and archeological resources within the Municipal Code to ensure that the most recent legislation and best practices are utilized.
- **Cultural Sensitivity Map.** Develop and maintain a cultural sensitivity map. Require special studies/surveys to be prepared for any development proposals in areas reasonably suspected of containing cultural resources, or as indicated on the sensitivity map.

Still, damage to or destruction of known or previously unknown archaeological resources could occur because of the project if preservation is infeasible. Therefore, mitigation measures would be required.

Mitigation Measures

CUL-2 Phase I Archaeological Resources Study

For all projects that involve ground disturbance carried out under the Plan, the City and/or project applicant shall investigate the potential to disturb archaeological resources. If a project would solely involve the refurbishment of an existing building and no ground disturbance would occur, this measure shall not be required. In addition, if the project site is within soils that can be reliably demonstrated as being non-native or artificial fill, this measure shall not be required.

If the project will involve ground disturbance (other than under the conditions listed above) a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualifications Standards (PQS) for archaeology (National Park Service 1983). A Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether archaeological resources may be present. Archival research shall include a records search of the South Central Coastal Information Center (SCCIC) no more than two years old and a Sacred Lands File search with the NAHC. The Phase I technical report documenting the study shall include recommendations that must be implemented prior to and/or during construction to avoid or reduce impacts on archaeological resources. The report shall be submitted to the City for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase I technical report shall be made Conditions of Approval and shall be implemented throughout all ground disturbance activities.

CUL-3 Extended Phase I Testing

For any projects proposed within 100 feet of a known archaeological site and/or in areas identified as sensitive by an updated cultural sensitivity map or in a Phase I study [Mitigation Measure CUL-2], the project applicant shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. XPI testing shall comprise a series of shovel test pits and/or hand augured units and/or mechanical trenching to establish the boundaries of archaeological site(s) on the project site. If the boundaries of the archaeological site are already well understood from previous archaeological work, an XPI shall not be required. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).

All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations contained therein shall be implemented for all ground disturbance activities.

CUL-4 Archaeological Site Avoidance

Any identified archaeological sites (determined after implementing Mitigation Measures CUL-2 and/or CUL-3) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging shall be placed between the work location and any resources within 60 feet of a work location to minimize the potential for inadvertent impacts.

CUL-5 Phase II Site Evaluation

If the results of any Phase I and/or XPI (Mitigation Measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, the qualified archaeologist shall conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for the CRHR or qualify as unique archaeological resources. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).

A Phase II evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation shall characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains.

If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-2) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase II report shall be implemented prior to all ground disturbance activities.

CUL-6 Phase III Data Recovery

Should the results of the Phase II site evaluation (Mitigation Measure CUL-5) yield resources that meet CRHR significance standards and if the resource cannot be avoided by project construction in accordance with CUL-4, the project applicant shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and approved by the City of Palmdale prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI PQS for archaeology according to a research design reviewed and approved by the City of Palmdale prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). If applicable, a Native American monitor shall be present.

As applicable, the final Phase III Data Recovery reports shall be submitted to the City of Palmdale prior to issuance of any grading or construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities.

CUL-7 Cultural Resources Monitoring

If recommended by Phase I, XPI, Phase II, or Phase III studies [Mitigation Measures CUL-2, CUL-3, CUL-5, and/or CUL-6], the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, Mitigation Measures CUL-4 through CUL-6 shall be implemented, as appropriate.

CUL-8 Unanticipated Discovery of Archaeological Resources

If archaeological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project archaeologist meeting the SOI's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.

Significance After Mitigation

Implementation of Mitigation Measures CUL-2 through CUL-8 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery archaeological resources that may be impacted by future projects in a timely manner.

Threshold 3: Would the Plan disturb any human remains, including those interred outside of formal cemeteries?
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Impact CUL-3 THE DISCOVERY OF HUMAN REMAINS IS ALWAYS A POSSIBILITY DURING GROUND-DISTURBING ACTIVITIES. GROUND DISTURBANCE ASSOCIATED WITH DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY DISTURB OR DAMAGE KNOWN OR UNKNOWN HUMAN REMAINS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH ADHERENCE TO EXISTING REGULATIONS.

Regulations exist to address the discovery of human remains. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. If an unanticipated discovery of human remains occurs, the county coroner must be notified immediately. If the human remains are determined to be of Native American origin, the coroner must notify the NAHC, which will determine and notify a most likely descendant, who shall complete an inspection of the site and provide recommendations for treatment to the landowner within 48 hours of being granted access. With adherence to existing regulations impacts would be less than significant.

Mitigation Measures

Because impact would be less than significance due to required regulations, mitigation measures would not be required.

Significance After Mitigation

Compliance with existing regulations and archaeological resources mitigation measures would reduce Plan impacts to human remains to less than significant levels by ensuring proper identification and treatment of any human remains that may be present.

Cumulative Analysis

Cumulative development across the Planning Area could disturb areas that may potentially contain historical and archaeological resources. The potential for impacts from individual projects is generally site-specific and depends on the location and nature of each individual project. Individual projects implemented under the proposed Plan would continue to be subject to applicable federal, state, and local requirements. As discussed above, individual projects implemented under the Plan have the potential to result in impacts to historical and archaeological resources. Implementation of Plan policies and mitigation measures would reduce impacts to archaeological and historical resources to the greatest extent feasible. Therefore, the potential for cumulative impacts to historical and archaeological resources is significant but mitigable, and the proposed program's contribution to such impacts would not be cumulatively considerable.

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4.6 Energy

This chapter assesses potential impacts on energy from the Plan. The physical environmental impacts associated with the generation of electricity and burning of fuels have been accounted for in Section 4.3, *Air Quality*, and Section 4.8, *Greenhouse Gas Emissions*.

4.6.1 Environmental Setting

Energy relates directly to environmental quality. Energy use, when sourced from fossil fuels, can adversely affect air quality, and generate greenhouse gas (GHG) emissions that contribute to climate change. Fossil fuels are burned to create electricity to power residences and commercial/industrial buildings, heat and cool buildings, and power vehicles. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes such as auto, carpool, and public transit; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy.

Energy Fundamentals

Energy is generally transmitted either in the form of electricity, measured in kilowatt-hours (kWh) or gigawatt-hours (GWh), or natural gas measured in British thermal units (BTU), or cubic feet. Fuel, such as gasoline or diesel, is measured in gallons or liters.

Electricity

Electricity is used primarily for lighting, appliances, cooking purposes, and other uses associated with building and vehicle operations. Electricity sources range from renewable (e.g., hydroelectric, solar, wind, geothermal, biomass) to nonrenewable (e.g., natural gas, oil, nuclear, coal).

Natural Gas

Natural gas is used primarily for heating, water heating, and cooking purposes and is typically associated with building operations.

Fuel

Fuel is used primarily for powering off-road equipment and vehicles (commercial trucks and other vehicles). The typical fuel types used are diesel and gasoline.

a. Energy Demand

California

GENERATION

According to the California Energy Commission (CEC), California generated approximately 190,913 gigawatt-hours (GWh) of electricity in 2020. As shown in Table 4.6-1, approximately 48 percent of this electricity was sourced from natural gas, 32 percent from renewable sources (i.e., solar, wind, geothermal, biomass, small hydroelectric), nine percent from large hydroelectric sources, and the remaining 11 percent was sourced from coal, nuclear, oil, other and unspecified sources (CEC 2022).

Table 4.6-1 California 2020 Total System Electric Generation

Fuel Type	In-State Generation (GWh)	Percent of In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	State Energy Mix (GWh)	State Power Mix
Coal	317	0.17%	194	6,963	7,474	2.74%
Large Hydro	17,938	9.40%	14,078	1,259	33,275	12.21%
Natural Gas	92,298	48.35%	70	8,724	101,022	37.06%
Nuclear	16,280	8.53%	672	8,841	25,434	9.33%
Oil	30	0.02%	0	0	30	0.01%
Other (Petroleum/Waste Heat)	384	0.20%	125	9	518	0.19%
Renewables	63,665	32.35%	13,184	13,359	90,208	33.09%
<i>Biomass</i>	5,680	2.97%	975	25	6,679	2.45%
<i>Geothermal</i>	11,345	5.94%	166	1,825	13,336	4.89%
<i>Small Hydro</i>	3,476	1.82%	320	2	3,798	1.39%
<i>Solar</i>	29,456	15.43%	284	6,312	36,052	13.23%
<i>Wind</i>	13,708	7.18%	11,438	5,197	30,403	11.13%
Unspecified	N/A	N/A	12,870	1,745	14,615	5.36%
TOTAL	190,913	100.00%	41,193	40,471	272,576	100.00%

Source: CEC 2022

DISTRIBUTION

Electricity is distributed through the various electric load-serving entities (LSEs) in California. These entities include investor-owned utilities, publicly owned LSEs, rural electric cooperatives, community choice aggregators, and electric service providers (CEC 2021a).

USE

According to the California Energy Commission (CEC 2021), total electricity direct consumption in California in 2020 was 279,510.001 GWh, down approximately three percent, compared to 288,281.751 GWh, consumed in 2017. California electricity consumption in 2020 represented approximately 6.7 percent of total U.S. electricity consumption in 2020 (USEIA 2020).

California is one of the top producers of petroleum in the nation, with drilling operations occurring throughout the State but with greater concentrations in some areas such as the San Joaquin Valley and the Los Angeles basin. A network of crude oil pipelines connects production areas to oil refineries in the Los Angeles area, the San Francisco Bay area, and the Central Valley. California oil refineries also process Alaskan and foreign crude oil received in ports in Los Angeles, Long Beach, and the San Francisco Bay area. Crude oil production in California and Alaska is in decline, in part due to recent California statewide direction to phase out oil extraction by 2045 (California Office of the Governor 2021), and California refineries have become increasingly dependent on imports (CEC 2021c). Led by Saudi Arabia and Ecuador, foreign suppliers now produce more than half of the crude oil refined in California (CEC 2021d). According to the United States Energy Information Administration (USEIA), California’s field production of crude oil totaled 144.3 million barrels in 2020 (USEIA 2021).

Petroleum fuels are generally purchased by individual users such as residents and employees. According to the Division of Oil, Gas, and Geothermal Resources (DOGGR) there are approximately 2,500 petroleum wells and hundreds of gas stations in Los Angeles County (DOGGR 2021). Los Angeles County has transmission pipelines for both natural gas and hazardous liquid transmission pipelines (National Pipeline Mapping System 2021).

Alternative Fuels

A variety of alternative fuels are used to reduce petroleum-based fuel demand. The use of these fuels is encouraged through various statewide regulations and plans, such as the Low Carbon Fuel Standard and Senate Bill 32. Conventional gasoline and diesel may be replaced, depending on the capability of the vehicle with transportation fuels including the following:

Hydrogen

Hydrogen is being explored for use in combustion engines and fuel cell electric vehicles. The interest in hydrogen as an alternative transportation fuel stems from its clean-burning qualities, its potential for domestic production, and the fuel cell vehicle's potential for high efficiency, which is two to three times more efficient than gasoline vehicles. However, hydrogen fuel production is costly, and the weight and efficiency of hydrogen fuel systems is not yet compatible with typical vehicles and driving ranges (USDOE 2022). There are 10 hydrogen fueling stations in Los Angeles County, with the closest station to Palmdale in Pasadena (USDOE 2021a).

Biodiesel

Biodiesel is a renewable alternative fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases. Biodiesel is biodegradable and cleaner-burning than petroleum-based diesel fuel. Biodiesel can run in any diesel engine generally without alterations but the lack of fueling stations have inhibited its general availability. There are currently four biodiesel fueling stations in Los Angeles County, with the closest station to Palmdale in Ontario (USDOE 2021b).

Electric Vehicles

Electricity can be used to power electric and plug-in hybrid electric vehicles directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicle's batteries. Fuel cells are being explored to use electricity generated onboard the vehicle to power electric motors. There are hundreds of electrical charging stations throughout Los Angeles County and several in Palmdale (USDOE 2021c). The CEC's Building Energy Efficiency Standards (Title 24 of the California Code of Regulations) also require installation of electric vehicle charging spaces in new construction projects. Additionally, the 2021 Federal Infrastructure Bill allocates approximately \$384 million dollars to California over the next five years to support the expansion of an electric vehicle charging network and includes a provision that allows the State to apply for the \$2.5 billion in grant funding dedicated to EV charging infrastructure.

Electricity

California

CALIFORNIA'S 2020 INTEGRATED ENERGY POLICY REPORT

Every two years, the CEC prepares the Integrated Energy Policy Report (IEPR). The most recent update to the IEPR identifies actions the state and others can take to ensure a clean, affordable, and reliable energy system. California's innovative energy policies strengthen energy resiliency, reduce GHG emissions, improve air quality, and contribute to an equitable future (CEC 2020). Volume II of the 2020 IEPR, examines microgrids, lessons learned from a decade of state-supported research, and stakeholder feedback on the potential of microgrids to contribute to a clean and resilient energy system. Volume III reports California's energy demand outlook, updated to reflect the global pandemic and plan for a growth in zero-emission plug in electric vehicles.

City of Palmdale

Southern California Edison (SCE) provides electricity to the City of Palmdale and surrounding areas. In 2020, SCE generated approximately 83,533 gigawatts of electricity (California Energy Commission 2020). As of 2019, approximately 35 percent of SCE's power mix was sourced from renewable resources, including solar, wind, eligible hydroelectric, and geothermal. Approximately 32 percent of SCE's power mix was purchased through open market transactions, and the remainder was sourced from natural gas, large hydroelectric, and nuclear resources (SCE 2019).

Natural Gas

California

Natural gas plays an important and varied role in California. The most recent report provided by the DOGGR stated the net natural gas production for 2019 was 148.2 billion cubic feet, or approximately 155,222 billion British thermal units (Btu). These figures indicate a decrease of 8.1 percent from 2018 production (DOGGR 2021).

2020 CALIFORNIA GAS REPORT

The 2020 California Gas Report presents a comprehensive outlook for natural gas requirements and supplies for California through the year 2035. The report is prepared in even-numbered years, followed by a supplemental report in odd-numbered years, in compliance with California Public Utilities Commission (CPUC) Decision D.95-01-039. The projections contained in the California Gas Report are for long-term planning and do not necessarily reflect the day-to-day operational plans of the utilities (California Gas and Electric Utilities [CGEU] 2020).

California natural gas demand, including volumes not served by utility systems, is expected to decrease at a rate of one percent per year from 2020 to 2035. The forecasted decline is due to a combination of moderate growth in the natural gas vehicle market and across-the-board declines in all other market segments: residential, commercial, electric generation, and industrial markets (CGEU 2020).

Residential gas demand is expected to decrease at an annual average rate of two percent. Demand in the commercial and industrial markets are expected to decrease slightly at a similar rate of one to one and a half percent. Stricter codes and standards coupled with more aggressive energy efficiency programs and new goals laid out in Senate Bill 350, discussed further under *Regulatory Setting*, are

making a significant impact on the forecasted load for the residential, commercial, and industrial markets (CGEU 2020).

California's existing natural gas supply portfolio is regionally diverse. It includes supplies from California onshore and offshore sources, Southwestern United States supply sources, the Rocky Mountains, and Canada.

Biogas

There is growing interest regarding biogas¹ production potential in California from the following activities:

- Non-hazardous-waste landfills
- Landfill diversion of organic waste material
- Wastewater treatment
- Concentrated animal feeding operations
- Food and green waste processing

Implementation of Senate Bill 1383, which requires a 75 percent reduction in organic waste disposal by 2025, will also contribute to biogas production potential in California. When biogas is conditioned and upgraded to pipeline quality specifications, it can be interconnected to a gas utility's pipeline and distributed to a specific customer. Biomethane may also be consumed on-site for a variety of uses, including electrical power generation from internal combustion engines, fuel cells, and turbines, or as a fuel source for natural gas vehicles. Currently, there are instances where biogas is being vented naturally or flared to the atmosphere, rather than being utilized as a valuable renewable resource (CGEU 2020).

b. Energy Demand

Petroleum

California

According to the EIA, transportation accounted for nearly 40 percent of California's total energy demand, amounting to approximately 3,170 trillion Btu in 2018 (EIA 2020). The CEC produces the California Annual Retail Fuel Outlet Report, which is a compilation of gasoline and diesel fuel sales data from across the State available at the county level. According to the CEC, California's 2020 fuel sales totaled 15,365 million gallons of gasoline and 3,086 million gallons of diesel (CEC 2021e).

City of Palmdale

The baseline year for petroleum fuel demand in Palmdale is 2017, as the vehicle miles traveled (VMT) baseline year used throughout this EIR is 2017 (see Chapter 4.17, *Transportation* of this EIR for further explanation of the VMT modeling performed for this project). Fuel consumption for Palmdale, Los Angeles County, and California are outlined below in Table 4.6-2. With a population of 188,488 in 2017, the per capita gasoline consumption in Palmdale was approximately 317 gallons. Although the Plan applies only to the Planning Area (Palmdale and its Sphere of Influence), the smallest scale to which diesel consumption information is available is at the county level. Therefore,

¹ Biogas is a mixture of methane and carbon dioxide produced by the bacterial degradation of organic matter.

the 2017 per capita consumption of diesel, approximately 30 gallons, is calculated with the 2017 population of 10,181,162 in Los Angeles County.

Table 4.6-2 2017 Annual Gasoline and Diesel Consumption

Fuel Type	Palmdale	Los Angeles County	California	Proportion of Statewide Consumption	Per Capita Consumption	per Capita Consumption (MMBtu)
Gasoline (gallons)	59,783,349	–	13,936,000,000	0.4%	317	35
Diesel (gallons)	–	301,000,000	1,937,000,000	16%	30	3.8

Notes: Diesel and gasoline volumes are expressed in gallons while Btu volumes are expressed in millions of Btu (MMBtu).
 Source: CEC 2021f, 2021g

Electricity

California

According to the latest data provided by the CEC, California consumed approximately 279,510,000 kilowatt-hours of electricity (KWh) in 2020, or approximately 953,688 billion Btu (CEC 2020). According to the CEC’s Energy Consumption Database, residential electricity demand accounted for approximately 33.7 percent of California’s electricity consumption in 2020 while non-residential demand accounted for approximately 66.3 percent (CEC 2021f).

Los Angeles County

In 2020, Los Angeles County consumed approximately 65,650 GWh of electricity, or approximately 24 percent of statewide electricity consumption. Approximately 65 percent of energy in Los Angeles County was used in the non-residential sector, with 35 percent consumed by residential uses. With a population of 10,135,614 in 2020 (DOF 2021), energy consumption per capita in Los Angeles County was approximately 647 kilowatt-hours (KWh). This information is summarized in Table 4.6-3.

Table 4.6-3 2020 Annual Electricity Consumption

	Los Angeles County (GWh)	California (GWh)	Proportion of Statewide Consumption	County per Capita Consumption (kWh)	County per Capita Consumption (MMBtu)
Electricity (GWh)	65,650	279,510	23%	647	71.03

Note: Electricity consumption volumes for Los Angeles County and California are expressed in gigawatt-hours (GWh) while County per capita consumption is expressed in kilowatt-hours (kWh) and millions of Btu (MMBtu).

Natural Gas

California

In 2020, California consumed a total of 12,331 million U.S. Therms of natural gas, or approximately 1,146 trillion Btu (CEC 2021g). According to the CEC’s Energy Consumption Database, residential natural gas demand accounted for approximately 38.7 percent of California’s total natural gas demand while non-residential natural gas demand accounted for approximately 61.3 percent (CEC 2021h).

Los Angeles County

Although the Plan applies only to the Planning Area, the smallest scale to which natural gas consumption information is available is at the county level. Therefore, natural gas consumption in Los Angeles County is used herein to characterize Palmdale’s natural gas consumption. According to the CEC, Los Angeles County consumed approximately 2,937 million US Therms in 2020, or approximately 273,065 billion Btu (CEC 2021h). With a population of 10,135,614 in 2020 (DOF 2021), Los Angeles County’s 2020 per capita natural gas consumption was approximately 290 US Therms. This information is summarized in Table 4.6-4.

Table 4.6-4 2020 Annual Natural Gas Consumption

Energy Type	Los Angeles County (Millions of US Therms)	California (Millions of US Therms)	Proportion of Statewide Consumption	County per Capita Consumption (US Therms)	County per Capita Consumption (MMBtu)
Natural Gas	2,937	12,331	24%	290	27

Notes: Natural gas consumption volumes for Los Angeles County and California are expressed in millions of US Therms while County per capita consumption is expressed in US Therms and millions of Btu (MMBtu).
Source: CEC 2021h

4.6.2 Regulatory Setting

a. Federal

Energy Independence and Security Act of 2007

The Energy Independence and Security Act, enacted by Congress in 2007, is designed to improve vehicle fuel economy and help reduce U.S. dependence on foreign oil. It expands the production of renewable fuels, reducing dependence on oil, and confronting global climate change. Specifically, it does the following:

- Increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard, requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels
- Reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020 – an increase in fuel economy standards of 40 percent

Energy Policy and Conservation Act

Enacted in 1975, this legislation established fuel economy standards for new light-duty vehicles sold in the U.S. The law placed responsibility on the National Highway Traffic and Safety Administration, a part of the U.S. Department of Transportation, for establishing and regularly updating vehicle standards. The USEPA administers the Corporate Average Fuel Economy program, which determines vehicle manufacturers’ compliance with existing fuel economy standards. Since the inception of the Corporate Average Fuel Economy program, the average fuel economy for new light-duty vehicles steadily increased from 13.1 miles per gallon for the 1975 model year to 30.7 miles per gallon for the 2014 model year and is proposed to increase to 54.5 by 2025. Light-duty vehicles include autos, pickups, vans, and sport-utility vehicles.

Safer Affordable Fuel-Efficient Vehicles Rule

On September 27, 2019, the USEPA and the National Highway Safety Administration published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program, revoking California's authority to set its own GHG emissions standards and zero-emission vehicle mandates in California. On June 29, 2020, Part Two of the SAFE Vehicles Rule became effective, revising Corporate Average Fuel Economy and CO₂ emissions standards for model years 2021-2026 passenger cars and trucks, such that the standards increase by approximately one and a half percent each year through model year 2026 as compared to the 2012 standards, which required an approximately five percent annual increase (National Highway Traffic Safety Administration 2021).

Energy Star Program

In 1992, USEPA introduced Energy Star as a voluntary labeling program designed to identify and promote energy-efficient products to reduce GHG emissions. The program applies to major household appliances, lighting, computers, and building components such as windows, doors, roofs, and heating and cooling systems. Under this program, appliances that meet the specifications for maximum energy use established under the program are certified to display the Energy Star label. In 1996, USEPA joined with the Energy Department to expand the program, which now also includes qualifying commercial and industrial buildings, and homes.

Construction Equipment Fuel Efficiency Standard

The USEPA sets emission standards for construction equipment. The current iteration of emissions standards for construction equipment are the Tier 4 efficiency requirements contained in 40 Code of Federal Regulations Parts 1039, 1065, and 1068. Emissions requirements for new off-road Tier 4 vehicles were completely phased in by the end of 2015 (USEPA 2022).

b. State

California Energy Plan

The CEC is responsible for preparing the California Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The 2008 California Energy Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

California Energy Efficiency Action Plan

The CEC is responsible for preparing the California Energy Efficiency Action Plan, which covers issues, opportunities, and savings estimates related to energy efficiency in California's building, industrial, and agricultural sectors. The 2019 California Energy Efficiency Action Plan focuses on three goals:

1. Doubling energy efficiency savings by 2030 (SB 350)

2. Removing and reducing barriers to energy efficiency in low-income and disadvantaged communities
3. Reducing GHG emissions from the building sector

The plan offers several recommendations to advance these goals, including expanding funding sources for energy efficiency programs beyond ratepayer portfolios, improving energy efficiency data, integrating energy efficiency into long-term utility planning, enhancing the energy efficiency workforce, improving demand flexibility, and expanding building decarbonization (CEC 2019).

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), the CEC and CARB prepared and adopted a joint agency report in 2003, *Reducing California's Petroleum Dependence*. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT. One of the performance-based goals of AB 2076 is to reduce petroleum demand to 15 percent below 2003 demand. Furthermore, in response to the CEC's 2003 and 2005 *Integrated Energy Policy Reports*, the Governor directed the CEC to take the lead in developing a long-term plan to increase alternative fuel use.

Integrated Energy Policy Report

SB 1389 (Chapter 568, Statutes of 2002) required the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC uses these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. The most recent assessment, the *2018 Integrated Energy Policy Report*, contains two volumes. Volume I highlights the implementation of California's innovative policies and the role they have played in establishing a clean energy economy. Volume II, scheduled for completion in February 2019, will provide more detail on several key energy issues and will encompass new analyses, as well as significant opportunities for public participation (CEC 2018d).

Senate Bill 1078: California Renewables Portfolio Standard Program

SB 1078 (Chapter 516, Statutes of 2002), and as expanded under SB 2, established the RPS for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. SB 2 expanded this law and required procurement from eligible renewable energy resources to 33 percent by 2020. In addition, electricity providers subject to the RPS must increase their renewable share by at least one percent each year.

Senate Bill X1-2: California Renewable Energy Portfolio Standard

In 2011, the Governor signed SB X1-2, which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 33 percent of their electricity supply from renewable sources by 2020. The California Public Utilities Commission (CPUC) and CEC jointly implement the statewide RPS program through rulemakings and monitoring the activities of electric energy utilities in the State.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Senate Bill 100: California Renewable Energy Portfolio Standard Program: Emissions of Greenhouse Gases

Approved by the Governor on September 10, 2018, SB 100 amends the State's RPS program, which originally called for electricity retailers to ensure 33 percent of electricity generation was sourced from renewable sources by 2020, 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. With implementation of SB 100, electricity retailers must ensure 33 percent of electricity generation is sourced from renewable sources by 2020, 44 percent by 2024, 50 percent by 2026, 52 percent by 2027, and 60 percent by 2030. SB 100 further requires electricity retailers to provide 100 percent zero-carbon electricity generation by 2045.

Assembly Bill 1493: Reduction of Greenhouse Gas Emissions

AB 1493 (Chapter 200, Statutes of 2002), known as the Pavley bill, amended Health and Safety Code Sections 42823 and 43018.5 requiring CARB to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, light-duty trucks, and other vehicles used for noncommercial personal transportation in California.

Implementation of new regulations prescribed by AB 1493 required that the State of California apply for a waiver under the federal Clean Air Act. Although the USEPA initially denied the waiver in 2008, EPA approved a waiver in June 2009, and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new passenger vehicles in model years 2009 through 2016. According to CARB, implementation of the Pavley regulations is expected to reduce fuel consumption while also reducing GHG emissions.

2017 Climate Change Scoping Plan

On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the State's 2030 GHG emissions reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation. The 2017 Scoping Plan includes a wide variety of goals related to energy efficiency and renewable energy that are intended to help meet the State's 2030 target (CARB 2017).

Energy Action Plan

In the October 2005 *Energy Action Plan (EAP) II*, the CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues and research and development activities. The CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required the CEC to prepare a plan to increase the use of alternative fuels in California. The CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other federal, State, and local agencies. The State Alternative Fuels Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan, Executive Order S-06-06

Executive Order (EO) S-06-06, April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs State agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels in California by 2010, 40 percent by 2020, and 75 percent by 2050. EO S-06-06 also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 Plan and provides a more detailed action plan to achieve the following goals:

- Increase environmentally and economically sustainable energy production from organic waste
- Encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications
- Create jobs and stimulate economic development, especially in rural regions of the state
- Reduce fire danger, improve air and water quality, and reduce waste

California Building Energy Efficiency Standards – California Code of Regulations, Title 24, Part 6

California Code of Regulations, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-residential Buildings. The CEC established Title 24 in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The standards are updated on an approximately three-year cycle to allow consideration and possible incorporation of new efficient technologies and methods. In 2019, the CEC updated Title 24 standards with more stringent requirements effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020, must follow the 2019 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2019 Building Energy Efficiency Standards move toward cutting energy use in new homes by more than 50 percent. The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary due

to local climatologic, geologic, or topographic conditions, provided these standards exceed those provided in Title 24.

California Green Building Standards Code (2019), California Code of Regulations Title 24, Part 11

California's Green Building Code, referred to as CALGreen, was developed to provide a consistent approach to green building in the State. Having taken effect in January 2020, the most recent version of CALGreen lays out the minimum requirements for newly constructed residential and nonresidential buildings to reduce GHG emissions through improved energy efficiency and process improvements. It also includes voluntary tiers to further encourage building practices that improve public health, safety, and general welfare by promoting a more sustainable design.

Advanced Clean Trucks Regulation

On June 25, 2020, CARB approved the Advanced Clean Trucks Regulation, which requires truck manufacturers (any manufacturer that certifies vehicles over 8,500 pounds gross vehicle weight rating) with sales in California to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, all new trucks sold in California must be zero-emission (CARB 2022).

c. Local

City of Palmdale Energy Action Plan

Palmdale adopted its Energy Action Plan (EAP) in August 2011. The EAP included a GHG emissions inventory for the baseline year 2005 and a GHG emissions forecast to the horizon year of 2035. The EAP establishes reduction goals, measures, and an implementation program to reduce energy demand, water consumption, and transportation trips, and to promote the use of renewable energy. The EAP contains municipal and community-wide goals, each of which are supported by several measures. Goals and applicable measures from the EAP are listed below.

- **Goal 1: Reduce energy demand through energy conservation and efficiency.**
 - **Measure 1.1:** Implement energy efficiency improvements (i.e., retrofits) in existing City buildings and facilities.
 - **Measure 1.2:** Exceed Title 24 energy efficiency standards in new City facilities as feasible.
 - **Measure 1.3:** Encourage new development to exceed Title 24 energy use requirements by 15%.
 - **Measure 1.4:** Reduce the urban heat island effect to reduce energy consumption and cool the local climate through increased shading on private property, cool surfaces, and high albedo surfaces for sidewalks and parking lots.
 - **Measure 1.6:** Promote energy efficiency improvements in the city's housing stock.
 - **Measure 1.7:** Facilitate comprehensive home energy retrofits.
- **Goal 2: Reduce water consumption for energy conservation.**
 - **Measure 2.1:** Reduce municipal water consumption to reduce energy consumption and conserve water resources.
 - **Measure 2.3:** Facilitate a 20% reduction in water use by 2020 to exceed the 20X2020 initiative to reduce energy consumed for water conveyance and treatment.

- **Goal 3: Promote renewable energy generation and use.**
 - **Measure 3.1:** Demonstrate City leadership in renewable energy by supplying 100% of City energy needs with renewable sources by 2035.
 - **Measure 3.2:** Encourage the commercial and industrial sector to meet energy needs through on-site renewable energy sources.
 - **Measure 3.3:** Encourage the residential sector to meet energy needs through on-site renewable energy sources.
 - **Measure 3.4:** Facilitate the establishment of large-scale solar facilities to supply regional energy needs.
- **Goal 4: Reduce transportation emissions through alternative vehicles, trip reduction and consolidation, and efficient flow.**
 - **Measure 4.1:** Continue to promote ride sharing and TDM programs to reduce use of traditional motor vehicles for work commutes.
 - **Measure 4.3:** Reduce emissions from mobile sources through efficient vehicle flow.
 - **Measure 4.5:** Reduce emissions from on-road vehicle sources.
- **Goal 5: Implement smart land use to reduce vehicular trips.**
 - **Measure 5.1:** Promote accessible housing near transit and services.
 - **Measure 5.2:** Pursuant to SB 375, support the development and implementation of a regional Sustainable Communities Strategy with the Southern California Association of Governments through local plans and programs.
- **Goal 6: Reduce waste.**
- **Goal 7: Support the buy-local movement.**

The EAP is consistent with Assembly Bill 32, which requires a 15 percent reduction in emissions compared to 1990 levels, and Executive Order S-3-05, which requires an 80 percent reduction in emissions compared to 1990 levels by 2050. To meet these targets, the EAP plans to reduce local emissions by 61 percent below the projected “business as usual” emissions forecasts by 2035 (City of Palmdale 2011).

The EAP includes implementation chapters which includes specific actions for the City to facilitate implementation of the GHG and energy reduction measures and evaluate the EAP’s success. It also establishes criteria for staff to use when determining if a proposed development project is consistent with the EAP for CEQA purposes.

4.6.3 Impact Analysis

a. Methodology and Significance Thresholds

Significance Thresholds

The following thresholds of significance were developed in accordance with Appendix G of the CEQA Guidelines. Energy-related impacts would be significant if the Plan would:

1. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

2. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Methodology

Energy consumption is categorized herein in terms of “direct” and “indirect” energy. Direct energy accounts for energy consumed during operation of the transportation system and land use scenario envisioned under the Plan, such as fuel consumed by vehicles, natural gas consumed for heating and/or power, and electricity consumed for power. Indirect energy is the energy needed for construction and maintenance of the transportation system and land use scenario facilitated by the Plan. The analysis of direct energy involves the quantification of anticipated transportation fuel, natural gas, and electricity consumption under the Plan and a qualitative discussion of the efficiency, necessity, and wastefulness of the energy consumption. Analysis of indirect energy involves a qualitative discussion of construction and maintenance energy requirements anticipated for development carried out under the Plan.

Direct Energy Consumption

The direct energy analysis for transportation fuel demand under the Plan is based on 2017 to be consistent with the 2017 VMT baseline used in the transportation analysis for the Plan. The 2017 gasoline and diesel fuel consumption data for Palmdale and Los Angeles County was converted to annual per capita MMBtu consumption (as shown in Table 4.6-2), converted to daily per capita Btu consumption, and divided by the region-wide daily VMT of 8,028,726 (as shown in Table 4.6-5) to derive a regional Btu/VMT conversion factor of 0.014 Btu per capita per daily VMT.

It should be noted that the Btu/VMT factor is forecast to continue to decrease in the future as a result of improved fuel economy, particularly if the fleet-wide goal of 35 miles per gallon by year 2020 proposed under the Energy Independence and Security Act is met. Applying the 2020-based factor to 2045 VMT therefore provides a conservative evaluation of per capita energy consumption for transportation fuels as the energy efficiency of vehicles in 2045 is likely to be higher than current fuel efficiency of vehicles.

For 2045 natural gas and electricity consumption under buildout of the land use scenario envisioned by the Plan, consumption factors were drawn from the California Emissions Estimator Model (CalEEMod) Version 2020.4.0. The CalEEMod data is provided as Appendix B. Natural gas and electricity per capita consumption in 2045 is presented in comparison to 2020 per capita consumption for informational purposes.

b. Project and Cumulative Impacts

<p>Threshold 1: Would the Plan result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?</p>
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Impact E-1 WITH COMPLIANCE WITH APPLICABLE REGULATIONS AND PLAN POLICIES, THE PLAN WOULD NOT RESULT IN SIGNIFICANT ENVIRONMENTAL IMPACTS DUE TO WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES DURING CONSTRUCTION OR OPERATION OF PROJECTS CARRIED OUT UNDER THE PLAN. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Development carried out under the Plan would involve the use of energy during construction and operation. Energy use during construction would be primarily in the form of fuel consumption to

operate heavy equipment, light-duty vehicles, machinery, and generators for lighting. Temporary grid power may also be provided to construction trailers or electric construction equipment.

Long-term operation of development projects would require permanent grid connections for electricity. Consistent with the Climate Action Plan, or the Sustainability, Climate, and Resilience chapter of the Plan, projects facilitated by the Plan would be required to be 100 percent electric and would not utilize natural gas. In addition, the increase in vehicle trips associated with potential development would increase fuel consumption.

Daily operation of the regional transportation system uses energy in the form of fuel consumed by passenger vehicles, including automobiles, vans and trucks, and transit vehicles including buses and trains. Increases in motor vehicle trips are primarily a combined function of population and employment growth. Table 4.6-5 shows daily VMT and estimated fuel consumption translated into energy use (Btu) in Palmdale under 2017 conditions and future 2045 conditions with implementation of the Plan.

Table 4.6-5 Direct Transportation Energy Use in Palmdale

Year	Daily VMT	Per Capita Btu/ VMT Factor	Direct Energy Consumption (Daily Per Capita MBtu)
2017	8,028,726	0.014	112
2045	7,727,110	0.014	108

Notes: Daily VMT for the 2017 base and the 2045 base (as provided by Parsons in Appendix D) were applied to the 2017 and 2045 scenarios, respectively. Daily VMT and county-level fuel consumption information was used to derive a per capita daily Btu per VMT consumption factor. Per Capita Btu/VMT Factor is expressed in singular Btu while Daily Per Capita Direct Energy Consumption is expressed in thousands of Btu (MBtu).

As shown in Table 4.6-5, direct transportation energy demand would decrease from approximately 112 MBtu per capita to approximately 108 MBtu per capita, a decrease of approximately three percent over a 28-year period. Further, proposed Plan policies listed below would improve the availability of alternative transportation modes and help reduce congestion and overall demand for transportation fuels.

LAND USE AND COMMUNITY DESIGN

- **Goal LUD-1: Complete Neighborhoods where residents can reach daily amenities, local retail, services, parks, and public facilities within a short 20-minute walk.**
 - **Policy LUD-1.1: Balanced Land Uses.** Maintain a balanced land use pattern to support a broad range of housing choices, retail businesses, employment opportunities, educational and cultural institutions, entertainment spaces, and other supportive uses within long-established Palmdale neighborhoods and new growth areas.
 - **Policy LUD-1.2: New Complete Neighborhoods.** Facilitate the construction of new mixed-use neighborhoods that are well connected to services, transit, amenities, public buildings, and parks and recreational facilities.
 - **Policy LUD-1.3: Access to Amenities.** Strive to create development patterns such that the majority of residents are within twenty minutes or less walking distance of a variety of neighborhood-serving uses in Village Centers, such as parks, grocery stores, restaurants, places of worship, cafes, dry cleaners, laundromats, banks, hair care, pharmacies, civic uses, and similar uses.

- **Goal LUD-5: All new major development in the city is designed to support high-quality neighborhoods.**
 - **Policy LUD-5.1: New Complete Neighborhoods.** Require new development to provide multiple amenities, a beautiful public realm, and be consistent with the City’s vision for complete neighborhoods.
 - **Policy LUD-5.2: Walkability of New Neighborhoods.** Require all new neighborhoods to be pedestrian friendly by including features, such as short blocks, wide sidewalks, shaded streets, buildings that define and are oriented to streets or public spaces, traffic-calming features, convenient pedestrian street crossings, and safe streets designed for pedestrians, cyclists, and vehicles.
 - **Policy LUD-5.3: Public Services in New Neighborhoods.** Require new developments to be designed for and provided with adequate public services and infrastructure. Require that these public facilities and services be provided concurrently with development to ensure a high quality of life for residents.
 - **Policy LUD-5.4: Access to Retail/Services.** Strive for a high level of connectivity of residents to neighborhood services through site design, open space linkages, and bicycle facilities. Plan for 90 percent of residents (except for in rural residential designations) to be within a fifteen to twenty minute walking distance of retail and neighborhood services.
 - **Policy LUD-5.5: Trail Networks.** Provide new trails systems that connect to the regional system.

- **Goal LUD-9: Thriving, active Village Centers and Multi-Use Centers at regular intervals outside of the city core.**
 - **Policy LUD-9.1: Activity Centers.** Support a network of vibrant Village Centers that are mixed-use activity centers located throughout the City’s residential areas to create 20-minute neighborhoods, implemented through new mixed-use land use designations, which provide a mix of residential uses and daily goods/services.
 - **Policy LUD-9.5: Mobility Connections.** Seek to improve walk, bike, and transit access to Village Centers by connecting to the larger/regional pedestrian and bicycle networks.

CIRCULATION AND MOBILITY

- **Goal TM-2: Build and maintain a transportation system that accommodates future growth and maintains transportation networks for all modes.**
 - **Policy TM-2.2: Multimodal travel.** Prioritize safety, operations, and comfort for active and transit modes on streets that have been identified as part of the multimodal network.
 - **Policy TM-2.5: Multimodal comfort.** Prioritize quality of multimodal facilities with respect to a user’s experience of stress, connectivity, and safety for streets with a non-automobile priority, and ensure the appropriate balance with vehicular operations.

- **Goal TM-3: Build and maintain a transportation system that provides affordable, equitable, and efficient access to employment centers and essential services.**
 - **Policy TM-3.1: Transit reliability.** Make public transit a convenient and reliable option for daily trip making on a local and regional basis.
 - **Policy TM-3.2: Transit access.** Encourage investments and Capital Projects that reduce first/last-mile barriers to transit stops.

- **Policy TM-3.3: Access to employment.** Encourage investments and Capital Projects that improve the safety and multimodal options for access to high quality jobs.
- **Policy TM-3.4: Transit coordination.** Work with AVTA to enhance the deployment of fixed-route and flex-route transit services, including increased frequency and service spans.
- **Policy TM-3.5: Regional rail.** Work with Metrolink to increase the frequency of on-peak services and later service hours.
- **Policy TM-3.6: Transit information.** Work with transit providers to improve the delivery of transit service availability and real-time information in an easy, dependable, and accessible means.
- **Policy TM-3.7: Commute trip reduction.** Work with large employers to implement programs that expand access to non-drive alone commute options for all commuters, including hourly staff and contract workers.
- **Policy TM-3.8: Multimodal Station.** Maximize access to downtown via transit and other modes through the Palmdale Transportation Center and future relocation to accommodate a station for high-speed rail.
- **Goal TM-4: Build and maintain a transportation system that enhances quality of life and public health.**
 - **Policy TM-4.1: Access to essential services.** Prioritize investments that improve access to healthcare and social services.
 - **Policy TM-4.2: Access to healthy foods.** Improve mobility in neighborhoods with limited access to healthy food sources.
 - **Policy TM-4.3: Access to parks and open space.** Prioritize investments that expand access to Palmdale’s parks and trails and support physical activity.
 - **Policy TM-4.4 Neighborhood streets.** Create neighborhood streets that unify neighborhoods, reduce vehicle speeds, reduce barriers for people walking, biking, and riding transit, and provide connectivity to connector and regional routes.
 - **Policy TM-4.5: Active friendly design.** Design multimodal facilities to a standard that will increase physical activity.
 - **Policy TM-4.6: Lighting.** Provide human scale lighting along pedestrian thoroughfares, in commercial districts, on trails, and at transit stops.
- **Goal TM-5: Build and maintain a transportation system that fosters a more active and vibrant downtown.**
 - **Policy TM-5.1: Public space.** Encourage wider sidewalks and plazas on downtown streets to enhance placemaking, improve public safety, and support local businesses.
 - **Policy TM-5.2: Parking supply.** Promote and support creative and flexible approaches to parking, including maximizing use of existing public supply and sharing between uses to create a “park once environment.”
 - **Policy TM-5.3: Walkability.** Enhance the safety and comfort of existing pedestrian street crossings and reduce the distance between crossings.
 - **Policy TM-5.4: Streetscaping.** Implement streetscape design that improves the pedestrian environment and appearance of downtown corridors.
 - **Policy TM-5.5: Secure bicycle parking.** Install secure short- and long-term bicycle parking near key destinations, civic buildings, and transit facilities.

- **Policy TM-5.6: Reduced parking minimums.** Study reducing minimum on-site parking requirements for new development in districts of the City that can support shared parking between land uses and achieve parking demand reductions through transit and multimodal improvements.
- **Policy TM-5.7: Compact development.** Encourage the development of a healthy mix of land uses within proximity to promote internal capture, shared-parking, and de-emphasize the need for single-occupant vehicular travel.
- **Policy TM-5.8: Context sensitive development.** Balance development intensity and roadway capacity.
- **Goal TM-6: Build and maintain a transportation system that leverages the City’s natural setting and reduces impacts to the environment.**
 - **Policy TM-6.1: Vehicle miles traveled.** Prioritize transportation investments and strategies that create opportunities for residents to reduce Vehicle Miles Traveled.
 - **Policy TM-6.2: Multimodal development.** Encourage the development of dense, mixed-use, pedestrian-oriented land uses that link affordable housing options to daily needs.
 - **Policy TM-6.3: Transportation demand management.** Promote trip reduction strategies, including telecommuting, through land-use decisions and TDM programming strategies.
 - **Policy TM-6.4: Commute trip reduction.** Require TDM Plans for major employers, as defined by the Air Quality Management District.

ECONOMIC DEVELOPMENT

- **Goal ED-5: Diversify housing options for residents at different stages of life and ability, to continue making Palmdale an affordable place to live.**
 - **Policy ED-5.3: Transit-oriented development.** Encourage transit-oriented development that meets community needs in the proposed downtown near the future multi-modal high speed rail station and at other transit nodes.
- **Goal ED-6: Remain at the forefront of transportation innovations that connect residents and workers to the regional and national economy.**
 - **Policy ED-6.1: Transportation investments.** Support opportunities to bring more transportation investments such as a High-Speed rail station and opening commercial air services.
 - **Policy ED-6.2: Infrastructure investment.** Prioritize infrastructure and development that unlocks economic investment around the City and increase usage of transportation facilities.
 - **Policy ED-6.3: Neighborhood transportation connections.** Improve local transit and last mile connectivity between neighborhoods and regional transportation hubs/corridors.

EQUITABLE, AND HEALTHY COMMUNITY

- **Goal EHC-11: Encourage neighborhoods that support safe pedestrian, bicycle, and public transit access for people of all ages, income levels, and cultural backgrounds.**
 - **Policy EHC-11.1: Near-universal walk access to retail and services.** Plan for 90 percent of residents (except for equestrian residential areas) to be within a 20-minute walking distance of a Village Center with retail and neighborhood services.

- **Policy EHC-11.2: Complete streets investments.** Prioritize transportation system improvements that promote Complete Streets objectives, incorporate universal design principles, and encourage walking, biking, and transit use in disadvantaged communities.
- **Policy EHC-11.3: Improve connectivity.** Strive for a high level of connectivity of residents to Village Centers and neighborhood services through site design, open space linkages, and bicycle facilities. Integrate land use and transportation infrastructure to support a connected system of sidewalks, bikeways, greenways, and transit.
- **Policy EHC-11.4: Streetscape enhancements.** Enhance existing streetscapes to include greater sidewalk coverage, walkway connectivity, street trees and shade, street lighting, street crossing safety features, traffic calming measures, transit shelters, and other design elements, especially in disadvantaged communities.
- **Policy EHC-11.5: Safe routes for older adults.** Develop safe routes for aging adults, particularly routes to transit and shopping centers.

SUSTAINABILITY

- **Goal SCR-4: Reduced greenhouse gas emissions from transportation (SB 379, EO N-79-20).**
 - **Policy SCR-4.1: Bike Facilities.** Promote bicycle use with new private development projects through requirements for bicycle parking, lockers and showers, bike share facilities, and when feasible, connections to City bike lanes.
 - **Policy SCR-4.2: Public Transit.** Expand the public transit system, increase frequency of service, and provide shade at transit stops.
 - **Policy SCR-4.3: Public EV Chargers.** Install EV chargers at suitable public facilities, including any parking structures, the future multi-modal High Speed Rail station, and community parks.
 - **Policy SCR-4.4: EV Reach Code.** Adopt EV requirements beyond CALGreen in both number of chargers and charger capacity.
 - **Policy SCR-4.5: ZEV Purchasing.** When purchasing City vehicles give preference to fuel efficient vehicles, including the use of zero emission vehicles.
 - **Policy SCR-4.6: Clean Fuels.** Require use of clean fuels for City construction and maintenance vehicles and lawn/garden equipment.
 - **Policy SCR-4.7: Pedestrian and Cyclist Safety.** Promote bicycle and pedestrian modes of travel by improving pedestrian and cyclist safety. Example techniques include increasing the number of sidewalks, pending connected and protected bike lanes, and redesigning high incidence intersections.

AIR QUALITY

- **Goal AQ-1: Minimize local air pollution caused by motor vehicles.**
 - **Policy AQ 1-1: Reduced work-related trips.** Reduce the number and length of work-related trips through such means as providing a balance of jobs and housing in the community, promoting alternate work schedules, telecommuting, teleconferencing, company-sponsored ride-share and alternative fuel vehicle programs, use of commuter trains and other alternative modes of transportation to the workplace, creation of additional park and ride facilities, and improving the fiber optic network and connectivity.

- **Policy AQ 1-2: Reduced Non-Work Trips.** Reduce motor vehicle non-work trips through such means as location of residences in proximity to shopping and recreation/entertainment destinations, transit system improvements, and promoting merchant transportation incentives, and distance learning.
- **Policy AQ 1-3: Improve Traffic Flow.** Reduce vehicle emissions by maintaining and improving traffic flow per the Mobility Element.
- **Policy AQ 1-4: High Occupancy Vehicle Lanes.** Coordinate with Caltrans to promote high occupancy vehicle lanes on State Route 14.
- **Policy AQ 1-9: Encourage transit and bike use.** Provide incentives to residents who bike or use public transportation such as free or discounted public transit or employer-provided subsidies or reimbursements for residents willing to bike or use public transit.

Construction and maintenance of future land use development envisioned under the Plan would result in short-term consumption of energy resulting from the use of construction equipment and processes. CALGreen includes specific requirements related to recycling, construction materials, and energy efficiency standards that would apply to construction of future development envisioned by the Plan and would minimize wasteful, inefficient, and unnecessary energy consumption.

Construction and operation of projects facilitated by the Plan would be required to comply with relevant provisions of CALGreen and Title 24 of the California Energy Code, as well as the City's Water Efficiency Landscaping Ordinance, which would further avoid wasteful, inefficient, and unnecessary energy consumption. Per applicable regulatory requirements such as CALGreen, development under the Plan would comply with construction waste management practices to divert a minimum of 65 percent of construction debris. In addition, construction contractors would be required to comply with the provisions of California Code of Regulations Title 13 Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes, which would minimize unnecessary fuel consumption.

Operation of the development carried out under the Plan would consume electricity for building heating and power, lighting, and water conveyance, among other operational requirements. Table 4.6-6 displays per capita natural gas and electricity consumption under 2045 with Plan conditions compared to 2020 per capita consumption. Development carried out under the Plan would be all electric and would therefore not utilize natural gas. As shown in Table 4.6-6, per capita natural gas consumption for the anticipated population growth and land use scenario envisioned under the Plan would be approximately 27 million Btu less than 2020 per capita natural gas consumption. However, per capita electricity consumption for the anticipated population growth and land use scenario envisioned under the Plan would be 13.16 million Btu more than 2020 per capita electricity consumption, an increase of approximately 500 percent compared to existing electricity usage.

Table 4.6-6 Annual Natural Gas and Electricity Consumption in Palmdale

Year	Population	Per Capita Consumption	Direct Energy Consumption (Per Capita MMBtu)
Natural Gas		US Therms	
2020	156,910	290	27
2045 (Net New Only)	78,880	0	0
Electricity		kWh	
2020	156,910	647	2.21
2045 (Net New Only)	78,880	3,858	13.16

Notes: 2020 per capita consumption is available only on a countywide basis. Therefore, the 2020 per capita consumption is based on the population of all of Los Angeles County in 2020. The 2045 energy consumption shown in this table represents net new consumption only. Per capita consumption in 2045 is derived from dividing net new energy consumption by net new population anticipated by 2045 (78,540 people). Per capita energy consumption is expressed in US Therms for natural gas, kilowatt-hours (kWh) for electricity, and thousands of Btu (MBtu) for both.

While 2045 natural gas and electricity per capita consumption rates in Palmdale would change under the implementation of the Plan, the per capita consumption rates shown in Table 4.6-6 do not precisely represent the existing per capita consumption as they are based on county-wide information. However, the natural gas and electricity per capita consumption rates for the net new population growth and land use scenario envisioned under the Plan are presented above to illustrate the Plan’s relative energy efficiency compared to current conditions. As shown in Table 4.6-6, Palmdale’s anticipated growth in combination with the land use scenario envisioned by the Plan would substantially decrease per capita natural gas consumption but substantially increase per capita electricity consumption in Palmdale.

The Plan contains goals and policies that would help minimize the occurrence of inefficient, wasteful, and unnecessary energy consumption during construction and operation of development carried out under the Plan. The Plan goals and policies that present the greatest potential for reducing wasteful, inefficient, and unnecessary energy consumption are as follows:

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PFSI-1: Maintain superior public facilities to support the Palmdale community.**
 - **Policy PFSI-1.7: City Facility Efficiency.** Install energy efficient lighting and promote energy conservation practices in all city-owned facilities.
- **Goal PSFI-3: Ensure that all development in Palmdale is served by adequate water distribution and sewage facilities.**
 - **Policy PFSI-3.9: Renewable Energy Project Disposal Systems.** Allow the use of private sewage disposal systems on nonresidential renewable energy projects with domestic discharge only on property with an IND (Industrial) General Plan Land Use designation located between Avenue L and M between 50th Street East and 120th Street East, and on property with an IND (Industrial) General Plan Land Use designation on property located south of Avenue M, north of Avenue P-8, between 90th Street East and 120th Street East. The maximum daily estimated discharge shall not exceed 500 gallons/acre/day wastewater flow with a maximum discharge of 5,000 gallons per day.
 - **Policy PFSI-3.18: Water Conservation.** Support and promote water conservation across all facets of City water infrastructure.

SUSTAINABILITY, CLIMATE AND RESILIENCE

- **Goal SCR-1: Achieve a carbon neutral community by 2045 (EO B-55-18).**
 - **Policy SCR-1.1: CAP Maintenance.** Maintain and regularly update a Climate Action Plan to reduce GHGs generated within the City.
 - **Policy SCR-1.2: GHG Inventory.** Conduct community GHG inventories every 3-5 years to track progress toward achieving the City’s GHG reduction goal.
 - **Policy SCR-1.3: Funding Sources.** Seek funding to support implementation of GHG reduction projects for the City, residents, and businesses.
 - **Policy SCR-1.4: Community Engagement.** Develop and implement comprehensive community engagement including educational outreach, issue-specific awareness campaigns, and technical assistance.
- **Goal SCR-2: Utilize a fossil fuel free energy system (SB 100).**
 - **Policy SCR-2.1: Carbon Free Energy.** Direct EPIC to provide 75% carbon-free or renewable electricity to residents and businesses by 2030, achieving 100% carbon-free electricity by 2045.
 - **Policy SCR-2.2: Community Solar.** Explore the development of community solar projects and microgrids.
 - **Policy SCR-2.3: Battery Permitting.** Establish a streamlined approval process for battery storage systems.
- **Goal SCR-3: Green and decarbonized buildings for new construction and major renovations.**
 - **Policy SCR-3.1: Energy Efficient New Construction.** Integrate CALGreen Tier 1 and Tier 2 green building and energy efficiency standards into new construction and major remodels.
 - **SCR-3.2: All-Electric Reach Code.** Consider adopting a local reach code to encourage new buildings to be all-electric.
 - **Policy SCR-3.3: Solar and Storage.** Require installation of photovoltaic panels and battery storage on all residential new construction and nonresidential new construction over 5,000 sq. ft.
 - **Policy SCR-3.4: Energy Efficient Existing Buildings.** Establish an energy and water efficiency upgrade program for existing buildings, focusing resources on the most underserved populations.
 - **Policy SCR-3.5: Benchmarking Energy and Water Use.** Register municipal buildings with Energy Star Portfolio Manager and report energy and water use (AB 802).

AIR QUALITY

- **Goal AQ-4: Reduce air pollution caused by energy consumption.**
 - **Policy AQ 4-1: EPIC Participation.** Encourage residents and business owners to participate in Energy for Palmdale’s Independent Choice (EPIC).
 - **Policy AQ 4-2: Energy Conservation.** Encourage energy conservation from all sectors of the community by promoting and/or requiring the use of energy efficient appliances, processes, and equipment, and promoting energy audits and retrofits of existing structures.
 - **Policy AQ 4-3: Recycling.** Require local government, Palmdale citizens, and local businesses and industries to recycle, as mandated by state law, and to otherwise recycle to the

maximum extent possible in accordance with the requirements of the Palmdale Municipal Code.

- **Policy AQ 4-4: Solar Energy.** Require new developments to minimize obstruction of direct sunlight for solar energy systems on adjacent properties.

In addition to the above goals and policies, the Plan encourages infill and transit-oriented development and active transportation to reduce overall energy consumption and result in greater energy efficiency throughout the Planning Area. For example, the Plan contains land-use strategies to encourage higher-density and mixed-use development along transit corridors and near job centers. Mixed-use, transit-oriented, and higher-density development improve energy efficiency because it places residents closer to places of employment, businesses those residents patronize, and public transit facilities. Therefore, the Plan would not result in potentially significant environmental effects from wasteful, inefficient, or unnecessary consumption of energy. This impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would the Plan conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact E-2 THE PLAN WOULD BE CONSISTENT WITH ENERGY EFFICIENCY GOALS CONTAINED IN THE PALMDALE ENERGY ACTION PLAN. CONSTRUCTION AND OPERATION OF PROJECTS CARRIED OUT UNDER THE PLAN WOULD COMPLY WITH RELEVANT PROVISIONS OF THE STATE’S CALGREEN AND TITLE 24 OF THE CALIFORNIA ENERGY CODE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed under 4.6.2, *Regulatory Framework*, several State plans as well as the City’s adopted Energy Action Plan include energy conservation and energy efficiency strategies intended to enable the State and the City to achieve GHG reduction and energy conservation goals. A full discussion of the proposed Plan’s consistency with GHG reduction plans is included in Section 4.7, *Greenhouse Gas Emissions*. As shown in Table 4.6-7, the Plan would be consistent with State renewable energy and energy efficiency plans. Furthermore, as shown in Table 4.6-8, the Plan would be consistent with the EAP’s goals and measures that specifically target energy efficiency.

Table 4.6-7 Consistency with State Renewable Energy and Energy Efficiency Plans

Renewable Energy or Energy Efficiency Plan	Proposed Project Consistency
<p>Assembly Bill 2076: Reducing Dependence on Petroleum. Pursuant to AB 2076, the CEC and CARB prepared and adopted a joint-agency report, <i>Reducing California’s Petroleum Dependence</i>, in 2003. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT. One of the performance-based goals of AB 2076 is to reduce petroleum demand to 15 percent below 2003 demand.</p>	<p>Consistent. The Plan would encourage development in infill locations, which would result in lower VMT, and development would be located near existing services. The Plan would include Policy TM-6.3, which would promote trip reduction strategies through land-use decisions and TDM programming strategies. The Plan would also include Policy TM-6.3, which would require TDM plans for major employers as defined by the Air Quality Management District. Furthermore, the Plan would include several land use and circulation and mobility policies discussed under Impact E-1 which would reduce transportation fuel use.</p>

Renewable Energy or Energy Efficiency Plan	Proposed Project Consistency
<p>2019 Integrated Energy Policy Report. The 2019 report highlights the implementation of California’s innovative policies and the role they have played in establishing a clean energy economy, as well as provides more detail on several key energy policies, including decarbonizing buildings, increasing energy efficiency savings, and integrating more renewable energy into the electricity system.</p>	<p>Consistent. The Plan would include Goal SCR-3, which would aim to make all new construction and major renovation green and result in decarbonized buildings. The Plan would include Policy SCR-2.1, which would involve pursuing options to provide 100 percent carbon-free or renewable energy to residents and businesses. The Plan would also include Policies SCR-3.2 and SCR-3.3, which would encourage new buildings to be all-electric through a local reach code and require installation of solar panels and battery storage on all new construction.</p>
<p>California Renewable Portfolio Standard. California’s RPS obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent total retail sales of electricity from renewable energy sources by 2020, 60 percent by 2030, and 100 percent by 2045.</p>	<p>Consistent. SCE supplies electricity in the Planning Area and is required to generate electricity that would increase renewable energy resources to 60 percent by 2030 and 100 percent by 2045. Because SCE would supply power to development carried out under the Plan, the Plan would not conflict with or obstruct implementation of the California Renewable Portfolio Standard. Further, the Plan also includes Policy SCR-2.1: which directs EPIC to provide 75% carbon-free or renewable electricity to residents and businesses by 2030, achieving 100% carbon-free electricity by 2045, thus meeting the RPS standards.</p>
<p>Energy Action Plan. In the October 2005, the CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues, and research and development activities. The CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State’s ongoing actions in the context of global climate change. The nine major action areas in the EAP include energy efficiency, demand response, renewable energy, electricity adequacy/reliability/infrastructure, electricity market structure, natural gas supply/demand/infrastructure, transportation fuels supply/demand/infrastructure, research/development/demonstration, and climate change.</p>	<p>Consistent. Development carried out under the Plan would be required to comply with Palmdale Municipal Code Chapter 8.04, which mandates implementation of Title 24. Compliance would include rooftop solar on all residential building types that are three stories or less in height. Electricity would be provided by SCE or EPIC which source some or all its power from renewable sources. Given these features, the Plan would facilitate implementation of the nine major action areas in the EAP. Furthermore, as demonstrated below in Table 4.6-8, the Plan would be consistent with the policies of the City’s own EAP, which overlaps with the action areas of the State Energy Action Plan. Therefore, the Plan would not conflict with or obstruct implementation of the EAP.</p>
<p>AB 1007: State Alternative Fuels Plans. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California’s goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-State production of biofuels without causing a significant degradation of public health and environmental quality.</p> <p>Bioenergy Action Plan, EO S-06-06. The EO establishes the following targets to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels in California by 2010, 40 percent by 2020, and 75 percent by 2050.</p>	<p>Consistent. The Plan would not interfere with or obstruct the production of biofuels in California. Vehicles used by residents of the Planning Area would be fueled by gasoline and diesel fuels blended with ethanol and biodiesel fuels as required by CARB regulations. Therefore, the Plan would not conflict with or obstruct implementation of the Bioenergy Action Plan or the State Alternative Fuels Plan.</p>

Renewable Energy or Energy Efficiency Plan	Proposed Project Consistency
<p>Title 24, CCR – Part 6 (Building Energy Efficiency Standards) and Part 11 (CALGreen). The 2019 Building Energy Efficiency Standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of three stories and less.</p> <p>The CALGreen Standards establish green building criteria for residential and nonresidential projects. The 2019 Standards include the following: increasing the number of parking spaces that must be prewired for electric vehicle chargers in residential development; requiring all residential development to adhere to the Model Water Efficient Landscape Ordinance; and requiring more appropriate sizing of HVAC ducts.</p>	<p>Consistent. Development carried out under the Plan would be required to comply with Palmdale Municipal Code Chapter 8.04, which mandates implementation of Title 24. Therefore, the Plan would not conflict with or obstruct implementation of Title 24 standards.</p>

Table 4.6-8 Plan Consistency with the Palmdale Energy Action Plan

EAP Measure	Plan Consistency
Goal 1 Reduce energy demand through energy conservation and efficiency.	
Measure 1.1. Implement energy efficiency improvements (i.e., retrofits) in existing City buildings and facilities.	Consistent.. The Plan would include Policy PFSI-1.7, which is to install energy efficient lighting and promote energy conservation practices in all City-owned facilities.
Measure 1.2. Exceed Title 24 energy efficiency standards in new City facilities as feasible.	Consistent. The Sustainability Element of the Plan contains several goals and policies related to energy efficiency, including SCR-3.1, which would integrate CALGreen green building and energy efficiency standards into new construction and major remodels.
Measure 1.3. Encourage new development to exceed Title 24 energy use requirements by 15%	Consistent. The Plan includes Policy SCR-3.4, which is to establish an energy and water efficiency upgrade program for existing buildings, and SCR-3.1, which is to integrate CALGreen green building and energy efficiency standards into new construction and major remodels.
Measure 1.4. Reduce the urban heat island effect to reduce energy consumption and cool the local climate through increased shading on private property, cool surfaces, and high albedo surfaces for sidewalks and parking lots.	Consistent. The Plan includes Policy SCR-7.1, which is to plant trees along streets, in parks, and in other public spaces to provide shade. The Plan also includes Policy SCR-7.3, which is to encourage tree planting on private property.
Measure 1.6. Promote energy efficiency improvements in the city's housing stock.	Consistent. The Sustainability Element of the Plan contains several goals and policies related to energy efficiency, including SCR-3.1, which is to integrate CALGreen green building and energy efficiency standards into new construction and major remodels.
Measure 1.7. Facilitate comprehensive home energy retrofits.	Consistent. The Plan includes Policy SCR-3.4 which is to establish an energy and water efficiency upgrade program for existing buildings.
Goal 2 Reduce water consumption for energy conservation.	
Measure 2.1. Reduce municipal water consumption to reduce energy consumption and conserve water resources.	Consistent.. The Plan would include Policy SCR-3.4, which aim to establish an energy and water efficiency upgrade program for existing buildings.

EAP Measure	Plan Consistency
<p>Measure 2.3. Facilitate a 20% reduction in water use by 2020 to exceed the 20X2020 initiative to reduce energy consumed for water conveyance and treatment.</p>	<p>Consistent. The Sustainability Element of the Plan contains several goals and policies related to energy efficiency, including Policy SCR-3.1, which is to integrate CALGreen green building and energy efficiency standards into new construction and major remodels.</p>
<p>Goal 3 Promote renewable energy generation and use.</p>	
<p>Measure 3.1. Demonstrate City leadership in renewable energy by supplying 100% of City energy needs with renewable sources by 2035.</p>	<p>Consistent. The Plan includes Policy SCR-2.1, which involves pursuing options to provide 100 percent carbon-free or renewable energy to residents and businesses. The Plan also includes Policies SCR-3.2 and SCR-3.3, which are to encourage new buildings to be all-electric through a local reach code and require installation of solar panels and battery storage on all new construction.</p>
<p>Measure 3.2. Encourage the commercial and industrial sector to meet energy needs through on-site renewable energy sources.</p>	<p>Consistent. The Plan includes Policy SCR-3.1, which is to integrate CALGreen green building and energy efficiency standards into new construction and major remodels. The Plan also includes Policy SCR-3.3, which is to require installation of solar panels and battery storage on all new construction.</p>
<p>Measure 3.3. Encourage the residential sector to meet energy needs through on-site renewable energy sources.</p>	<p>Consistent. The Plan includes Policy SUS-3.1, which is to integrate CALGreen green building and energy efficiency standards into new construction and major remodels. The Plan also includes Policy SUS-3.3, which is to require installation of solar panels and battery storage on all new construction.</p>
<p>Measure 3.4. Facilitate the establishment of large-scale solar facilities to supply regional energy needs.</p>	<p>Consistent. The Plan includes Policy SCR-2.3, which is to establish a streamlined approval process for battery storage systems.</p>
<p>Goal 4 Reduce transportation emissions through alternative vehicles, trip reduction and consolidation, and efficient flow.</p>	
<p>Measure 4.1. Continue to promote ride sharing and TDM programs to reduce use of traditional motor vehicles for work commutes.</p>	<p>Consistent. The Plan includes Policy TM-6.3, which is to promote trip reduction strategies through land-use decisions and TDM programming strategies. The Plan also includes Policy TM-6.4, which is to require TDM plans for major employers as defined by the Air Quality Management District.</p>
<p>Measure 4.3. Reduce emissions from mobile sources through efficient vehicle flow.</p>	<p>Consistent. The Plan includes Policy AQ-1.3, which is to improve traffic flow and reduce vehicle emissions by maintaining and improving traffic flow pursuant to the Transportation and Mobility Element. Also, Chapter 4.17, <i>Transportation</i> of this EIR finds that implementation of the Plan would maintain efficient vehicle flow in the Planning Area.</p>
<p>Measure 4.5. Reduce emissions from on-road vehicle sources.</p>	<p>Consistent. The Plan includes Policy AQ-1.5, which is to, as technology allows, reduce tailpipe emissions from City vehicles by replacing them with alternative fuel vehicles.</p>
<p>Goal 5 Implement smart land use to reduce vehicular trips.</p>	
<p>Measure 5.1. Promote accessible housing near transit and services.</p>	<p>Consistent. The Plan includes Policy PFSI-1.2, which is to promote accessibility for all residents.</p>

As shown above, the Plan would be consistent with Palmdale's EAP and the energy efficiency strategies contained therein. As described in Impact E-1, construction and operation of projects carried out under the Plan would be required to comply with relevant provisions of CALGreen and Title 24 of the California Energy Code. Therefore, this impact would be less than significant, and no mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.6.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines* Section 15065[a][3]). The Plan's geographic scope for energy consumption is the Planning Area. This geographic scope is appropriate because the Plan would guide development within the Planning Area, and cumulative development under the Plan is considered part of this cumulative analysis.

Cumulative development would increase demand for energy resources but as described in this chapter of the EIR, those resources would not be consumed in a wasteful, inefficient, or unnecessary manner. It is also reasonable to assume that future iterations of the California Building Energy Efficiency Standards and CALGreen will require increasingly more efficient appliances and building materials that reduce energy consumption in new development. In addition, vehicle fuel efficiency is anticipated to continue improving through implementation of the existing Pavley Bill regulations under AB 1493.

As described under Impact E-1, development carried out under the Plan would be constructed in accordance with the California Building Energy Efficiency Standards and CALGreen. Additionally, the Plan would focus development in infill locations, which lower VMT due to the proximity to existing services. Therefore, the Plan's contribution to a significant cumulative energy impact is not cumulatively considerable.

For these reasons, development carried out under the Plan would not result in a wasteful, inefficient, or unnecessary consumption of energy, and operation of new structures carried out under the Plan would not result in potentially significant environmental effects due to the wasteful, inefficient, or unnecessary consumption of energy. Therefore, the Plan would not make a cumulatively considerable contribution to a significant cumulative impact related to energy consumption.

The geographic scopes for the cumulative impact analysis of consistency with renewable energy and energy efficiency plans are, respectively, the State of California and the Planning Area. Projects throughout the State of California are required to adhere to applicable renewable energy and energy efficiency laws, programs, and policies such as California's RPS, AB 1493, and Title 24 standards. All other pending and future projects in the Planning Area would be required to adhere to Plan policies to mitigate energy impacts where feasible. In addition, all pending and future projects would be reviewed for consistency with the Plan and the City's EAP. Therefore, cumulative impacts would be less than significant. As discussed under Impact E-2, development carried out under the Plan would be consistent with the energy-related goals, policies, and actions of the Statewide plans and measures of the Palmdale EAP; therefore, the Plan would not make a

cumulatively considerable contribution to a significant cumulative impact with respect to consistency with renewable energy and energy efficiency plans.

4.7 Geology and Soils

This section of the EIR analyzes the potential physical environmental effects of Plan implementation related to seismic hazards, underlying soil characteristics, slope stability, erosion, and paleontological resources. Data used to prepare this section was obtained from the existing City of Palmdale General Plan (Palmdale 1993), the California Department of Conservation (DOC), the California Geological Survey (CGS), and other sources.

4.7.1 Environmental Setting

a. Regional Topography

Palmdale is in the high desert region of Los Angeles County approximately 60 miles north of downtown Los Angeles. It is located at an elevation of approximately 2,655 feet above sea level and is generally flat (Palmdale 1993). It is separated from the City of Los Angeles by the San Gabriel mountain range, which forms the southern edge of the Antelope Valley.

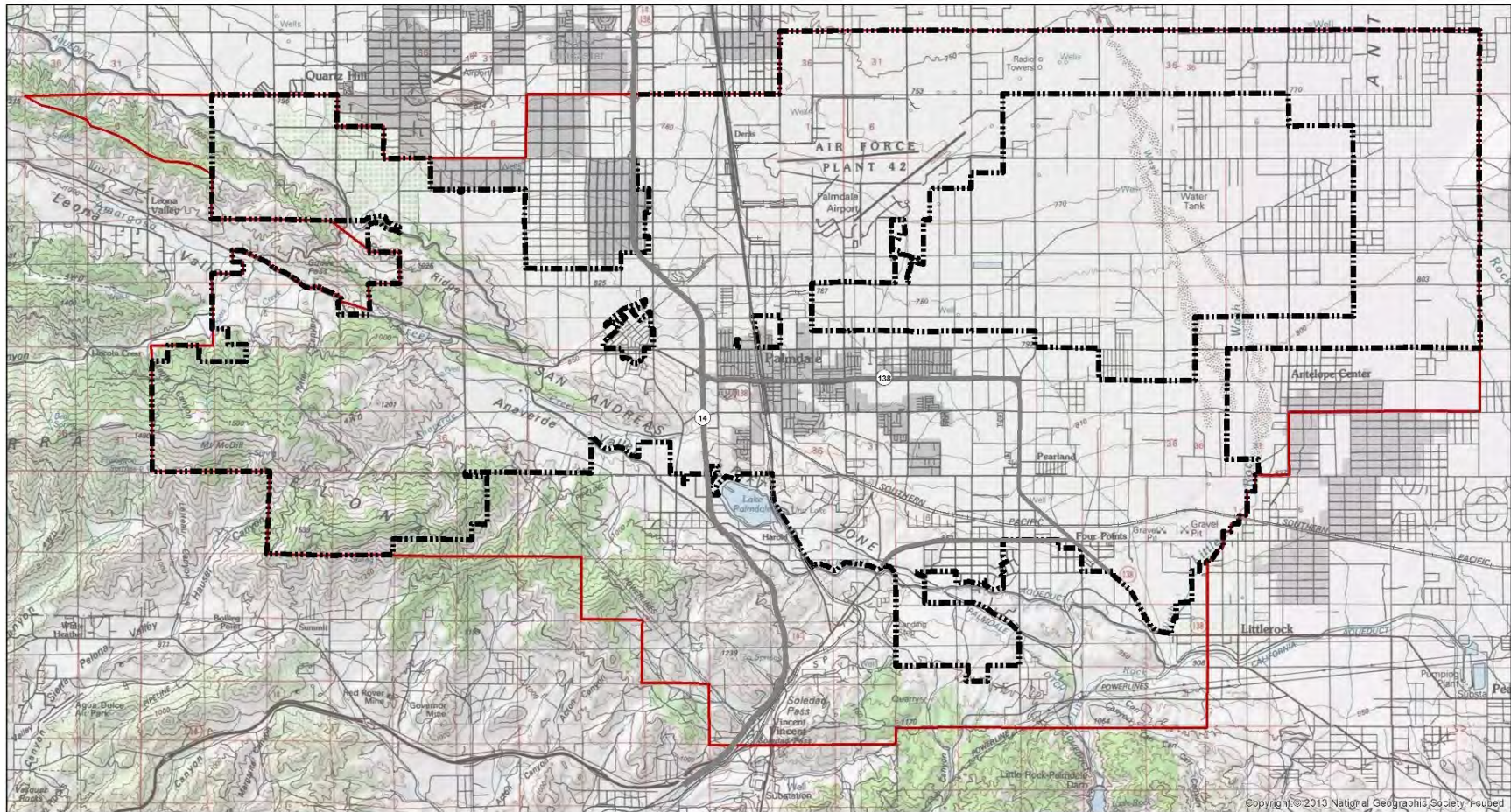
b. Regional Geologic Setting

The Planning Area is 106,634 acres, or approximately 166 square miles located between the foothills of the San Gabriel and Sierra Pelona mountains, and the Mojave Desert (Mojave) to the north and east.





Palmdale is in the southern part of the Mojave geomorphic province. The Mojave is a broad interior region of isolated mountain ranges separated by stretches of desert plains. There are two important fault trends that control topography in the Mojave: a prominent northwest-southeast trend and a secondary east-west trend (apparent alignment with Transverse Ranges is significant). The Mojave province is wedged in a sharp angle between the Garlock Fault (southern boundary Sierra Nevada) and the San Andreas Fault, where it bends east from its northwest trend. The northern boundary of the Mojave is separated from the prominent Basin and Range geomorphic province by the eastern extension of the Garlock Fault (CGS 2002).

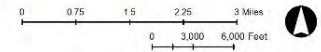
Figure 4.7-1 shows a topographic map of the Planning Area, and Figure 4.7-2 shows soil types in the Planning Area.

Figure 4.7-1 Topographic Map of Palmdale



Topographic

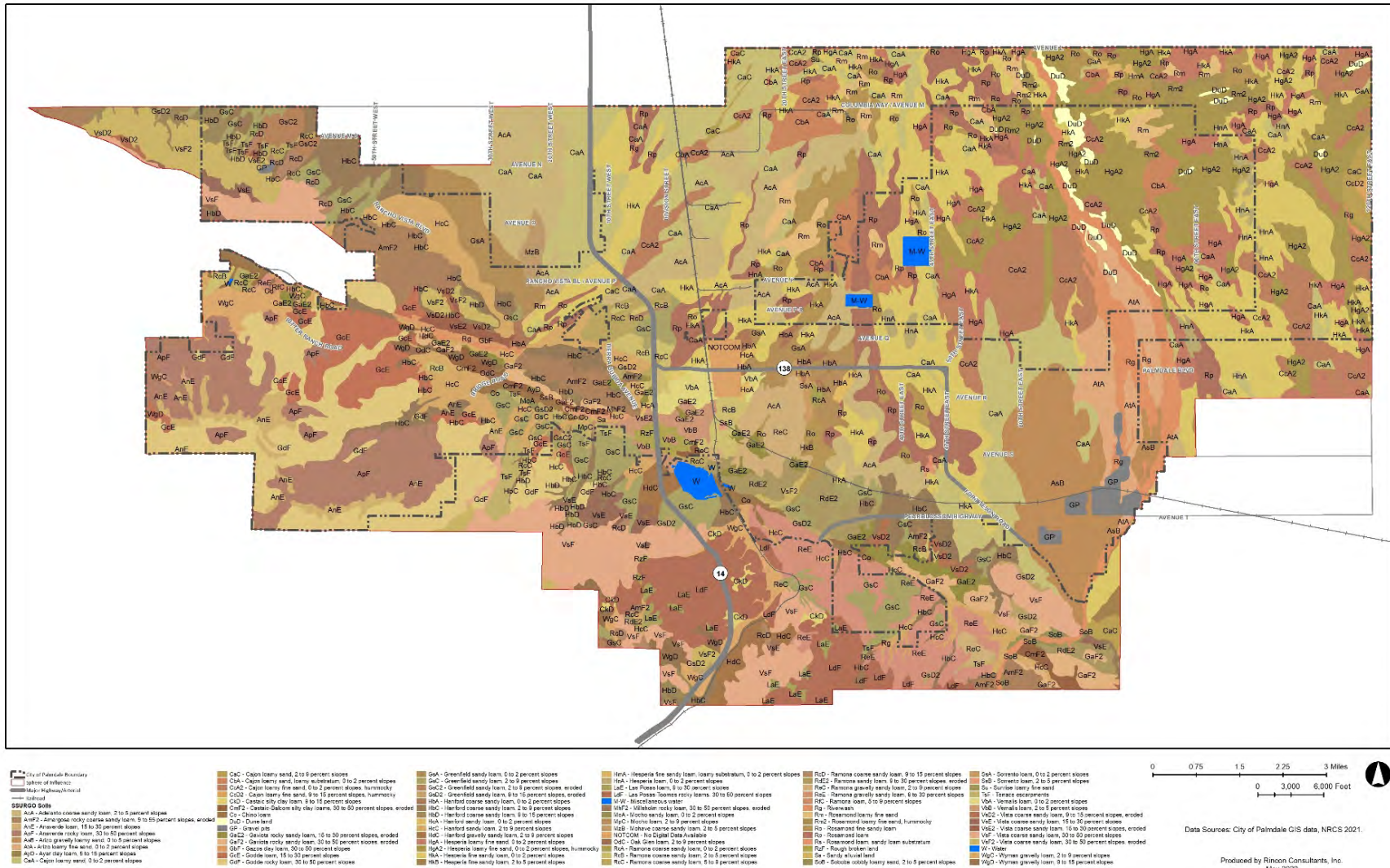
-  City of Palmdale Boundary
-  Sphere of Influence
-  Major Highway/Arterial
-  Railroad



Data Sources: City of Palmdale GIS data, USGS 2021.

Produced by Rincon Consultants, Inc.
 October 2021

Figure 4.7-2 Soil Types in Palmdale



c. Seismic Setting

Faults generally produce damage in two ways: surface rupture and seismically induced ground shaking. Surface rupture is limited to areas very near the fault, while ground shaking can affect a wide area.

The U.S. Geological Survey defines active faults as those that have had surface displacement in Holocene time (about the last 11,000 years). Surface displacement can be recognized by the existence of cliffs in alluvium, terraces, offset stream courses, fault troughs and saddles, the alignment of depressions, sag ponds, and the existence of steep mountain fronts. Potentially active faults are those that have had surface displacement during the last 1.6 million years.

A map of faults closest to the Planning Area is shown in Figure 4.7-3. The San Andreas Fault Zone traverses the southwest portion of the City and crosses State Route 14 (SR-14). The San Andreas Fault is an active fault and is included as a special seismic zone established by the Alquist-Priolo Special Studies Zones Act of 1972. The San Andreas Fault is expected to be the source of major earthquakes within the next 30 years with a Richter magnitude exceeding 8.0. Other faults in the region, but outside the Planning Area capable of producing ground shaking, which could impact Palmdale include the Sierra Madre-San Fernando, Garlock, Owens Valley, and White Wolf faults. In addition to known faults, there are potentially additional faults below the surface that have not yet been charted (Palmdale 2016). Seismic activity from other nearby faults could also cause substantial damage from ground shaking in the event of a major earthquake.

The level of impact resulting from any seismic activity will depend on factors such as distance from epicenter, earthquake magnitude, and characteristics of soils and subsurface geology.

d. Seismic and Soil-Related Hazards

As described above, faults generally produce damage in two ways: ground shaking and surface rupture. Seismically induced ground shaking covers a wide area and is greatly influenced by the distance of the site to the seismic source, soil conditions, and depth to groundwater. Surface rupture is limited to very near the fault. Other hazards associated with seismically induced ground shaking include earthquake-triggered landslides, seiches, and tsunamis. Tsunamis and seiches are associated with ocean surges and inland water bodies, respectively. Soil related hazards include expansive soils, subsidence, settlement, liquefaction, and landslides. Figure 4.7-4 depicts liquefaction seismic hazard zones near the City of Palmdale, as delineated by the California Department of Conservation. These types of hazards and the areas of the City that have the potential for such failure are discussed on the following pages.

Figure 4.7-3 Fault Map of Palmdale

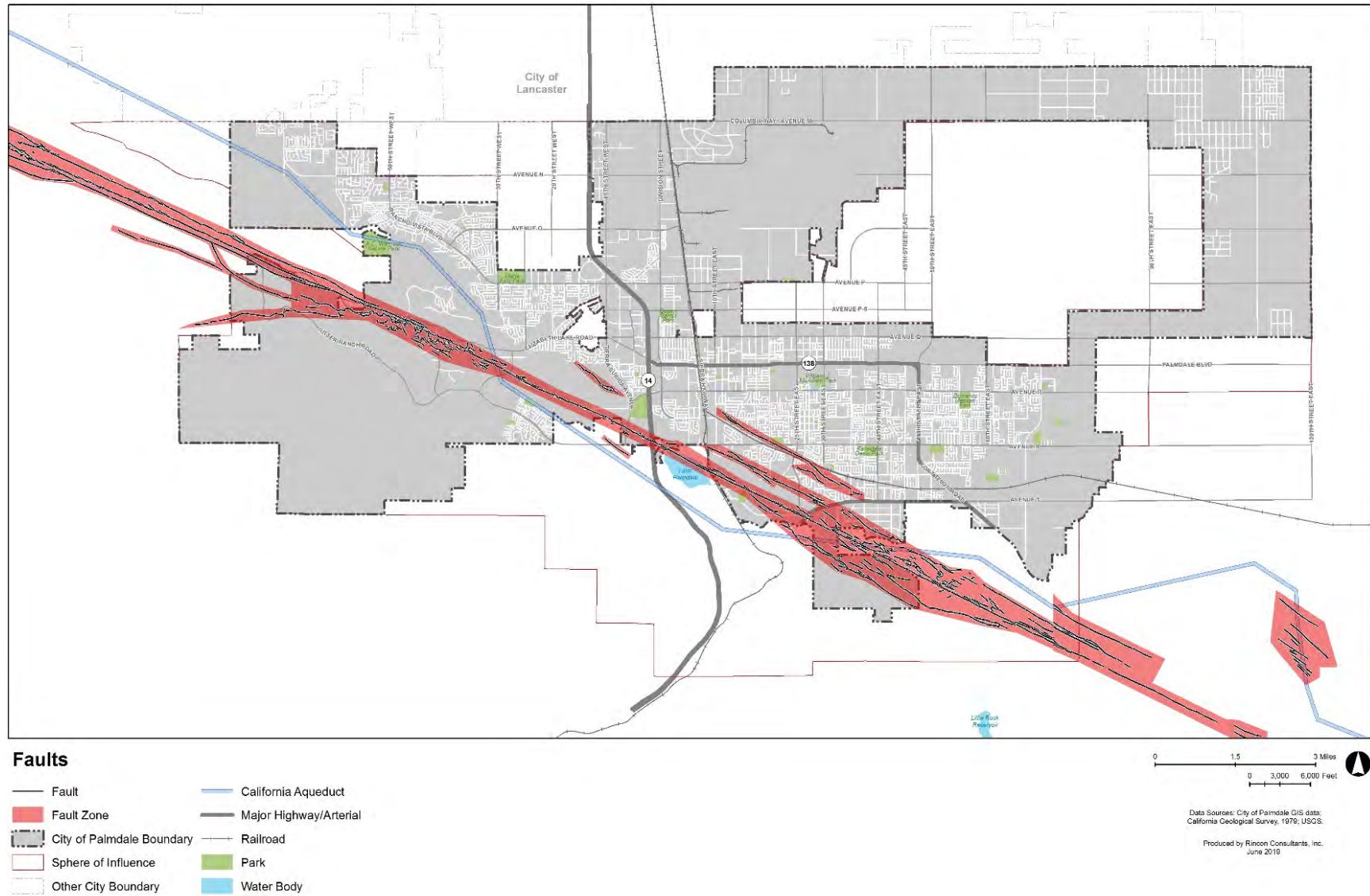
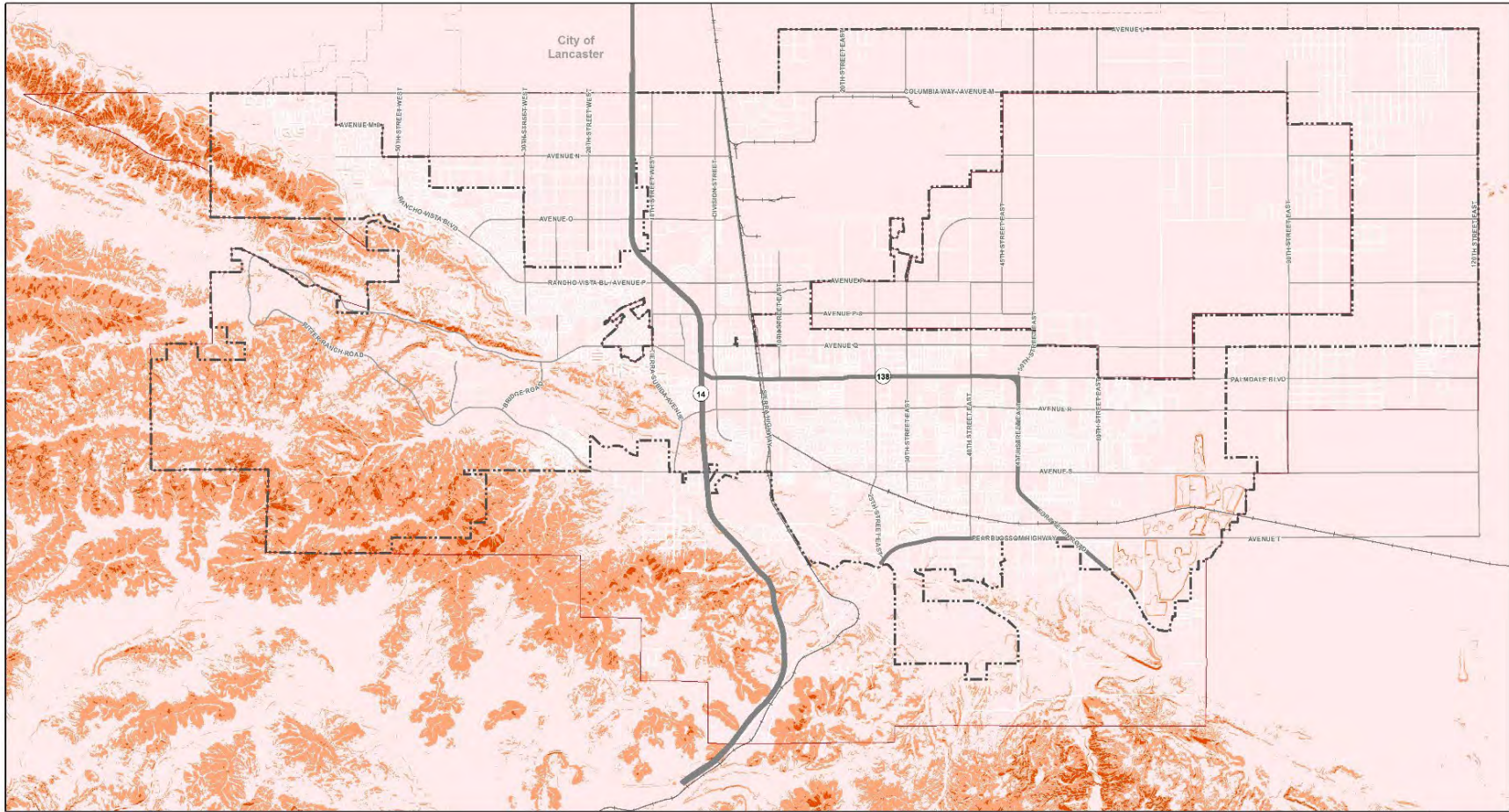
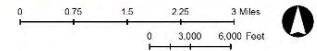


Figure 4.7-4 Slope Map of Palmdale



Slope Map

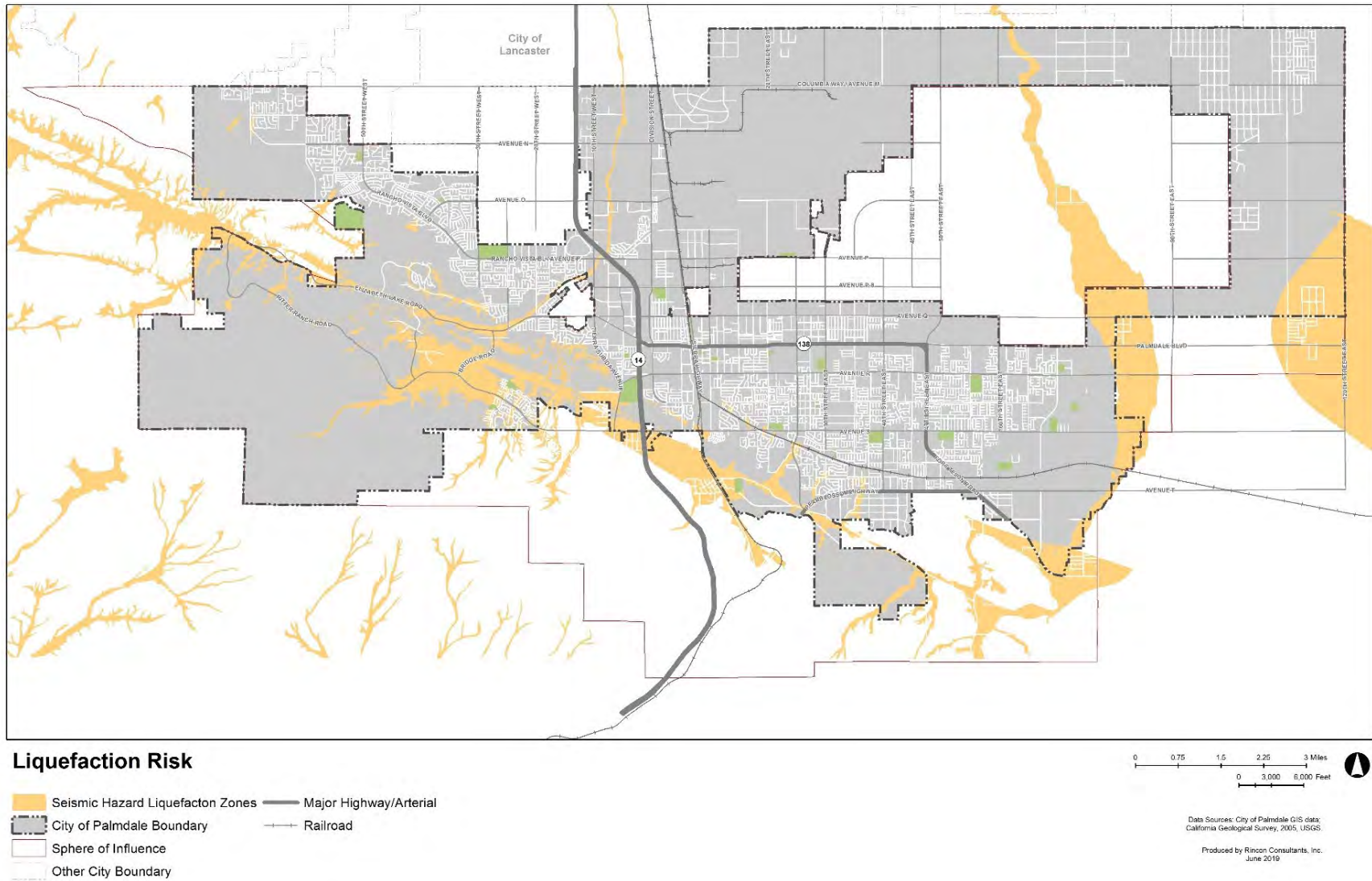
- | | | |
|-------------------------------|---------------------------|------------------------|
| Slope (Degrees) | City of Palmdale Boundary | Major Highway/Arterial |
| 0 - 5 | Sphere of Influence | Railroad |
| 5 - 10 | Other City Boundary | |
| 10 - 25 | | |
| >25 slope color swatch"/> >25 | | |



Data Sources: City of Palmdale GIS data; USGS, 2019.

Produced by Ricon Consultants, Inc.
 June 2019

Figure 4.7-5 Liquefaction Hazard Zones of Palmdale



Seismically Induced Ground-Shaking

The potential severity of ground shaking during an earthquake depends on a variety of factors. Seismic zones are used to describe an area where earthquakes tend to focus. The Planning Area is located in Seismic Zone 4, meaning that there is a one in 10 chance that an earthquake with an active peak acceleration level of 0.4g will occur within 50 years. A region's susceptibility to the highest potential levels of seismic shaking are generally those areas closest to the active earthquake-generating faults and areas underlain by thick unconsolidated deposits, particularly soft, saturated mud and fill. Seismic ground-shaking could be experienced in the Planning Area due to seismic activity along the San Andreas Fault and other faults in southern California, depending upon the location of the earthquake epicenter and the character and duration of the seismic event. Specific effects of a seismic event on the Planning Area would depend upon characteristics of the underlying soil and rock, as well as the building materials and techniques used in construction. Soil types in the Planning Area are shown in Figure 4.7-2.

Liquefaction

Liquefaction is defined as the sudden loss of soil strength due to a rapid increase in soil pore water pressures resulting from seismic ground shaking. Liquefaction potential is dependent on such factors as soil type, depth to ground water, degree of seismic shaking, and the relative density of the soil. During ground shaking, the alluvial grains are packed into a tighter configuration. Pore water is squeezed from between the grains, thereby increasing the pore pressure. As the pore pressure increases, the load bearing strength of the material decreases. When liquefaction of the soil occurs, buildings and other objects on the ground surface may tilt or sink, and lightweight buried structures (such as pipelines) may float toward the ground surface. Liquefied soil may be unable to support its own weight or that of structures that could result in loss of foundation bearing or differential settlement. As a result, structures built on this material can sink into the alluvium, buried structures may rise to the surface or materials on sloped surfaces may run downhill. Liquefaction may also result in cracks in the ground surface followed by the emergence of a sand-water mixture. Other effects of liquefaction include lateral spread, flow failures, ground oscillations, and loss of bearing strength. There are a few liquefaction zones within the Planning Area, particularly in its southwestern portion, as well as a liquefaction zone that transverses through its eastern portion. These zones are depicted in Figure 4.7-5.

Lateral Spreading

Lateral spreading, closely related to liquefaction, occurs when a subsurface layer liquefies and gravitational and inertial forces cause the layer, and the overlying non-liquefied material, to move in a downslope direction. The potential for lateral spreading is highest in areas underlain by soft, saturated materials, especially where bordered by sloping banks or inclined planes to an adjacent open face bank or slope. A slope map of the Planning Area is shown in Figure 4.7-4

Lurching

Ground-lurching is the horizontal movement of soil, sediments, or fill located on relatively steep embankments or scarps, forming irregular ground surface cracks as a result of seismic activity. Like lateral spreading, the potential for lurching is highest in areas underlain by soft, saturated materials, especially where bordered by steep banks or adjacent hard ground. A slope map of the Planning Area is shown in Figure 4.7-4.

Tsunamis

Tsunamis occur when large areas of the submerged continental shelf or slope are rapidly displaced vertically. The Planning Area is approximately 80 miles northeast of the Pacific Ocean at an elevation of 2,655 feet above sea level.

Dam Inundation

Parts of the Planning Area are subject to potential dam inundation resulting from dam failure of the Little Rock Dam located south of the Planning Area, or the Lake Palmdale Dam located in the southwestern portion of the Planning Area. If these dams were to fail and a large release of water were to occur, the southern and eastern regions of the city would be inundated and impacts would be severe. While there is low potential for dam failure in the Planning Area, inundation would most likely be caused by a large influx in rains in combination with many other technological failures, erosion, and other factors causing flooding of the Little Rock Dam or the Palmdale Lake Dam.

Seiche

Seiches are earthquake-generated waves in enclosed or restricted bodies of water. Lake Palmdale has the potential to generate seiches during an earthquake event. However, the design report for the dam states that wave volume above the dam would not be substantial and would not result in damaging floods. Therefore, overpour on the downstream side of the dam would not cause damage by erosion because the existing rockfill was designed to withstand it. The Sheriff's Department is responsible for notification and local evacuation in the event of dam failure (Palmdale 2016).

Expansive Soils

During periods of water saturation, soils with high clay content tend to expand. Conversely, during dry periods, the soils tend to shrink. The amount of volume change depends upon the soil swell potential (amount of expansive clay in the soil), availability of water to the soil, and soil confining pressure. Soil swelling occurs when the soils containing clay become wet due to excessive water from poor surface drainage, over irrigation of lawns and planters, and sprinkler or plumbing leaks. These volume changes with moisture content can cause cracking of structures built on expansive soils. In addition, swelling clay soils can cause distress to lightly loaded structures, walks, drains, and patio slabs. As shown in Figure 4.7-2, while most of the Planning Area, especially the "desert floor" portion, in which most development is located and which would continue to be located under the Plan, is predominantly non-clayey soils. In addition, there are a few areas of clayey soils within the Planning Area. Additionally, Figure 4.7-2 shows soil types at a "macro level" scale and small areas of clayey soils may occur that are not shown on this map.

Subsidence

Subsidence is the lowering of ground surface. It often occurs as a result of withdrawal of fluids (such as water and oil), and gas, from the subsurface. When these materials are removed from the subsurface, the overburden weight, which they had previously helped support through buoyant forces, is transferred to the soil structure. Subsidence typically occurs over a long period of time and results in a number of structural impacts. Facilities most affected by subsidence are long, surface infrastructure facilities such as canals, sewers, and pipelines.

The extraction of groundwater from an aquifer beneath an alluvial valley can result in subsidence or settlement of the alluvial soils. The factors that influence the potential occurrence and severity of

alluvial soil settlement due to groundwater withdrawal include degrees of groundwater confinement; thickness of aquifer systems; individual and total thickness of fine-grained beds; and compressibility of the fine-grained layers. A very small area of land subsidence occurs in the northern region of the Planning Area as a result of groundwater pumping (USGS 2021).

Slope Stability and Landslides

Landslides result when the driving forces that act on a slope (such as the weight of the slope material, and the weight of objects placed upon it) are greater than the slope's natural resisting forces (i.e., the shear strength of the slope material). Slope instability may result from natural processes, such as the erosion of the toe of a slope by a stream, from ground shaking caused by an earthquake, or from artificial modification such as grading or addition of water or structures to a slope. Development on a slope can substantially increase the frequency and extent of potential slope stability hazards. Steep, unstable slopes in weak soil/bedrock units that have a record of previous slope failure typically characterize areas susceptible to landslides. Numerous factors affect the stability of the slope, including slope height and steepness, type of materials, material strength, structural geologic relationships, ground water level, and level of seismic shaking. Potential landslide hazard areas in the Planning Area are depicted on Figure 4.7-4. Landslide zones in the Planning Area are predominantly located west of SR-14 in the Sierra Pelona Mountains.

Erosive Soils

Soil erosion is the removal of soil by water and wind. The rate of erosion is estimated from four soil properties: texture, organic matter content, soil structure, and permeability. Other factors that influence erosion potential include the amount of rainfall and wind, the length and steepness of the slope, and the amount and type of vegetative cover. Portions of the Planning Area include hillside terrain, thus there is some erosive soil potential in these areas.

e. Paleontological Resources

Paleontology is a science dealing with the life of past geological periods as known from fossil remains. Paleontological resources in the City of Palmdale include five sedimentary rock units of high potential dating back to from 12 million to 10,000 years. These include the Punchbowl, Ana Verde, Harold Formations, the Nadeau Gravels/Pleistocene Old Alluvium, and Pleistocene Lacustrine and Fluvial Sediments. Additionally, there are five igneous and metamorphic rock units in the City with low potential to produce significant palaeontologic resources. These units include the Precambrian Pelona Schist, mesozoic metavolcanics, Mesozoic granite, quartz monzonite, and diorits. Historic paleontology records have confirmed that vertebrate paleontology localities have been recorded in the southeast corner of the Planning Area between the intersection of Pearblossom Highway and the California Aqueduct and Little Rock Wash. Furthermore, the Ana Verde formation along the San Andreas rift zone was found to be an ancient lake deposit containing fossil plants (Palmdale 1993).

4.7.2 Regulatory Setting

a. State

California Building Code

The California Building Code (CBC) is contained in the California Code of Regulations (CCR), Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which by law is responsible for coordinating all building standards. The CBC incorporates by reference the federal Uniform Building Code with necessary California amendments. The CBC is the regulatory tool that includes building code standards to address geologic and seismic hazards. Approximately one-third of the text in the CBC has been tailored for California earthquake conditions. The Los Angeles County Building Code is based on the California Building Codes. The Planning Area, like all of southern California, is in Seismic Zone 4, the area of greatest seismic risk subject to the strictest building standards.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was passed into law following the destructive February 9, 1971, magnitude 6.6 San Fernando earthquake. The Act provides a mechanism for reducing losses from surface fault rupture on a Statewide basis. The intent of the Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. The Act groups faults into active, potentially active, and inactive categories. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive.

The Alquist-Priolo Earthquake Fault Zoning Act regulates development near the surface traces of active faults to mitigate the hazard of surface fault rupture. Essentially, this Act contains two requirements: (1) it prohibits the location of most structures for human occupancy across the trace of active faults; and (2) it establishes Earthquake Fault Zones and requires geologic/seismic studies of most proposed development within 50 feet of the zone. The Earthquake Fault Zones are delineated and defined by the State Geologist and identify areas where potential surface rupture along a fault could occur.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (the Act) of 1990 was passed into law following the destructive October 17, 1989, magnitude 6.9 Loma Prieta earthquake. The Act directs the CGS to delineate Seismic Hazard Zones. The purpose of the Act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards, such as liquefaction, landslides, amplified ground shaking, and inundation by tsunami or seiche. Cities, counties, and State agencies are directed to use seismic hazard zone maps developed by CGS in their land-use planning and permitting processes. The Act requires that site-specific geotechnical investigations be performed prior to permitting most urban development projects within seismic hazard zones. CGS maintains these required maps.

b. Local

The Palmdale General Plan, the City of Palmdale Municipal Code (PMC), and the Local Hazard Mitigation Plan (LHMP) are intended to safeguard the life, health, property, and public welfare of Palmdale and are described below.

Palmdale Hazard Mitigation Plan

The LHMP analyzes natural and manmade hazards and mitigation procedures to help protect those who reside in Palmdale. Mitigation activities include adoption of disaster resistant ordinances and regulations, habitat restoration in streams, identifying hazard-prone areas, storage of excess runoff, fuel reduction in forests, and hardening structures and facilities at risk using structural and non-structural means.

City of Palmdale Municipal Code

PMC, Chapter 8.04 contains health, safety, and technical construction codes, which include requirements for construction near a known active earthquake fault. Additionally, the PMC requires an engineering geology and/or geotechnical engineering report containing a finding regarding the safety of the building site for the proposed structure against hazard from landslide, settlement or slippage and a finding regarding the effect that the proposed building or grading construction will have on the geologic stability of property outside of the building site.

4.7.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to geology and soils would be potentially significant if implementation of the Plan would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
 - b. Strong seismic ground shaking
 - c. Seismic-related ground failure, including liquefaction; and/or
 - d. Landslides
2. Result in substantial soil erosion or the loss of topsoil
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse
4. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

b. Project and Cumulative Impacts

Threshold 1.a:	Would the Plan directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?
Threshold 1.b:	Would the Plan directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?
Threshold 1.c:	Would the Plan directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?
Threshold 1.d:	Would the Plan directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Impact GEO-1 FUTURE SEISMIC EVENTS COULD PRODUCE GROUND SHAKING IN THE PLANNING AREA THAT COULD DAMAGE STRUCTURES AND/OR RESULT IN ADVERSE HEALTH AND SAFETY EFFECTS. HOWEVER, WITH IMPLEMENTATION OF PLAN POLICIES AND REQUIRED COMPLIANCE WITH BUILDING CODES, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The San Andreas fault traverses the southwestern portion of the Planning Area. A major seismic event on the San Andreas Fault could cause considerable damage to critical facilities and infrastructure. Additionally, the entire southern California region is susceptible to strong ground shaking from severe earthquakes, and, development could expose people and structures to strong seismic ground shaking. Therefore, projects carried out under the Plan have the potential to be subject to strong ground shaking in the event of an earthquake at one of the abovementioned faults.

Faults generally produce damage in two ways: surface rupture and seismically induced ground shaking. Surface rupture is generally limited to areas very near the fault, while ground shaking is typically reduced to the ground motion components, wave velocity and acceleration over a wider area. The velocity, acceleration, and predominant period of groundshaking at a given site are dependent upon the distance to the fault, the magnitude of the earthquake, and the fracture mechanics of the earthquake. Groundshaking also depends on the nature of the bedrock, alluvium, and soil through which shock waves must travel. Generally, shock waves attenuate with distance from the focus of the earthquake. Since the Planning Area lies along a portion of the San Andreas Fault, the area could be subject to surface rupture and seismically induced ground shaking in the event of a seismic activity along the San Andreas Fault.

As described in Section 2.3.5 and Section 2.3.6 of this EIR, the Plan would increase the amount of development carried out in the Planning Area compared to SCAG forecasts, but the Plan's approach to future development, as described in Chapter 2 and elsewhere throughout this EIR, would not involve substantial expansion of development opportunities outside already-developed parts of the Planning Area and to what is already allowed under the City's current General Plan.

Projects carried out under the Plan would be required to be designed and constructed in accordance with state and local building codes to reduce the potential for exposure of people or structures to seismic risks to the maximum extent possible. These projects would be required to comply with the seismic safety requirements in the latest California Building Code (CBC) and the PMC. Compliance

with such requirements would reduce seismic ground shaking impacts to the maximum extent practicable with current engineering practices. Furthermore, these projects would not increase ground shaking hazards at adjacent properties.

The Safety chapter of the Plan includes the following goals and policies intended to minimize the risks associated with seismic related hazards:

- **Goal SE-1: A city with minimal public health, safety, and welfare impacts resulting from seismic hazards.**
 - **Policy SE-1.2: California Building Code.** Require appropriate structural setbacks from active fault rupture traces in accordance with Alquist-Priolo standards and continue to follow California Building Code.
 - **Policy SE-1.3: Utility Lines Design.** Design utility lines crossing active fault traces to withstand the expected movement of the earth in these locations. Utility lines as defined here include, but are not to be limited to, electricity, water, internet, natural gas, and sewer.
 - **Policy SE-1.5: Local Hazard Mitigation Plan.** Implement the policies and mitigation strategies outlined within the Palmdale Local Hazard Mitigation Plan.
- **Goal SE-4: Minimize damage from catastrophic failure of infrastructure.**
 - **Policy SE-4.1: Evaluate inundation hazards.** As appropriate, evaluate inundation hazards related to the potential rupture of the California Aqueduct or failure of the Palmdale or Littlerock dams or location of proposed basins when reviewing development proposals.
- **Goal SE-7: Ensure safe evacuation of residents in the event of an emergency requiring evacuation.**
 - **Policy SE-7.1: Maintain Emergency Evacuation Map.** Maintain and, as necessary, update a map of designated emergency evacuation routes for various types of disasters (e.g., earthquake, wildfire, hazardous material release, dam failure) and disaster scenarios.
 - **Policy SE-7.2: Evacuation Route Information.** Make information regarding emergency evacuation routes readily available to all city residents.
 - **Policy SE-7.3: Review Development Consistency.** Review all new development for consistency with applicable evacuation plans and ensure access to at least two evacuation routes.
 - **Policy SE-7.4: Emergency Evacuation Evaluation.** Continue to evaluate evacuation route capacity, safety, and viability under a range of emergency scenarios.

Implementation of the policies above would serve to reduce the environmental impacts associated with earthquake zone faults and seismic shaking hazards. Through implementation of these policies, and for all the other reasons discussed above, this impact would be less than significant, and no mitigation is required.

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would implementation of the Plan result in substantial soil erosion or the loss of topsoil?

Impact GEO-2 THE PLAN WOULD NOT RESULT IN SUBSTANTIAL SOIL EROSION OR LOSS OF TOPSOIL. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

While foothill areas within and adjacent to the Planning Area contain significant slopes, the majority of the Planning Area is relatively flat terrain with no significant hillside areas or slopes. However, the area west of SR-14, in the Sierra Pelona Mountains, contains landslide zones.

Development associated under the proposed Plan may include earthwork activities that could expose soils to the effects of erosion or loss of topsoil. Once disturbed, soils, if not managed appropriately are left exposed to the effects of wind and water. Though no specific developments are being proposed under the Plan, implementation of the proposed Plan has the potential to expand the City's residential and commercial and Industrial development. As a result, excavation, grading, construction activities, and site preparation for future development may result in the removal of topsoil or disturb and potentially expose underlying soils to wind and water erosion. Poorly designed projects may also potentially destabilize buildings or roadway foundations due to long-term soil erosion and loss of underlying supporting soils. Future development may also include paving and other site improvements that could increase amounts of impervious surfaces and result in higher levels of urban runoff. Generally, construction activities on more than one acre are subject to the National Pollutant Discharge Elimination System (NPDES) permit. As a requirement under the NPDES permit, all such development activities have to follow best management practices that reduce soil erosion, loss of topsoil, and pollution of waterways. In addition, earthwork and ground-disturbing activities typically require grading permits, compliance with which minimizes erosion. Once construction is complete and exposed areas are revegetated or covered by buildings, asphalt, or concrete, the erosion hazard is substantially eliminated or reduced.

The City of Palmdale follows the California Building Code and has also established geologic and geotechnical policies and codes to review geologic and geotechnical studies for future projects. These policies and codes include the preparation of geological and geotechnical reports when deemed necessary for the safety of the site by building officials. All geotechnical studies must also be reviewed and approved by the City. Additionally, the City has also established the Palmdale Building Code to provide minimum standards to preserve the public peace, health and safety by regulating the design, construction, quality of materials, use, occupancy, location and maintenance of all buildings, structures, grading and certain equipment as specifically set forth herein. Furthermore, work requiring a building or grading permit is not permitted in an area determined by the Building Official or City Engineer to be subject to hazard from landslide, settlement or slippage. Geological hazards from future development under the Plan has the potential to include hazards such as those from loose debris, slope wash and the potential for mudflows from natural slopes or graded slopes. As such, the City will continue to ensure that the landslide hazards are analyzed, and that appropriate recommendations and remedial measures are implemented. Impacts would therefore be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 3: Would the projects carried out under the Plan be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Plan, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Impact GEO-3 FUTURE SEISMIC EVENTS ARE UNLIKELY TO RESULT IN LIQUEFACTION AND LATERAL SPREADING OF SOILS IN THE PLANNING AREA. ADDITIONALLY, DEVELOPMENT IN THE PLANNING AREA WOULD BE SUBJECT TO COMPLIANCE WITH APPLICABLE BUILDING CODES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Planning Area contains landslide zones on steep slopes (see Figure 4.7-4) and liquefaction zones (see Figure 4.7-5), but these areas cover a very small portion of the west and northwest of the Planning Area (LHMP 2016). These areas also tend not to be in areas that are currently developed or would be developed under the Plan. Additionally, any future structures that would be built on steep slopes could be exposed to an existing risk of landslide or if improperly constructed could exacerbate existing landslide conditions. However, all future development would be subject to the City's codes and requirements relative to geotechnical impacts. Though future development projects carried out under the Plan could be subject to structural damage, all new development would have to be constructed in compliance with California Building Code engineering design and construction measures. Foundations and other structural support features would be designed to resist or absorb damaging forces from strong ground shaking and liquefaction. Additionally, PMC, Chapter 8.04 of the requires an engineering geology and/or geotechnical engineering report, when the Building Official determines that these reports are essential for the evaluation of the safety of the site. Geotechnical reports must contain findings regarding the safety of the building site for the proposed structure against hazard from landslide, settlement or slippage and findings regarding the effect that the proposed building or grading construction will have on the geologic stability of property outside of the building site. Furthermore, new development facilitated by the Plan would be required to comply with the following policies from the Safety Element:

- **Goal SE-1: A city with minimal public health, safety, and welfare impacts resulting from seismic hazards.**
 - **Policy SE-1.2: California Building Code.** Require appropriate structural setbacks from active fault rupture traces in accordance with Alquist-Priolo standards and continue to follow California Building Code.
 - **Policy SE-1.3: Utility Lines Design.** Design utility lines crossing active fault traces to withstand the expected movement of the earth in these locations. Utility lines as defined here include, but are not to be limited to, electricity, water, internet, natural gas, and sewer.
 - **Policy SE-1.5: Local Hazard Mitigation Plan.** Implement the policies and mitigation strategies outlined within the Palmdale Local Hazard Mitigation Plan.

Compliance with the California Building code, the PMC, and applicable Plan policies would reduce impacts to less than significant.

Mitigation Measures

Mitigation beyond compliance with applicable Plan policies, provisions of the applicable building codes, and PMC is not required.

Threshold 4: Would projects carried out under the Plan be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Impact GEO-4 DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY RESULT IN THE CONSTRUCTION OF STRUCTURES ON EXPANSIVE SOILS THAT COULD CREATE A SUBSTANTIAL RISK TO LIFE OR PROPERTY. HOWEVER, ALL NEW DEVELOPMENT WOULD BE REQUIRED TO COMPLY WITH THE STANDARDS OF THE CBC, WHICH WOULD ENSURE THAT EXPANSIVE SOILS ARE REMEDIATED OR THAT FOUNDATIONS AND STRUCTURES ARE ENGINEERED TO WITHSTAND THE FORCES OF EXPANSIVE SOIL. COMPLIANCE WITH THE REQUIREMENTS OF THE CBC WOULD REDUCE THIS IMPACT TO A LESS THAN SIGNIFICANT LEVEL.

As discussed under section 4.7.1, *Environmental Setting*, expansive soils could potentially be encountered throughout the Planning Area. However, Figure 4.7-2 shows that the majority of the Planning Area consists of soils that have little (less than 50%) or no swelling potential. New development under the Plan would be concentrated on the central and southeastern portion of the City. Future development projects that may be constructed on expansive soils could be subject to damage or could become unstable when the underlying soil shrinks or swells. Soils with high clay content have the highest potential for shrink-swell. The California Building Code includes requirements to address soil-related hazards. Typical measures to treat hazardous soil conditions involve removal, proper fill selection, and compaction. In cases where soil remediation is not feasible, the California Building Code requires structural reinforcement of foundations to resist the forces of expansive soils. Compliance with the requirements of the California Building Code would reduce impacts related to expansive soils to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 5: Would projects carried out under the Plan have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Impact GEO-5 PROJECTS CARRIED OUT UNDER THE PLAN WOULD NOT INCLUDE THE USE OF SEPTIC TANKS OR ALTERNATIVE WASTEWATER SYSTEMS; THEREFORE, THERE WOULD BE NO IMPACT RELATED TO SOIL STABILITY FOR WASTEWATER SYSTEMS.

Development carried out under the Plan would connect to the City's existing wastewater system. In accordance with PMC Section 13.08.020, development located within 200 feet of public sewers is required to connect to public sewers. Development carried out under the Plan would be focused in areas containing existing development. New development would therefore have access to existing public sewers and would be required to connect with existing wastewater systems under PMC Section 13.08.020. Development carried out under the Plan would therefore connect to existing public sewers and would not require the addition of septic tanks. The Plan would not include the use of septic tanks or alternative wastewater systems, therefore there would be no impact related to soil stability for wastewater systems.

Mitigation Measures

None required beyond compliance with applicable Plan policies.

Threshold 6: Would projects carried out under the Plan directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact GEO-6 IMPACTS TO UNIQUE PALEONTOLOGICAL RESOURCES OR UNIQUE GEOLOGICAL FEATURES WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Paleontological resources may be present in fossil-bearing sediments and geologic units either at or below the ground surface. Ground-disturbing activities in geologic units with high paleontological sensitivity have the potential to damage or destroy paleontological resources that may be present. Therefore, activities resulting from implementation of the proposed Plan, including construction-related and earth-disturbing actions, could damage or destroy fossils in these geologic units resulting in a significant impact.

Effects on paleontological resources are only knowable once a specific project has been proposed because the effects are highly dependent on both the individual project site conditions (in this case, the geologic setting) and the characteristics of the proposed ground disturbing activities. Ground-disturbing activities associated with development would occur particularly in areas that have not previously been developed, have not been studied through a paleontological resource's investigation, or when excavation depths exceed those previously attained. Such future development projects have the potential to damage or destroy paleontological resources that may be present on or below the ground surface. To ensure that development within the Planning Area does not have a detrimental effect on paleontological resources, each project would need to be assessed for geology and soils impacts prior to project approval.

The City of Palmdale does not currently have a Historical Preservation Ordinance but does have goals and policies in place to protect paleontological and geological resources. New development under the Plan would be required to follow the following goal and policies from the Conservation Element to minimize impacts to paleontological resources or geologic features:

- **Goal CON-8: Protect historical and culturally significant resources, which contribute to the community's sense of history.**
 - **Policy CON-8.1: Historic landmark identification.** Identify and recognize historic landmarks from Palmdale's past.
 - **Policy CON-8.4: Preservation in new development.** Require that new development preserve significant historic, paleontological, or archaeological resources.
 - **Policy CON-8.5: Tribal consultation.** Conduct Native American consultation consistent with the applicable regulations when new development is proposed in potentially culturally sensitive areas.
 - **Policy CON-8.6: Discovery coordination with Tribal groups.** When human remains suspected to be of Native American origin are discovered, coordinate with the Native American Heritage Commission and any local Native American groups to determine the most appropriate course of action.
 - **Policy CON-8.7: Cooperation with preservation entities.** Cooperate with private and public entities whose goals are to protect and preserve historic landmarks and important cultural resources.

Compliance with the Plan policies would reduce the potential for projects carried out under the Plan to have a substantial impact on unique paleontological resources or sites or unique geologic features. Still, there would be potential for development under the Plan to adversely impact

paleontological resources through construction-related and earth-disturbing activities and Mitigation Measure GEO-1 would be required to reduce impacts.

Mitigation Measures

GEO-1 Unanticipated Discovery of Paleontological Resources

If paleontological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project paleontologist shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and paleontological testing. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.

Significance After Mitigation

Implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to less than significant levels by ensuring the avoidance of paleontological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery paleontological resources that may be impacted by future projects in a timely manner.

4.7.4 Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within a jurisdiction's planning area. Therefore, the analysis of Plan impacts also constitutes the cumulative analysis. Exposure to geologic hazards is site-specific. For example, development on one property would not increase exposure to hazards such as fault rupture and seismic shaking on another property, and therefore there would be no potential for cumulative impacts. Potential impacts to paleontological resources are also site-specific. Other hazards discussed in this chapter, such as soil erosion or loss of topsoil, are more cumulative in nature. For example, development on multiple properties in a watershed may combine to create a cumulative impact related to increased runoff and erosion from impervious surfaces. As discussed in this impact analysis, projects carried out under the Plan may increase the potential for runoff, soil erosion or unstable soils, but implementation of the policies and actions contained in the Plan, combined with compliance with existing laws, regulations, and Mitigation Measure GEO-1, would reduce project-level impacts to a less than significant level. For all the reasons discussed above, the Plan would not make a substantial contribution to cumulative geology and soils and impacts would be less than cumulatively significant/cumulatively less than significant.

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4.8 Greenhouse Gas Emissions

This section analyzes the potential impacts of the Plan related to greenhouse gas (GHG) emissions and climate change. This analysis herein is based partially on the growth forecasts as described in Section 2, *Project Description*, as well as transportation modeling and vehicle miles traveled (VMT) data provided by Traffic Report prepared by Parsons in February 2022 (Appendix D.)

4.8.1 Environmental Setting

a. The Greenhouse Effect and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but climate change is preferred because it conveys other changes are happening in addition to rising temperatures. The baseline against which these changes are measured originates in historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record, which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming over the past 150 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) expressed that the rise and continued growth of atmospheric CO₂ concentrations is unequivocally due to human activities in the IPCC's Sixth Assessment Report (2021). Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, that a total of 2,390 gigatons of anthropogenic CO₂ was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius (°C) between the years 2010 through 2019 (IPCC 2021). Emissions resulting from human activities are thereby contributing to an average increase in the temperature of Earth.

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are usually by-products of fossil fuel combustion, and CH₄ results from off-gassing associated with agricultural practices and landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases and SF₆ (USEPA 2022a).

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon

dioxide equivalent” (CO₂e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO₂ on a molecule per molecule basis (IPCC 2021).¹

The accumulation of GHGs in the atmosphere regulates the earth’s temperature. Without the natural heat-trapping effect of GHGs, the earth’s surface would be about 33 degrees °C cooler (World Meteorological Organization 2020). However, since 1750, estimated concentrations of CO₂, CH₄, and N₂O in the atmosphere have increased by 47 percent, 156 percent, and 23 percent, respectively, primarily due to human activity (IPCC 2021). GHG emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

b. Greenhouse Gas Emissions Inventory

In 2015, worldwide anthropogenic GHG emissions totaled 47,000 billion MT of CO₂e, which is a 43 percent increase from 1990 GHG levels (USEPA 2022b). Specifically, 34,522 million metric tons (MMT) of CO₂e of CO₂, 8,241 MMT of CO₂e of CH₄, 2,997 MMT of CO₂e of N₂O, and 1,001 MMT of CO₂e of fluorinated gases were emitted in 2015. The largest source of GHG emissions were energy production and use (includes fuels used by vehicles and buildings), which accounted for 75 percent of global GHG emissions. Agriculture uses and industrial processes contributed 12 percent and six percent, respectively. Waste sources contributed for three percent and two percent was due to international transportation sources. These sources account for approximately 98 percent because there was a net sink of two percent from land-use change and forestry (USEPA 2022b).

United States Emissions Inventory

Total U.S. GHG emissions were 6,558 MMT of CO₂e in 2019. Emissions decreased by 1.7 percent from 2018 to 2019; since 1990, total U.S. emissions have increased by an average annual rate of 0.06 percent for a total increase of 1.8 percent between 1990 and 2019 (USEPA 2021). The decrease from 2018 to 2019 reflects the combined influences of several long-term trends, including population changes, economic growth, energy market shifts, technological changes such as improvements in energy efficiency, and decreased carbon intensity of energy fuel choices. In 2019, the industrial and transportation end-use sectors accounted for 30 percent and 29 percent, respectively, of nationwide GHG emissions while the commercial and residential end-use sectors accounted for 16 percent and 15 percent of nationwide GHG emissions, respectively, with electricity emissions distributed among the various sectors (USEPA 2021).

California Emissions Inventory

Based on the CARB California Greenhouse Gas Inventory for 2000-2019, California produced 418.2 MMT of CO₂e in 2019, which is 7.2 MMT of CO₂e lower than 2018 levels. The major source of GHG emissions in California is the transportation sector, which comprises 40 percent of the state’s total GHG emissions. The industrial sector is the second largest source, comprising 21 percent of the state’s GHG emissions while electric power accounts for approximately 14 percent (CARB 2021). The magnitude of California’s total GHG emissions is due in part to its large size and large population compared to other states. However, a factor that reduces California’s per capita fuel use and GHG

¹ The Intergovernmental Panel on Climate Change’s (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change’s (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

emissions as compared to other states is its relatively mild climate. In 2016, the State of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMT of CO₂e (CARB 2021). The annual 2030 statewide target emissions level is 260 MMT of CO₂e (CARB 2017).

Local Emissions Inventory

The City of Palmdale prepared a GHG inventory for the City using 2017 as its baseline year (City of Palmdale 2020). Community wide emissions totaled 1,042,248 MT CO₂e in 2017. Table 4.8-1 summarizes the results of the 2017 GHG inventory. On-road transportation was the major source accounting for 59 percent of the total, largely due to passenger vehicles.

Table 4.8-1 Palmdale Community Energy Consumption by Sector 2017

Community Sector	Subsector	Subsector (MTCO ₂ e)	Sector (MTCO ₂ e)	Percent of Total
Transportation	On-Road Transportation	615,601	615,601	59%
Nonresidential Energy	Electricity	119,700	162,010	16%
	Natural Gas	42,310		
Residential Energy	Electricity	90,470	197,650	19%
	Natural Gas	107,080		
Water	Water Use	27,900	27,900	3%
Solid Waste	Landfilled Waste	30,490	30,490	3%
Off-Road	Lawn and Garden Equipment	1	681	1%
	Construction Equipment	680		
Total		1,042,248		100%

*Totals may not add directly due to rounding

Source (City of Palmdale 2020)

c. Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Each of the past three decades has been warmer than all previous decades in the instrumental record, and the years 2013–2021 all rank among the 10 warmest years on record. The global annual temperature has increased at an average rate of 0.08°C (0.14 degrees Fahrenheit [°F]) per decade since 1880 and over twice that rate (0.18°C / 0.32°F) since 1981. (National Oceanic and Atmospheric Administration 2022). Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations jointly indicate that LSAT and sea surface temperatures have increased.

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2018). In addition to statewide projections, *California's Fourth Climate Change*

Assessment includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally specific climate change case studies (State of California 2018). However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. The following information summarizes some of the potential effects that could be experienced in California as a result of climate change.

Air Quality

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (State of California 2018). Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (State of California 2018). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state. With increasing temperatures, shifting weather patterns, longer dry seasons, and more dry fuel loads, the frequency of large wildfires and area burned is expected to increase (California Natural Resources Agency 2021).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts (State of California 2018). The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack (State of California 2018). Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (State of California 2018).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (State of California 2018). Furthermore, climate change could induce substantial sea level rise in the coming century.

Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 1993 to 2020, observed by satellites, is approximately 100.8 millimeters (3.4 millimeters per year), double the 20th century trend of 1.6 millimeters per year (World Meteorological Organization 2013; National Aeronautics and Space Administration 2020). Global mean sea levels in 2013 were about 0.23 meter higher than those of 1880 (National Aeronautics and Space Administration 2020). Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise ranging between 0.25 to 1.01 meters by 2100 with the sea level ranges dependent on a low, intermediate, or high GHG emissions scenario (IPCC 2021). A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure (State of California 2018). Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has an over \$50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts (California Department of Food and Agriculture 2020). Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect quality (California Climate Change Center 2006).

Ecosystems and Wildlife

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions due to higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2018).

4.8.2 Regulatory Setting

The following regulations address both climate change and GHG emissions.

a. Federal Regulations

Federal Clean Air Act

The U.S. Supreme Court determined in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) that the USEPA has the authority to regulate motor vehicle GHG emissions under the federal Clean Air Act. The USEPA issued a Final Rule for mandatory reporting of

GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the USEPA issued a Final Rule that established the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agency* (134 Supreme Court 2427 [2014]), the U.S. Supreme Court held the USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits otherwise required based on emissions of other pollutants may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

Safer Affordable Fuel-Efficient Vehicles Rule

On September 27, 2019, the USEPA and the National Highway Traffic Safety Administration published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program. The SAFE Rule Part One revokes California's authority to set its own GHG emissions standards and to adopt its own zero-emission vehicle mandates. On April 30, 2020, the USEPA and the National Highway Traffic Safety Administration published Part Two of the SAFE Vehicles Rule, which revised corporate average fuel economy and CO₂ emissions standards for passenger cars and trucks of model years 2021-2026 such that the standards increase by approximately 1.5 percent each year through model year 2026 as compared to the approximately five percent annual increase required under the 2012 standards (National Highway Traffic Safety Administration 2020). To account for the effects of the SAFE Vehicles Rule, CARB released off-model adjustment factors on June 26, 2020, to adjust GHG emissions outputs from the EMFAC model (CARB 2020a).

b. State Regulations

CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

Executive Order S-3-05

In 2005, the governor issued Executive Order (EO) S-3-05, which identifies statewide GHG emission reduction targets to achieve long-term climate stabilization as follows:

- Reduce GHG emissions to 1990 levels by 2020; and,
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

In response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the "2006 CAT Report") (CalEPA 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, etc.

California Global Warming Solutions Act of 2006 (Assembly Bill 32 and Senate Bill 32)

The “California Global Warming Solutions Act of 2006,” (Assembly Bill [AB] 32), outlines California’s major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT CO₂e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan’s approval.

The CARB approved the 2013 Scoping Plan update in May 2014. The update defined the CARB’s climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California’s progress toward meeting the “near-term” 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the State’s longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100 (discussed later). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six MT CO₂e by 2030 and two MT CO₂e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state (CARB 2017).

The Draft 2022 Scoping Plan Update has been prepared to assess the progress toward the 2030 target as well as to outline a plan to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State’s long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities (CARB 2022).

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the State’s ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns

regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline CEQA processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Southern California Association of Governments (SCAG) was assigned targets of an eight percent reduction in per capita GHG emissions from passenger vehicles by 2020² and a 19 percent reduction in per capita GHG emissions from passenger vehicles by 2035. In the SCAG region, SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

Senate Bill 350

Adopted on October 7, 2015, SB 350 supports the reduction of GHG emissions from the electricity sector through a number of measures, including requiring electricity providers to achieve a 50 percent renewables portfolio standard by 2030, a cumulative doubling of statewide energy efficiency savings in electricity and natural gas by retail customers by 2030.

Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

The bill also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with the State board, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, the former Governor Brown issued Executive Order (EO) B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

² SCAG met 2020 GHG reduction but confirmation from CARB is still pending.

Executive Order N-79-20

On September 23, 2020, Governor Newsom issued Executive Order (EO) N-79-20, which established the following new statewide goals:

- All new passenger cars and trucks sold in-state to be zero-emission by 2035;
- All medium- and heavy-duty vehicles in the state to be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and,
- All off-road vehicles and equipment to be zero-emission by 2035 where feasible.

EO N-79-20 directs CARB, the Governor's Office of Business and Economic Development, the CEC, the California Department of Transportation, and other state agencies to take steps toward drafting regulations and strategies and leveraging agency resources toward achieving these goals.

California Building Standards Code

The California Code of Regulations Title 24 is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2019 Title 24 standards. The California Building Standards Code's energy-efficiency and green building standards are outlined below.

Part 6 – Building Energy Efficiency Standards/Energy Code

The California Code of Regulations Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission (CEC). The 2019 Title 24 standards are the applicable building energy efficiency standards for the project because they became effective on January 1, 2020.

Part 11 – California Green Building Standards

The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 California Building Standards Code). The 2019 CALGreen includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures. It also includes voluntary tiers (Tiers I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory CALGreen standards and may adopt additional amendments for stricter requirements.

The mandatory standards require:

- 20 percent reduction in indoor water use relative to specified baseline levels;³
- 65 percent construction/demolition waste diverted from landfills;
- Inspections of energy systems to ensure optimal working efficiency;
- Low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards;
- Dedicated circuitry to facilitate installation of electric vehicle (EV) charging stations in newly constructed attached garages for single-family and duplex dwellings;
- Installation of electric vehicle charging stations at least three percent of the parking spaces for all new multi-family developments with 17 or more units; and,
- PV systems battery, storage systems, and solar ready for newly constructed residential dwellings, including single-family, and low-rise (three or fewer habitable floors) multifamily buildings.

The voluntary standards require:

- **Tier I:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste with third-party verification, 10 percent recycled content for building materials, 20 percent permeable paving, and 20 percent cement reduction; and,
- **Tier II:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste with third-party verification, 15 percent recycled content for building materials, 30 percent permeable paving, and 25 percent cement reduction.

California Integrated Waste Management Act (Assembly Bill 341)

The California Integrated Waste Management Act of 1989 (initially passed as AB 939), as modified by AB 341 in 2011, requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995 through source reduction, recycling, and composting activities and (2) diversion of 50 percent of all solid waste on and after January 1, 2000.

c. Regional and Local Regulations

2020 - 2045 SCAG Regional Transportation Plan

On September 3, 2020, the SCAG's Regional Council formally adopted the 2020-2045 RTP/SCS entitled Connect SoCal. The 2020-2045 RTP/SCS builds upon the progress made through implementation of the 2016-2040 RTP/SCS and includes 10 goals focused on promoting economic prosperity, improving mobility, protecting the environment, and supporting healthy/complete communities. The SCS implementation strategies include focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, and supporting implementation of sustainability policies. The SCS establishes a land use vision of center-

³ Similar to the compliance reporting procedure for demonstrating Energy Code compliance in new buildings and major renovations, compliance with the CALGreen water reduction requirements must be demonstrated through completion of water use reporting forms. Buildings must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CALGreen or a reduced per-plumbing-fixture water use rate.

focused placemaking, concentrating growth in and near Priority Growth Areas, transferring of development rights, urban greening, creating greenbelts and community separators, and implementing regional advance mitigation (SCAG 2020a).

City of Palmdale General Plan 2045

The City of Palmdale has established a series of goals and policies in the 2045 City of Palmdale General Plan to reduce GHG emissions and increase sustainability. The Sustainability, Climate, and Resilience chapter of the Plan serves as the Climate Action Plan (CAP) for the City of Palmdale. The City of Palmdale developed the CAP to reduce emissions and make Palmdale a more sustainable, healthier, and resilient community. Pursuant with CEQA Guidelines Section 15183.5, the CAP would meet the requirements of a qualified CAP and future residential projects developed under the Plan would be able to tier from the CAP for analysis purposes. The following CAP policies are being introduced to reduce the City's emissions in conjunction with the State reduction goals:

SUSTAINABILITY, CLIMATE ACTION, AND RESILIENCE

Maintain and Implement CAP

- **Goal SCR-1: Achieve a carbon neutral community by 2045 (EO B-55-18).**
 - **SCR-1.1 CAP Maintenance.** Maintain and regularly update a Climate Action Plan to reduce GHGs generated within the City.
 - **SCR-1.2 GHG Inventory.** Conduct community GHG inventories every 3-5 years to track progress toward achieving the City's GHG reduction goal.
 - **SCR-1.3 Funding Sources.** Seek funding to support implementation of GHG reduction projects for the City, residents, and businesses.
 - **SCR-1.4 Community Engagement.** Develop and implement comprehensive community engagement including educational outreach, issue-specific awareness campaigns, and technical assistance.

Clean Energy

- **Goal SCR-2: Utilize a fossil fuel free energy system (SB 100).**
 - **SCR-2.1 Carbon Free Energy.** Direct EPIC to provide 75% carbon-free or renewable electricity to residents and businesses by 2030, achieving 100% carbon-free electricity by 2045.
 - **SCR-2.2 Community Solar.** Explore the development of community solar projects and microgrids.
 - **SCR-2.3 Battery Permitting.** Establish a streamlined approval process for battery storage systems.

Buildings

- **Goal SCR-3: Green and decarbonized buildings for new construction and major renovations.**
 - **SCR-3.1 Energy Efficient New Construction.** Integrate CALGreen Tier 1 and Tier 2 green building and energy efficiency standards into new construction and major remodels.
 - **SCR-3.2 All-Electric Reach Code.** Consider adopting a local reach code to encourage new buildings to be all-electric.

- **SCR-3.3 Solar + Storage.** Require installation of photovoltaic panels and battery storage on all residential new construction and nonresidential new construction over 5,000 sq. ft.
- **SCR-3.4 Energy Efficient Existing Buildings.** Establish an energy and water efficiency upgrade program for existing buildings, focusing resources on the most underserved populations.
- **SCR-3.4 Benchmarking Energy and Water Use.** Register municipal buildings with Energy Star Portfolio Manager and report energy and water use (AB 802).

Transportation

- **Goal SCR-4: Reduced greenhouse gas emissions from transportation (SB 379, EO N-79-20).**
 - **SCR-4.1 Bike Facilities.** Promote bicycle use with new private development projects through requirements for bicycle parking, lockers and showers, bike share facilities, and when feasible, connections to City bike lanes.
 - **SCR-4.2 Public Transit.** Expand the public transit system, increase frequency of service, and provide shade at transit stops.
 - **SCR-4.3 Public EV Chargers.** Install EV chargers at suitable public facilities, including Downtown parking structures, the future multi-modal High Speed Rail station, and community parks.
 - **SCR-4.4 EV Reach Code.** Adopt EV requirements beyond CALGreen in both number of chargers and charger capacity.
 - **SCR-4.5 ZEV Purchasing.** When purchasing City vehicles give preference to fuel efficient vehicles, including the use of zero emission vehicles.
 - **SCR-4.6 Clean Fuels.** Require use of clean fuels for City construction and maintenance vehicles and lawn/garden equipment.
 - **SCR-4.7 Pedestrian and Cyclist Safety.** Improve bicycle and pedestrian modes of travel by improving pedestrian and cyclist safety. Example techniques include increasing the number of sidewalks, pending connected and protected bike lanes, and redesigning high incidence intersections.

Solid Waste

- **Goal SCR-5: Increased resource capture and reduced waste sent to landfills (SB 1383).**
 - **SCR-5.1 Zero Waste Plan.** Create a zero-waste plan that institutes cost-effective diversion programs for municipal operations and the community.
 - **SCR-5.2 Organic Waste Diversion.** Establish programs to comply with State-established requirements for organics and food waste diversion.
 - **SCR-5.3 Waste Diversion Education and Assistance.** Develop an education and technical assistance program for residents and businesses on composting, recycling, and reuse of materials.
 - **SCR-5.4 Nonresidential Collection Efficiency.** Explore modifying waste franchise agreements to establish rate structures that encourage less frequent nonresidential collection.

Water and Wastewater

- **Goal SCR-6: Safe and secure water supply.**
 - **SCR-6.1 Recycled Water.** Increase availability of local recycled water.
 - **SCR-6.2 Water Efficiency Standards.** Establish water efficiency standards that are more stringent than CALGreen and model water efficient landscape ordinance (MWELO).
 - **SCR-6.3 Low-Water Use Plant List.** Implement the City’s landscape plant list and use of low-water plants in new or renovated landscaped areas.
 - **SCR-6.4 Rainwater Capture.** Encourage rainwater capture and use of cisterns for outdoor watering purposes.
 - **SCR-6.5 Greywater Permitting.** Establish a streamlined permitting process for greywater systems.

Ecosystems

- **Goal SCR-7: Open spaces designed to provide multiple climate and sustainability functions.**
 - **Policy SCR-7.1: Tree Planting in Public Spaces.** Plant additional trees on streets, parks, and other public spaces to sequester carbon, provide shade, contribute to stormwater management, provide habitat, and enhance community character.
 - **Policy SCR-7.2: Preferred Tree and Plant List.** Establish a preferred tree list of species appropriate for the urban forest which are more resilient to drought, heat, and pests. Prioritize native plants and pollinator-friendly plants.
 - **Policy SCR-7.3: Tree Planting on Private Property.** Adopt a tree preservation ordinance to encourage tree preservation and additional planting on private property as appropriate.
 - **Policy SCR-7.4: Green Infrastructure.** Integrate green infrastructure stormwater management practices into the design of open spaces and public rights-of-way.
 - **Policy SCR-7.5: Cool Pavement.** Incorporate cool pavement practices into street maintenance activities to reduce the urban heat island effect.

Community Resilience and Awareness

- **Goal SCR-8: Proactively advance community resilience.**
 - **Policy SCR-8.1: Local Hazard Mitigation Plan.** Build on the existing LHMP and acknowledge the LHMP in the General Plan per AB 2140.
 - **Policy SCR-8.2: Areas of Physical and Social Vulnerability.** Focus investments on areas of high vulnerability, exposure, and sensitivity for both physical infrastructure and social communities.
 - **Policy SCR-8.3: Public Safety Power Shutoffs.** Work with Southern California Edison (SCE) to minimize the impacts of Public Safety Power Shutoffs.
 - **Policy SCR-8.4: Resilience Features.** Add resilience features to community facilities to provide basic services during disruptive events or disasters.
 - **Policy SCR-8.5: Pre-Disaster Recovery Plan.** Create a pre-disaster recovery plan that sets up post-disaster policies and programs indicating which areas will be replanned and when, and that shows where and how rebuilding will occur.

- **Policy SCR-8.6: Disaster Rebuilding and Recovery.** Develop policies to ensure that housing units damaged during a natural disaster are repaired or replaced in ways that advance the policies, objectives, and actions of the General Plan.
- **Policy SCR-8.7: Heat and wildfire mitigation.** Develop policies and building standards that reduce the urban heat island effect and the risk and damage of wildfire such as:
 - Encourage the use of high-albedo roofs and paving
 - Incorporate more robust temperature and air quality controls in facility retrofits and designs
 - Provide consolidated public messaging about wildfire preparation, evacuation, and communications avenues in multiple languages
 - Encourage fire-wise landscaping including alternatives to wood fencing
 - Require ember-resistant attic ventilation openings
 - Encourage the installation of air filters to protect against indoor air quality impacts during wildfire smoke exposure events
 - Identify and modify vulnerable infrastructure in high wildfire risk areas, such as replacing wooden utility poles or undergrounding utility lines
- **Goal SCR-9: Awareness of Palmdale’s environmental past and present.**
 - **Policy SCR-9.1: Integration of Sustainability.** Integrate environmental and sustainability issues into City decision-making processes, operations, community activities, and criteria in budgeting and prioritization efforts through a “triple bottom line” approach.
 - **Policy SCR-9.2: Acknowledge Indigenous History.** Acknowledge and celebrate the Indigenous history and tradition of the area now known as Palmdale.
 - **Policy SCR-9.3: Raise Awareness about Natural Systems.** Provide interpretive displays and other information on natural systems at parks, nature centers, and trailheads.

4.8.3 Impact Analysis

a. Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to GHG emissions would be potentially significant if implementation of the Plan would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project’s contribution towards, an impact would be cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines Section 15064[h][1]).

Section 15064.4 of the *CEQA Guidelines* recommends that lead agencies quantify GHG emissions of projects and consider several other factors that may be used in the determination of significance of GHG emissions from a project, including the extent to which the project may increase or reduce GHG emissions; whether a project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHG emissions. The AVAQMD does not have adopted GHG emissions thresholds. The City of Palmdale has prepared a qualified CAP pursuant to CEQA Guidelines Section 15183.5(b). The CAP will serve as a “qualified plan for the reduction of greenhouse gases” and provide a mechanism for tiering and streamlining of GHG emissions analysis for projects that are consistent with such a plan.

As part of the CAP, the City of Palmdale has established GHG reduction targets consistent with the statewide goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 (478,418 MTCO₂e). Additionally, the CAP provides additional reductions beyond what is needed to achieve the 2017 Scoping Plan 2030 goal and advances the City’s progress toward the ultimate goal of carbon neutrality by 2045. As discussed in the 2017 Scoping Plan, technology is not currently available to reach the 2050 goal of 80 percent below 1990 levels and thus that the technology to reach carbon neutrality by 2045 is also not available (CARB 2017). Therefore, exceedance of the 2030 goal is used to determine significance for this analysis. While there is a Draft 2022 Scoping Plan, the Plan has not been adopted at the time of this analysis and therefore, compliance relies on the existing adopted 2017 Scoping Plan.

This analysis uses the emissions forecasts in the City’s CAP to develop per-service population emissions targets. City specific emissions targets provide an easy tiering mechanism while allowing the City to support the State’s overall reduction goals. The following goals have been established and would be adopted by the City as part of the Plan. Per service-population targets for Palmdale are as follows: 2 MT CO₂e per service population by 2030, 1.3 MT CO₂e per service population by 2035, and 1.2 MT CO₂e per service population by 2045. Per-service population emissions are calculated by dividing total community emissions by the residents plus employees. Table 4.8-2 shows the per-service population thresholds based on the CAP emissions estimates for 2030, 2035, and 2045.

Table 4.8-2 Per-Service Population Thresholds

	2030	2035	2045
BAU ¹	1,179,398	1,236,709	1,352,322
Adjusted BAU ²	813,335	753,932	706,943
Reductions from CAP Measures	334,917	375,107	336,987
Total City Emissions	478,418	378,825	369,956
Service Population	241,962	296,562	296,562
Per-Service Population Threshold	2.0	1.3	1.2

¹ The BAU scenario projects future emissions based on current population and regional growth trends, climate patterns and their impacts on energy use, and regulations (Federal, State, and local) introduced before the 2017 inventory year

² The Adjusted BAU forecast shows how Palmdale’s emissions are anticipated to change while accounting for the impacts of adopted State climate-related policies if no action is taken at the local level

Source: Raimi and Associates 2022 (Sustainability, Climate and Resilience); Appendix B

b. Methodology

Construction Emissions

Although construction activity is addressed in this analysis, CAPCOA does not discuss whether any of the suggested threshold approaches adequately address impacts from temporary construction activity. As stated in the CEQA and Climate Change white paper, “more study is needed to make this assessment or to develop separate thresholds for construction activity” (CAPCOA 2008). Nevertheless, air districts have recommended amortizing construction-related emissions over a 30-year period in conjunction with the proposed project’s operational emissions.

Construction of projects carried out under the Plan would generate temporary GHG emissions primarily from the operation of on-site construction equipment, as well as from vehicles transporting construction workers to and from the project site and heavy trucks to export earth materials off site. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling.

Construction related GHG emissions associated with the Plan were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 (Appendix B). Emissions were based on the estimated annual growth anticipated under the Plan. Growth for land uses were annualized over 20 years to provide a conservative estimate of the amount of growth that might occur in one year. Emissions were estimated for sample projects for each land use type that has the potential to occur in one year (1/20th of all land uses except for hotel). Annual emissions were then multiplied by 20 to determine total construction emissions anticipated from buildout. Hotel growth was assumed at 58 rooms in one year, this annual construction estimate was multiplied by three to determine total emissions from the construction of up to 174 new hotel rooms throughout the City. Construction emissions were based on average fleet emissions in 2022. This represents a conservative estimate of construction emissions that will occur over the Plan buildout as emissions from construction fleets are anticipated to be reduced as older equipment is replaced by newer-more efficient equipment in later years.

Operational Emissions

A GHG emissions inventory identifies the major sources and quantities of GHG emissions produced by community-wide activities within a jurisdiction’s boundaries for a given year. The CAP includes a 2017 baseline inventory of GHG emissions from community-wide activities within the city, as well as a 2030, 2040, and 2045 “business-as-usual” forecast of how emissions in Palmdale would change if consumption trends and behavior continue as they did through 2017, absent any new federal, State, regional, or local policies or action that would reduce those emissions.

However, since 2017, several State regulations (i.e., SB 1, SB 100, AB 1493) have been enacted that would reduce future local emissions. The CAP incorporated these regulations into an adjusted forecast, which provides a more accurate picture of future emissions growth and the emission reductions community would be responsible for after State regulations have been implemented.

After analyzing the City’s baseline inventory and forecast scenarios, emission targets were set to create quantitative goals that would further the City’s ability to measure emission reduction progress from the baseline scenario, based on the emissions inventories provided in the CAP.

This analysis relies on the operational emissions quantifications in the CAP because buildout under the CAP would be identical to buildout under the Plan. Full methodology and calculations for the quantification of operational emissions can be found in Appendix B.

c. Project and Cumulative Impacts

Threshold 1: Would the Plan generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact GHG-1 IMPLEMENTATION OF PROJECTS CARRIED OUT UNDER THE PLAN WOULD NOT INCREASE PER SERVICE POPULATION GHG EMISSIONS. THE CAP IS PART OF THE PLAN AND SHOWS PER SERVICE POPULATION EMISSIONS REDUCTIONS OVER TIME. ALL FUTURE PROJECTS WOULD BE REQUIRED TO COMPLY WITH THE CAP. THE PLAN WOULD THEREFORE HAVE A LESS THAN SIGNIFICANT IMPACT ON GHG EMISSIONS.

Construction

Construction emissions were quantified based on annualized growth assumptions as detailed in the methodology section above. Construction emissions for the Plan are identified in Table 4.8-3. Amortized total emissions are added to the operational emissions estimates from the CAP to determine significance.

Table 4.8-3 Amortized Construction Emissions¹

Land Use	Annual Emissions (MT CO ₂ e) ²	Total Plan Emissions (MT CO ₂ e) ³
SFR	394	7,871
MFR	1,240	24,807
Retail/Restaurant	266	5,314
Hotel	281	844
Office	443	8,870
Industrial	799	15,985
School	255	5,091
Government Office	63	1,269
Total		70,052

MT CO₂e = metric tons of carbon dioxide equivalents.

¹ Amortized emissions are total construction emissions divided by a 30 year estimated lifetime of the land uses developed under the Plan.

² Annual emissions represent one year of construction emissions by land-use type.

³ Total Plan emissions represent the total emissions required to fully build out the Plan.

Source: Appendix B

Operation

The City of Palmdale has forecasted GHG emissions inventory for the City for the years 2030, 2035, and 2045, which is summarized in Table 4.8-2. As part of the CAP, Palmdale is committed to an emissions reduction target of 40 percent below 1990 levels by 2030 and working toward reaching a longer-term goal of carbon neutrality by 2045. This 2030 GHG emissions goal is selected to be consistent with EO-B-3-05 State emissions targets and CEQA Guidelines Section 15183.5 for a qualified GHG emissions reduction strategy as well as to be achievable by City-supported measures identified in the CAP. The CAP includes a business-as-usual (BAU) forecast of GHG emissions that would enable the City to estimate the amount of emissions reductions needed to meet its goal. shows the projected community emissions by year under the BAU scenario, the adjusted emissions

accounting for implementation of State actions to reduce GHG emissions, emissions reductions achieved by implementation of the CAP, and the GHG emissions targets.

The CAP includes a list of 43 measures intended to reduce Palmdale’s GHG emissions. Implementation of the CAP would result in the reduction of community and municipal operational GHG emissions. Additionally, the CAP would serve as a pathway to reduce GHG emissions and introduce other beneficial environmental and sustainability effects. These benefits include reduction in building energy consumption and VMT (and thus air pollution), water consumption, and solid waste generation. Therefore, the CAP would result in a less-than-significant impact related to generation of GHG emissions as it attains the 2030 goal of reducing emissions to 40 percent below 1990 levels.

Construction emissions generated by development under the Plan, added to the existing CAP estimates for the years 2030, 2035, and 2045 would result in annual emissions of 480,752 MT CO₂e, 381,159 MTCO₂e, and 371,244 MT CO₂e respectively, as shown in Table 4.8-4. These totals, divided by the estimated service population for the associated years would equate to estimated 2.0 MT CO₂e per service population, 1.3 MT CO₂e per service population, and 1.3 MT CO₂e per service population annual emissions, respectively. The estimated emissions per service population are consistent with the significance thresholds for 2030 and 2045. While the Plan’s 2045 service population emissions with construction emissions exceed the operational only service population target of 1.2 MT CO₂e by 2045, the threshold was developed without accounting for temporary construction emissions amortized over the life of the Plan. Additionally, the amortized construction emissions do not take into account GHG emissions reductions to the standard fleet used due to the turn-over of older equipment between 2022 and 2045, nor does it take into account the use of alternative fueled equipment (such as electric) that may be required on a project-by-project basis to meet threshold requirements for Plan projects that may be required to undergo the CEQA process independent of this analysis. Further, the 2045 estimated emissions and CAP reductions are subject to change as the CAP is updated as required by the CAP itself (Policy SCR-1.1 CAP Maintenance), therefore the projected emissions reductions needed and the per-service threshold for 2045 would ultimately change between the adoption of this document and Plan buildout. Given that the technology does not currently exist to reach carbon neutrality by 2045, the anticipated updates to the CAP, and that construction emissions were not accounted for in the CAP emissions projections, the reduction of per service population emissions to 1.3 MT CO₂e annually by 2045 when including plan related construction emissions, satisfies the emissions reduction requirement of below 2 MT CO₂e per service population threshold and the combined construction and operational plan emissions would be less than significant.

Table 4.8-4 Palmdale Estimated Plan wide emissions by year

	2030	2035	2045
Amortized construction Emissions	2,334	2,334	2,334
Cap Operational Emissions	478,418	378,825	369,956
Total Emissions	480,752	381,159	372,290
Service Population	241,962	260,162	296,562
Per service population Emissions	2.0	1.5	1.3
Thresholds	2.0		

Source: Raimi and Associates 2022 (Sustainability, Climate and Resilience), Appendix B

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would the Plan conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Impact GHG-2 THE PLAN WOULD NOT CONFLICT WITH ANY APPLICABLE PLAN, POLICY, OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GHGs. THE PLAN WOULD THEREFORE HAVE A LESS THAN SIGNIFICANT IMPACT ON GHG EMISSIONS.

2017 Scoping Plan

The principal state plans and policies are AB 32, the California Global Warming Solutions Act of 2006, and the subsequent legislation, SB 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020 and the goals of SB 32 are to reduce GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. Pursuant to the SB 32 goal, the 2017 Scoping Plan was created to outline goals and measures for the state to achieve the 2030 goals and further the State's ability to attain the 2050 goal. The 2017 Scoping Plan does not outline a strategy required to meet the 2050 goal as the technology needed to reach these goals is currently unavailable (CARB 2017).

The 2017 Scoping Plan's strategies that are applicable to the Plan include reducing fossil fuel use, energy demand, and VMT; maximizing recycling and diversion from landfills; and increasing water conservation. All policies contained in the Sustainability, Climate, and Resilience Chapter of the Plan and listed in the *Regulatory Setting* of this section, would be consistent with the goals in the 2017 Scoping Plan as they provide for the reduction of GHG emissions from the City. Furthermore, individual projects facilitated by the Plan would be required to comply with the State's recycling and composting requirements for commercial businesses under AB 341 and AB 1826. AB 341 requires businesses generating four or more cubic yards of solid waste per week to recycle recyclable materials and AB 1826 requires businesses generating two or more cubic yards of solid waste per week to recycle organic waste. Compliance with these state laws would maximize the recycling and solid waste diversion for development under the Plan.

The Planning Area would be served by Southern California Edison, which is required to increase its renewable energy procurement in accordance with SB 100 targets. SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program. It requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

As stated in Impact GHG-1, the Plan would facilitate development that does not exceed the locally applicable efficiency threshold of 2 MT CO₂e per service population by 2030 and is therefore consistent with the 2017 Scoping Plan. Impacts would be less than significant.

SCAG 2020-2045 RTP/SCS

SB 375 requires CARB to set regional targets for GHG emissions from use of light duty vehicles associated with land use decisions. Metropolitan Planning Organizations (MPOs) must address their regional GHG reductions targets in an SCS as part of the MPO's RTP. SCAG's 2020-2045 RTP/SCS provides land use and transportation strategies to reduce regional GHG emissions, such as:

- Reflect the Changing Population and Demands

- Focus New Growth Around Transit
- Provide More Options for Short Trips
- Encouraging Active Transportation for Short Trips
- Promote Safety and Security
- Active Transportation

The 2020-2045 RTP/SCS includes goals with corresponding implementation strategies for focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, and supporting implementation of sustainability policies. Table 4.8-5 summarizes policies contained in SCAG’s RTP/SCS that are applicable to the Plan and evaluates the Plan’s consistency with these policies. By promoting infill and mixed-use development, and alternative transportation modes, the Plan would be consistent with the major initiatives identified in the 2020-2045 RTP/SCS to reduce GHG emissions. In addition, as discussed under Impact GHG-1, the Plan would result in per-capita GHG emissions consistent with statewide targets, including the 2030 target codified in EO-B-30-15, and additional reductions toward the 2045 carbon neutrality goal. Because the Plan is consistent with adopted plans, policies, and regulations to reduce GHG emissions, impacts would be less than significant.

Table 4.8-5 Plan Consistency with 2020 RTP/SCS Land Use Policies

Strategy/Action	Project Consistency
Focus Growth Near Destinations & Mobility Options	
<ul style="list-style-type: none"> ▪ Emphasize land use patterns that facilitate multimodal access to work, educational and other destinations ▪ Focus on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets ▪ Plan for growth near transit investments and support implementation of first/last mile strategies. ▪ Promote the redevelopment of underperforming retail developments and other outmoded nonresidential uses ▪ Prioritize infill and redevelopment of underutilized land to accommodate new growth, increase amenities and connectivity in existing neighborhoods ▪ Encourage design and transportation options that reduce the reliance on and number of solo car trips (this could include mixed uses or locating and orienting close to existing destinations) ▪ Identify ways to “right size” parking requirements and promote alternative parking strategies (e.g., shared parking or smart parking) 	<p>Consistent. The Plan would provide employment opportunities for the local workforce through the added commercial, public, retail, office, and hotel development. The Plan would create estimated 26,391 jobs through 2045. Generally, new development would result from re-use of properties, conversion of uses in response to market demand (e.g., select industrial to commercial), and more intense use of land in defined areas including areas in close proximity to existing and planned future transit. The following goals and policies from the Plan would support this initiative:</p> <ul style="list-style-type: none"> ▪ Goal SCR-4: Reduced greenhouse gas emissions from transportation (SB 379, EO N-79-20). <ul style="list-style-type: none"> ▫ SCR-4.1 Bike Facilities. Promote bicycle use with new private development projects through requirements for bicycle parking, lockers and showers, bike share facilities, and when feasible, connections to City bike lanes. ▫ SCR-4.2 Public Transit. Expand the public transit system, increase frequency of service, and provide shade at transit stops. ▫ SCR-4.3 Public EV Chargers. Install EV chargers at suitable public facilities, including Downtown parking structures, the future multi-modal High Speed Rail station, and community parks. ▫ SCR-4.4 EV Reach Code. Adopt EV requirements beyond CALGreen in both number of chargers and charger capacity. ▫ SCR-4.5 ZEV Purchasing. When purchasing City vehicles give preference to fuel efficient vehicles, including the use of zero emission vehicles.

Strategy/Action	Project Consistency
	<ul style="list-style-type: none"> ▫ SCR-4.6 Clean Fuels. Require use of clean fuels for City construction and maintenance vehicles and lawn/garden equipment. ▫ SCR-4.7 Pedestrian and Cyclist Safety. Improve bicycle and pedestrian modes of travel by improving pedestrian and cyclist safety. Example techniques include increasing the number of sidewalks, pending connected and protected bike lanes, and redesigning high incidence intersections.
Leverage Technology Innovations	
<ul style="list-style-type: none"> ▪ Promote low emission technologies such as neighborhood electric vehicles, shared rides hailing, car sharing, bike sharing and scooters by providing supportive and safe infrastructure such as dedicated lanes, charging and parking/drop-off space ▪ Improve access to services through technology—such as telework and telemedicine as well as other incentives such as a “mobility wallet,” an app-based system for storing transit and other multi-modal payments ▪ Identify ways to incorporate “micro-power grids” in communities, for example solar energy, hydrogen fuel cell power storage and power generation 	<p>Consistent. The following goals and policies would support this initiative by tracking the progress of CAP implementation and focusing future reduction strategies on the areas of need such as increasing the use of alternative modes of transportation, and incorporating more solar and other renewable energy available from development within the City.</p> <ul style="list-style-type: none"> ▪ Goal SCR-1: Achieve a carbon neutral community by 2045 (EO B-55-18). <ul style="list-style-type: none"> ▫ SCR-1.1 CAP Maintenance. Maintain and regularly update a Climate Action Plan to reduce GHGs generated within the City. ▫ SCR-1.2 GHG Inventory. Conduct community GHG inventories every 3-5 years to track progress toward achieving the City’s GHG reduction goal. ▫ SCR-1.3 Funding Sources. Seek funding to support implementation of GHG reduction projects for the City, residents, and businesses. ▫ SCR-1.4 Community Engagement. Develop and implement comprehensive community engagement including educational outreach, issue-specific awareness campaigns, and technical assistance. ▪ Goal SCR-2: Utilize a fossil fuel free energy system (SB 100). <ul style="list-style-type: none"> ▫ SCR-2.1 Carbon Free Energy. Direct EPIC to provide 75% carbon-free or renewable electricity to residents and businesses by 2030, achieving 100% carbon-free electricity by 2045. ▫ SCR-2.2 Community Solar. Explore the development of community solar projects and microgrids. ▫ SCR-2.3 Battery Permitting. Establish a streamlined approval process for battery storage systems.
Promote a Green Region.	
<ul style="list-style-type: none"> ▪ Support development of local climate adaptation and hazard mitigation plans, as well as project implementation that improves community resiliency to climate change and natural hazards ▪ Support local policies for renewable energy production, reduction of urban heat islands and carbon sequestration ▪ Integrate local food production into the regional landscape 	<p>Consistent. The following Plan policies would support this initiative.</p> <ul style="list-style-type: none"> ▪ Goal SCR-3: Green and decarbonized buildings for new construction and major renovations. <ul style="list-style-type: none"> ▫ SCR-3.1 Energy Efficient New Construction. Integrate CALGreen Tier 1 and Tier 2 green building and energy efficiency standards into new construction and major remodels. ▫ SCR-3.2 All-Electric Reach Code. Consider adopting a local reach code to encourage new buildings to be all-electric. ▫ SCR-3.3 Solar + Storage. Require installation of photovoltaic panels and battery storage on all residential new

Strategy/Action	Project Consistency
<ul style="list-style-type: none"> ▪ Promote more resource efficient development focused on conservation, recycling, and reclamation ▪ Preserve, enhance, and restore regional wildlife connectivity ▪ Reduce consumption of resource areas, including agricultural land ▪ Identify ways to improve access to public park space 	<p>construction and nonresidential new construction over 5,000 sq. ft.</p> <ul style="list-style-type: none"> ▫ SCR-3.4 Energy Efficient Existing Buildings. Establish an energy and water efficiency upgrade program for existing buildings, focusing resources on the most underserved populations. ▫ SCR-3.4 Benchmarking Energy and Water Use. Register municipal buildings with Energy Star Portfolio Manager and report energy and water use (AB 802). <ul style="list-style-type: none"> ▪ Goal SCR-5: Increased resource capture and reduced waste sent to landfills (SB 1383). <ul style="list-style-type: none"> ▫ SCR-5.1 Zero Waste Plan. Create a zero-waste plan that institutes cost-effective diversion programs for municipal operations and the community. ▫ SCR-5.2 Organic Waste Diversion. Establish programs to comply with State-established requirements for organics and food waste diversion. ▫ SCR-5.3 Waste Diversion Education and Assistance. Develop an education and technical assistance program for residents and businesses on composting, recycling, and reuse of materials. ▫ SCR-5.4 Nonresidential Collection Efficiency. Explore modifying waste franchise agreements to establish rate structures that encourage less frequent nonresidential collection. ▪ Goal SCR-7: Open spaces designed to provide multiple climate and sustainability functions. <ul style="list-style-type: none"> ▫ Policy SCR-7.1: Tree Planting in Public Spaces. Plant additional trees on streets, parks, and other public spaces to sequester carbon, provide shade, contribute to stormwater management, provide habitat, and enhance community character. ▫ Policy SCR-7.2: Preferred Tree and Plant List. Establish a preferred tree list of species appropriate for the urban forest which are more resilient to drought, heat, and pests. Prioritize native plants and pollinator-friendly plants. ▫ Policy SCR-7.3: Tree Planting on Private Property. Adopt a tree preservation ordinance to encourage tree preservation and additional planting on private property as appropriate. ▫ Policy SCR-7.4: Green Infrastructure. Integrate green infrastructure stormwater management practices into the design of open spaces and public rights-of-way. ▫ Policy SCR-7.5: Cool Pavement. Incorporate cool pavement practices into street maintenance activities to reduce the urban heat island effect.

Source: SCAG 2020; Raimi and Associates 2022 (Sustainability, Climate and Resilience)

Mitigation Measures

No mitigation measures are required.

4.8.4 Cumulative Impacts

“Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355). The vast majority of projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence on climate change. Therefore, the issue of climate change for the Plan involved an analysis of whether a Plan’s contribution toward an impact is cumulatively considerable. The Plan itself is cumulative in nature as it represents growth through the Planning Area over approximately the next 23 years. The Plan is not one individual project, but a number of undefined future projects that may occur under the Plan. Therefore, cumulative impacts with respect to GHG emissions would be to the same as the individual impacts addressed above for the Plan, less than significant.

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4.9 Hazards and Hazardous Materials

The following section analyzes impacts associated with exposure to hazards and hazardous materials. It addresses impacts relating to hazardous materials use, transportation, and development on contaminated sites.

4.9.1 Environmental Setting

a. Definitions

The United States Environmental Protection Agency (USEPA) defines hazardous waste as a substance that (1) may cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating illness and (2) poses a substantial present or potential future hazard to human health or the environment when it is improperly treated, stored, transported, disposed of, or otherwise managed. The USEPA has developed a list of specific types of hazardous waste that are in the form of solids, semi-solids, liquids, and gases. Producers of such waste include private businesses and federal, state, and local government agencies.

A material may also be classified as a hazardous material if it contains defined amounts of toxic chemicals. The USEPA regulates the production and distribution of commercial and industrial chemicals to protect human health and the environment. The USEPA also prepares and distributes information to further the public's knowledge about these chemicals and their effects, and provides guidance to manufacturers on pollution prevention measures, such as more efficient manufacturing processes and recycling used materials (USEPA 2021a).

Hazard Versus Risk

Workers and the general public are potentially at risk whenever hazardous materials have been used or where there could be an exposure to such materials. Ecological communities, such as avian and terrestrial habitats and the aquatic environment, may also be at risk, depending on the type of populations and locations relative to potential exposure sources. Inherent in the setting and analyses presented in this section are the concepts of the "hazard" of these materials and the "risk" they pose to human health and the ecological environment.

Exposure to some chemical substances may harm internal organs or systems in the human body, ranging from temporary effects to permanent disability or death. Aquatic, terrestrial, or avian species may also be similarly adversely affected. Hazardous materials that result in adverse effects are generally considered "toxic." However, other chemical materials may be corrosive, or react with other substances to form other hazardous materials, but they are not considered toxic because organs or systems are not affected. Because toxic materials can result in adverse health effects, they are considered hazardous materials, but not all hazardous materials are necessarily "toxic." For purposes of the information and analyses presented in this section, the terms hazardous substances and hazardous materials are used interchangeably and include materials that are considered toxic.

The risk to human health and the ecological environment is determined by the probability of exposure to a hazardous material and the severity of harm such exposure would pose. That is to say, the likelihood and means of exposure, in addition to the inherent toxicity of a material, are used to determine the degree of risk to human health or the ecosystem. For example, a high probability of exposure to a low-toxicity chemical would not necessarily pose an unacceptable human health or

ecological risk, whereas a low probability of exposure to a very high-toxicity chemical might adversely affect the human and ecological communities. Various regulatory agencies, such as the USEPA, California Environmental Protection Agency (CalEPA), State Water Resources Control Board (SWRCB), California Department of Toxic Substances Control (DTSC), United States Occupational Safety and Health Administration (OSHA), and California Department of Industrial Regulations Division of Occupational Safety and Health (Cal/OSHA), are responsible for developing and/or enforcing risk-based standards to protect the public and the environment.

b. Potential Hazardous Materials

Hazardous materials in the Planning Area are routinely used, stored, and transported with industrial operations and processes, in commercial/retail businesses as well as in educational facilities, hospitals, and households. Agricultural operations in the Planning Area also use, store, and transport hazardous materials. Such materials range from home and pool related chlorine products, chemical fertilizers, herbicides and pesticides, stored fuels and waste oil, chemical solvents and lubricants, and a variety of medical materials. Federal, state, and local agency databases maintain comprehensive information on the locations of facilities using large quantities of hazardous materials, as well as facilities generating hazardous waste. Some of these facilities use certain classes of hazardous materials that require accidental release scenario modeling and risk management plans to protect surrounding land uses.

The California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) are the enforcement agencies for hazardous materials transportation regulations. Transporters of hazardous materials and waste are responsible for complying with all applicable packaging, labeling, and shipping regulations. The Office of Emergency Services (OES) also provides emergency response services involving hazardous materials incidents. Both federal and state governments require all businesses that handle more than a specified amount of hazardous materials to submit a business plan to a regulating agency.

Construction Materials

Asbestos

Asbestos is a naturally occurring fibrous mineral found in certain types of rock formations. Asbestos is commonly mixed during processing with a material that binds fibers together so that it can be used in different projects. Any buildings constructed or remodeled between 1930 and 1981 have the potential to incorporate asbestos-containing building materials (ACBM). Asbestos became popular since it is durable, fire retardant, resists corrosion, and a good insulator. Asbestos becomes a problem when it is damaged, disturbed, or deteriorates over time, and the material releases fibers into the air. Asbestos fibers can cause serious health problems if inhaled (USEPA 2021b).

According to the California Code of Regulations (CCR), Title 8, Section 1529, presumed asbestos-containing material means “thermal system insulation and surfacing material found in buildings constructed no later than 1980.” However, the designation of a material as presumed asbestos-containing material may be rebutted pursuant to subsection (k)(5) of Title 8, Section 1529.

Lead

Lead is a highly toxic metal that was used for many years in consumer products. Because of its toxic properties, lead is regulated as a hazardous material. Excessive exposure to lead can result in the accumulation of lead in the blood, soft tissues, and bones. Children are particularly susceptible to

potential lead-related health problems because it is easily absorbed into developing systems and organs. Lead is one of the most common hazards that humans are exposed to in their daily lives and may be present in hazardous concentrations in food, water, and air. Sources of lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, urban dust, and secondary lead smelters. Lead is no longer permitted for gasoline (USEPA 2022a). Lead poisoning is the leading environmentally induced illness in children and poses a potential public health risk. In 1978, the federal government required the reduction of lead in house paint to less than 0.06 percent (600 parts per million) (USEPA 2009). However, houses in the Planning Area built prior to 1978 may contain lead-based paint at levels in excess of this limit. According to the Los Angeles County Department of Public Health, persons who own or perform repairs on a property built before 1978, are required to take the following actions (Los Angeles County Public Health n.d.):

- Test painted surfaces for lead-based paint prior to beginning the work, or assume the surfaces contain lead-based paint and use lead-safe work practices
- Do not use belt-sander, propane torch, high temperature heat gun, dry scraper, or dry sandpaper to remove lead-based paint
- Maintain painted surfaces in good repair
- Check impact or friction surfaces (windows and doors) for dust or deterioration
- Landlords are required to disclose known information on lead-based paint and lead-based paint hazards before leases take effect
- Sellers must disclose known information on lead-based paint and lead-based paint hazards before selling a house
- Renovators disturbing paint surfaces have to give out the USEPA's Renovate Right pamphlet

Contractors that disturb lead-based paint in homes built before 1978 must be certified and follow specific work practices to prevent lead contamination pursuant to 40 CFR 745, Subpart E.

Household Hazardous Waste

The USEPA defines household hazardous waste as “leftover products such as paints, cleaners, oils, batteries, and pesticides that contain potentially hazardous ingredients that could be corrosive, toxic, ignitable, or reactive.” Methods of improper disposal of household hazardous waste commonly include pouring them down the drain, on the ground, into storm sewers, or in some cases putting them out with the trash. Though the dangers of such disposal methods might not be immediately obvious, improper disposal of these forms of waste can pollute the environment and pose a threat to human health (USEPA 2021c).

Los Angeles County provides residents a cost-free way to dispose of unwanted household chemicals including temporary disposal and collection events and permanent collection centers with information posted on the Los Angeles County Public Works website. Seven Household Hazardous Waste (HHW) collection centers are located in Los Angeles County (Los Angeles County Public Works 2022)

- Nicole Bernson (Balboa) S.A.F.E. Center in Northridge
- Gaffey Street S.A.F.E. Center in San Pedro
- Los Angeles-Glendale S.A.F.E. Center in Northeast Los Angeles
- Hyperion S.A.F.E. Center in Playa Del Rey
- Randall Street S.A.F.E. Center in Sun Valley

- UCLA S.A.F.E. Center in West Los Angeles
- Washington Blvd. S.A.F.E. Center in East Los Angeles

The County also operates two permanent collection centers, located at the Antelope Valley Public Landfill and the EDCO Recycling and Transfer Center.

Radon Gas

Radon is a cancer-causing natural radioactive gas that is invisible, odorless, and tasteless. Radon forms from the radioactive decay of small amounts of uranium naturally present in rocks and soil. It can affect indoor air quality, particularly in mountainous areas. Radon gas from natural sources can accumulate in buildings and is a leading cause of non-smoking related lung cancer deaths (USEPA 2022d). The USEPA has created the USEPA Map of Radon Zones for the State of California, created using data on indoor radon measurements, geology, aerial radioactivity, soil parameters, and foundation types and has assigned Los Angeles County with a Zone 2 Radon zone, and has a moderate potential meaning average indoor radon levels may range from 2 to 4 pCi/L (USEPA n.d.). The radon level at which the USEPA recommends considering remedial actions for radon reduction in residences is 4.0 pCi/L. According to the Los Angeles County Department of Public Health, it is believed that only one percent of homes have an indoor radon level above 4 pCi/L (County of Los Angeles Public Health n.d.) and according to CityData.com, the City had no radon test levels that were greater than 4pCi/L (CityData.com 2022).

Existing Hazardous Materials Sites

A database search conducted in September 2021 through the DTSC EnviroStor Hazardous Waste and Substances Site List website (DTSC 2021) did not find any hazardous materials sites in Palmdale. One location in the Planning Area is listed by the USEPA under the Superfund Amendments and Reauthorization Act (SARA), Title III, as shown in Table 4.9-1, but it is not listed in the National Priorities List.

With respect to investigation and cleanup of known contaminated sites, the DTSC and SWRCB are the two primary state agencies responsible for issues pertaining to hazardous materials release sites. The DTSC has developed standards for the investigation of sites where hazardous materials contamination has been identified or could exist based on current or past uses. The standards identify approaches to determine if a release of hazardous waste/substances exists at a site and delineate the general extent of contamination, estimate the potential threat to public health and/or the environment from the release and provide an indicator of relative risk, determine if an expedited response action is required to reduce an existing or potential threat, and complete preliminary project scoping activities to determine data gaps and identify possible remedial action strategies to form the basis for development of a site strategy.

Comprehensive Environmental Response, Compensation, and Liability Information System

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) was developed to protect water, air, and land resources from risks created by past chemical disposal practices. This act is also referred to as the Superfund Act, and the sites listed under it are referred to as Superfund sites. Under CERCLA, the USEPA maintains the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), which lists all contaminated sites in the United States that have in the past undergone or are currently undergoing clean-up

activities. CERCLIS contains information on current hazardous waste sites, potentially hazardous waste sites, and remedial activities. This includes sites that are on the National Priorities List (NPL) or being considered for the NPL. The NPL is the list of sites of national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the USEPA in determining which sites warrant further investigation (USEPA 2022b). The Planning Area contains one CERCLIS site—Air Force Plant 42 Superfund Site—listed in Table 4.9-1. The Air Force Plant 42 Superfund Site has a status of “Open – Assessment and Interim Remedial Action as of 11/23/2015” and has no specified potential contaminants of concern (SWRCB 2022).

Table 4.9-1 CERCLIS Sites in the Palmdale Area

Site Name	Site Location	EPA ID	Status
Air Force Plant 42	20TH ST E & AVES O & M	CA7570090079	Not on NPL

Source: USEPA 2021

Toxics Release Inventory

The Toxics Release Inventory (TRI) is an USEPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain industry groups, as well as federal facilities. TRI sites are known to release toxic chemicals into the air. The USEPA monitors the emissions from these facilities to ensure that their annual limits are not exceeded. TRI reports provide accurate information about potentially hazardous chemicals and their uses to the public in an attempt to give communities more power to hold companies accountable for their actions and to make informed decisions about how such chemicals should be managed. As of 2019, the TRI has listed the Lockheed Martin Aeronautics Co as the only toxic release facility in the Planning Area with a total release category ranging from 101-10,000 pounds (USEPA 2022c).

Leaking Underground Storage Tanks

Leaking underground storage tanks (LUSTs) are one of the greatest environmental concerns of the past several decades. According to the SWRCB’s GeoTracker database, there are no active LUST’s or underground storage tanks (USTs) in the Planning Area; all sites, except for Air Force Plant 42, have a status of “Completed - Case Closed” (SWRCB 2022), which means that a closure letter or other formal closure decision document has been issued for the site. Most closed sites in the Planning Area occur along major transportation corridors, such State Route 138, Palmdale Boulevard, and Sierra Highway.

Plugged, Abandoned, and Unrecorded Wells

An abandoned well is a gas, oil, or gas and oil well that has halted operation and is in the process of being plugged. Once plugged, the well is officially decommissioned. An orphaned well has no responsible party that authorities can mandate to properly abandon the well. Plugged, abandoned, and unrecorded wells can cause environmental damage by leaking pollutants into the atmosphere or into water supplies. Important determinants of how much orphaned or abandoned wells impact the environment include the techniques used and precautions taken when first drilling the well, whether it is a gas well, oil well, or combined oil and gas well, and if and how the well was sealed. If wells are not properly sealed when orphaned or abandoned, oil and gas can contaminate groundwater. It is also possible for orphaned and abandoned wells to be significant emitters of methane into the atmosphere. Furthermore, brine present in wells dug into shale formations can

contain some radioactive and toxic substances that contaminate groundwater if the well leaks. Plugging wells can reduce the risk of explosions and protect groundwater but does not always prevent methane emissions. In the United States, it is possible for wells to have been orphaned or abandoned for over a century, and information about them, if it exists at all, can be difficult to locate.

According to the Well Finder search tool hosted by the California Department of Conservation's Division of Oil, Gas, and Geothermal Resources (DOGGR), there are no plugged wells located within the Planning Area (DOC 2022).

Hazardous Waste Generators

Many types of businesses can be producers of hazardous waste. Small businesses such as dry cleaners, auto repair shops, medical facilities or hospitals, photo processing centers, and metal-plating shops are usually generators of small quantities of hazardous waste. Generally, small-quantity generators are facilities that produce between 100 and 1,000 kilograms (kg) of hazardous waste per month (approximately equivalent to between 220 and 2,200 pounds, or between 27 and 275 gallons). Larger businesses such as chemical manufacturers, large electroplating facilities, and petroleum refineries, can generate large quantities of hazardous waste. The USEPA defines a large-quantity generator as a facility that produces over 1,000 kg (2,200 pounds or about 275 gallons) of hazardous waste per month. Both small and large quantity generators are fully regulated under the Resources Conservation and Recovery Act of 1976 (RCRA). The goal of RCRA is to assure adequate tracking of hazardous materials from generation to disposal. California Fire Code (CFC) Articles 79, 80, et al., which augment the RCRA, are the primary regulatory guidelines used by cities to govern the storage and use of hazardous materials. The CFC also serves as the principal enforcement document from which corresponding violations are determined.

c. Urban Fires

Many factors contribute to an area being at risk of structural fires and local fire departments' capabilities to control them, including the construction size and type, built-in protection, density of construction, street widths, and occupancy size. Many older structures built prior to 1950 are susceptible to urban fires because they were built according to older building standards and fire codes, with no internal sprinklers and other fire safety systems in place and made from non-fire-resistive construction materials. Additionally, daytime traffic congestion from commuter and other traffic may contribute to difficulty of ingress and egress for emergency response vehicles in these areas. Weather is also a factor affecting fire safety in the Planning Area, which frequently experiences hot, dry weather during summer and fall months. This is especially true during Santa Ana wind conditions, when hot, dry desert air can combine with high winds, increasing the possibility of quick-spreading fires.

d. Wildland Fires

The California Department of Forestry and Fire Protection (CAL FIRE) works in cooperation with OES, as well as neighboring state governments through a network of mutual aid agreements to fight wildland fires. CAL FIRE is the largest multipurpose fire protection agency in the United States, responsible for wildland fire protection of over 31 million acres of California's privately owned wildlands (CAL FIRE 2022a), as well as providing full-service fire protection through 118 cooperative fire protection agreements in 30 counties, 41 cities, 30 fire districts and 49 other special districts and service areas in the State of California (CAL FIRE 2022b). CAL FIRE responds to over 5,400

wildland fires each year and commands a force of approximately 5,300 full-time fire professionals, 1,783 seasonal personnel, and approximately 600 volunteers (CAL FIRE 2016).

Fire risk in southern California is determined by a number of factors, including drought, the availability and type of fuels, Santa Ana Winds, and development in the wildland-urban interface. The area is characterized by a Mediterranean climate of hot, dry summers and mild, wet winters. As with much of the western United States, the region has seen significantly below-average rainfall in recent years, leaving parched brush and trees extremely dry and fire prone.

The Planning Area is susceptible to wildland fires because of the area's vegetation, climate and slope of surrounding mountain areas, hillsides, and grasslands. Within the planning area, chaparral and grasslands are native vegetation that act as fuel for wildfires, allowing wildfires to spread rapidly. The climate of the Antelope Valley is hot and dry, making local vegetation highly combustible, combined with Santa Ana winds, which will accelerate the speed at which wildfires travel, and steep slopes which bring grass and brush within reach of upward flames and make it difficult for firefighters to reach. Fire Hazard Zones within the Planning Area are in the southern and western portions of the Planning Area (City of Palmdale 2016).

e. Emergency Medical and Other Services

The Los Angeles County Fire Department is divided into divisions including air and wildland, lifeguards, forestry, health hazardous materials divisions and fire prevention, which responds to all types of emergency situations with emergency call volumes including emergency and medical services, fire, false alarms, mutual aid, hazardous materials and miscellaneous. The Los Angeles County Fire Department firefighters and paramedics are therefore trained and prepared to respond to a wide variety of situations. The fire prevention division is also responsible for inspections relating to land entitlement, new construction, commercial and industrial facilities, schools and institutions, and specialized inspections related to film permits (Los Angeles County Fire Department 2021).

f. Emergency Response

The California Emergency Services Act provides the basic authority for conducting emergency operations following proclamations of emergencies by the Governor or other local authority. All local emergency plans are extensions of the California Emergency Plan (CalOES 2021). The Planning Area is part of Region I in the OES Southern Administrative Region, one of the six mutual aid regions that exist in California (City of Palmdale 2012).

The City of Palmdale's Emergency Operations Plan was approved by the State Office of Emergency Services in February of 2012. The plan provides guidance for emergency response with a multi-hazard perspective specific to the city and is compliant with the National Incident Management System (NIMS) and the Standardized Emergency Management System (SEMS) in regard to emergency management. There are five parts; Part One, "Basic Plan" is an overview of operational concepts, relations of the City's emergency/disaster management organization to the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) and federal, state and local responsibilities for protecting life, property and assuring safety within the community; Part Two, "Emergency Organization Functions Overview" is an overview of the emergency/disaster response organization; Part Three, "Hazard Assessments" provides threat assessments for hazards that could potentially affect the Planning Area; Part Four "EOC Forms" provides a list of FEMA's ICS form series forms to assist EOC staff; and Part Five, "Acronym" lists out all the acronyms in the plan for reference (City of Palmdale 2012).

4.9.2 Regulatory Setting

a. Federal

The USEPA is the lead agency responsible for enforcing federal regulations that affect public health or the environment. The primary federal laws and regulations include the RCRA of 1976 and the Hazardous and Solid Waste Amendments enacted in 1984; CERCLA; and SARA. Federal statutes pertaining to hazardous materials and wastes are contained in the CFR Title 40 - Protection of the Environment.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (15 U.S. Code Section 2601 et seq.) grants USEPA the authority to develop reporting, record-keeping, and testing requirements for, as well as restrictions on, the manufacture, use, and sale of chemical substances. Pursuant to Title II of the Toxic Substances Control Act, the USEPA adopted the Asbestos Model Accreditation Plan in 1994. The Model Accreditation Plan requires that all persons who inspect for asbestos-containing materials or design or conduct response actions with respect to friable asbestos obtain accreditation by completing a prescribed training course and passing an exam. Section 403 of the Toxic Substances Act establishes standards for lead-based paint hazards in paint, dust, and soil.

Resource Conservation and Recovery Act

Resource Conservation and Recovery Act (RCRA) Subtitle C regulates the generation, transportation, treatment, storage, and disposal of hazardous waste by LQGs (1,000 kilograms per month or more) through comprehensive life cycle or “cradle to grave” tracking requirements. The requirements include maintaining inspection logs of hazardous waste storage locations, records of quantities being generated and stored, and manifests of pick-ups and deliveries to licensed treatment/storage/disposal facilities. RCRA also identifies standards for treatment, storage, and disposal, which is codified in 40 CFR 260.

Comprehensive Environmental Response Compensation and Liability Act

Congress enacted CERCLA, setting up what has become known as the Superfund program, in 1980 to establish prohibitions and requirements concerning closed and abandoned hazardous waste sites; provide for liability of persons responsible for releases of hazardous waste at these sites; and establish a trust fund to provide for cleanup when no responsible party can be identified. Generally, CERCLA authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response.
- Long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening.

Superfund Amendments and Reauthorization Act

SARA amended the CERCLA in 1986, emphasizing the importance of permanent remedies and innovative treatment technologies to clean up hazardous waste sites; requiring Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; providing new enforcement authorities and settlement tools; increasing involvement of

the states in every phase of the Superfund program; increasing the focus on human health problems posed by hazardous waste sites; encouraging greater citizen participation in making decisions on how sites should be cleaned up; and increasing the size of the trust fund to \$8.5 billion.

Hazardous Materials Transportation Act

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (49 CFR Section 101 et seq.), which is administered by the Research and Special Programs Administration of the U.S. Department of Transportation (DOT). The Hazardous Materials Transportation Act governs the safe transportation of hazardous materials by all modes. The DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers. The DOT regulations govern every aspect of the movement, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA), or SARA Title III, was enacted in October 1986. SARA Title III requires any infrastructure at the State and local levels to plan for chemical emergencies, including identifying potential chemical threats. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301–312 are administered by USEPA’s Office of Emergency Management. USEPA’s Office of Information Analysis and Access implements EPCRA’s Section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention Program (CalARP).

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a “Standard” or an “Enhanced” Natural Mitigation Plan. “Enhanced” plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program.

Code of Federal Regulations, Title 14, Part 77

The primary role of the FAA is to promote aviation safety and control the use of airspace. Public use airports that are subject to the FAA’s grant assurances must comply with specific FAA design criteria, standards, and regulations. Land use safety compatibility guidance from the FAA is limited to the immediate vicinity of the runway, the runway protection zones at each end of the runway, and the protection of navigable airspace.

14 CFR 77, *Safe Efficient Use and Preservation of the Navigable Airspace*, establishes the federal review process for determining whether proposed development activities in the vicinity of an airport have the potential to result in a hazard to air navigation. 14 CFR Part 77 identifies standards for determining whether a proposed project would represent an obstruction “that may affect safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities.” Objects that are identified as obstructions based on these standards are presumed to be hazards until an aeronautical study conducted by the FAA determines otherwise.

b. State

Primary state agencies with jurisdiction over hazardous chemical materials management are the DTSC and Regional Water Quality Control Boards (RWQCB). Other state agencies involved in hazardous materials management are the Department of Industrial Relations (Cal/OSHA implementation), OES (California Accidental Release Prevention implementation), the California Department of Fish and Wildlife (CDFW), the California Air Resources Board (CARB), Caltrans, State Office of Environmental Health Hazard Assessment (Proposition 65 implementation), and the California Integrated Waste Management Board. The enforcement agencies for hazardous materials transportation regulations are the CHP and Caltrans. Hazardous materials and waste transporters are responsible for complying with all applicable packaging, labeling, and shipping regulations.

California Environmental Protection Agency

CalEPA has broad jurisdiction over hazardous materials management in the state. Within CalEPA, the DTSC has primary regulatory responsibility for hazardous waste management and cleanup. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Act.

Along with the DTSC, the RWQCB is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. RWQCB regulations are contained in Title 27 of the CCR. Additional state regulations applicable to hazardous materials are contained in Title 22 of the CCR. Title 26 of the CCR is a compilation of those sections or titles of the CCR that are applicable to hazardous materials.

Department of Toxic Substances Control

The DTSC regulates hazardous waste in California primarily under the authority of the federal RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. In addition, DTSC reviews and monitors legislation to ensure that the legislation reflects DTSC goals. From these laws, DTSC major program areas develop regulations and consistent program policies and procedures. The regulations spell out what those who handle hazardous waste must do to comply with the laws. Under RCRA, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow state and federal requirements. As such, management of hazardous waste in the Planning Area is regulated by the DTSC to ensure compliance with state and federal requirements pertaining to hazardous waste.

California law provides the general framework for regulation of hazardous wastes by the Hazardous Waste Control Act, passed in 1972. DTSC is the state's lead agency in implementing the Act. The Act provides for state regulation of existing hazardous waste facilities, which include "any structure, other appurtenances, and improvements on the land, used for treatment, transfer, storage, resource recovery, disposal, or recycling of hazardous wastes," and requires permits for, and inspections of, facilities involved in generation and/or treatment, storage, and disposal of hazardous wastes.

California Division of Occupational Safety and Health

Cal/OSHA is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle. For example, manufacturers must appropriately label containers, Material Safety Data Sheets must be available in the workplace, and employers are to properly train workers.

Construction Site Well Review Program

DOGGR oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells. The regulatory program emphasizes the wise development of oil, natural gas, and geothermal resources in the state through sound engineering practices that protect the environment, prevent pollution, and ensure public safety. DOGGR is charged with implementing Public Resources Code (PRC) Section 3208.1. As a result, DOGGR developed the Construction Site Well Review program to assist local permitting agencies in identifying and reviewing the status of oil or gas wells located near or beneath proposed structures. Before issuing building or grading permits, local permitting agencies review and implement DOGGR's preconstruction well requirements.

The Construction Site Well Review Program provides important information on the current status of all known wells located on a development site, and it provides other important information when development occurs near oil or gas wells. DOGGR provides this information in an advisory role, so that responsible decisions can be made by the property owner, developer, and local permitting agency when development occurs near oil or gas wells. In a June 27, 2017, comment letter on the notice of preparation (NOP) for the Plan (Appendix A), DOGGR stated that its records indicate that there are at least two plugged and abandoned wells in or near the Planning Area, and that individual well records are available on the DOGGR website or by making an appointment with the division's Records Clerk. According to PRC Section 3208.1, if any property owner, developer, or local permitting agency either fails to obtain an opinion from DOGGR or fails to follow the advice of the division when development occurs near an oil or gas well, then the owner of the property on which the well is located may be responsible for abandonment costs should a future problem arise with the well.

Unified Hazardous Waste and Hazardous Materials Management

In January 1996, CalEPA adopted regulations implementing a "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program). The six program elements of the Unified Program are hazardous waste generators and hazardous waste on-site treatment, UST, above-ground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency—the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction. Participating agencies to the Los Angeles County CUPA for UST are the City of Burbank Fire Department, the City of Pasadena Fire Department, and the City of Torrance Fire Department (Los Angeles County Public Works n.d.).

California's Hazardous Materials Release Response Plans and Inventory Law, sometimes called the "Business Plan Act," aims to minimize the potential for accidents involving hazardous materials and

to facilitate an appropriate response to possible hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored on-site, to prepare an emergency response plan, and to train employees to use the materials safely.

California Accidental Release Prevention Program

CalARP (CCR Title 19, Division 2, Chapter 4.5) covers certain businesses that store or handle more than a certain volume of specific regulated substances at their facilities. The CalARP program regulations became effective on January 1, 1997 and include the provisions of the Federal Accidental Release Prevention program (Title 40, CFR Part 68) with certain additions specific to California pursuant to Article 2, Chapter 6.95, of the Health and Safety Code.

The list of regulated substances is found in Article 8, Section 2770.5 of the CalARP program regulations. Businesses that use a regulated substance above the noted threshold quantity must implement an accidental release prevention program, and some may be required to complete a Risk Management Plan (RMP). An RMP is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. The purpose of an RMP is to decrease the risk of an off-site release of a regulated substance that might harm the surrounding environment and community. An RMP includes the following components: safety information, hazard review, operating procedures, training, maintenance, compliance audits, and incident investigation. The RMP must consider the proximity to sensitive populations located in schools, residential areas, general acute care hospitals, long-term health care facilities, and child day-care facilities, and must also consider external events such as seismic activity.

California Airport Land Use Compatibility Plan

The Airport Land Use Commission (ALUC) provides for orderly growth of an airport and the area surrounding the airport within the jurisdiction of the ALUC, excluding existing land uses. Its primary function is to safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. Cities and/or counties have a responsibility to ensure the orderly development of the airports within their local jurisdiction and make sure all applicable planning documents and building regulations are consistent with the Airport Land Use Compatibility Plan (ALUCP).

Hazardous Waste Control Act

The 1972 Hazardous Waste Control Act (Health & Safety Code Section 25100 et seq.) is the seminal hazardous waste control law in California. It establishes standards for regulating the generation, handling, processing, storage, transportation, and disposal of hazardous wastes. The hazardous waste control program is administered by DTSC and local CUPAs.

Emergency Response to Hazardous Materials Incidents

The State of California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government and private agencies. Response to hazardous materials incidents is one part of this plan. The Plan is managed by the State Office of Emergency Services (OES), which coordinates the responses of other agencies including CalEPA, CHP, and CDFW.

California Department of Transportation, Hazardous Materials Transportation

DOT regulates hazardous materials transportation between states. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the CHP and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads. It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit delivery, or the loading, of such materials (Cal. Vehicle Code Sections 31602(b) and 32104(a)). When transporting explosives through or into a jurisdiction for which a route has not been designated by CHP, drivers must follow routes as may be prescribed or established by local authorities (California Vehicle Code, Section 31614(a)). The transportation of explosives in quantities of 1,000 pounds or less, or other than on a public highway, is subject to the California Health and Safety Code (California Vehicle Code, Section 31601(a)).

California Health and Safety Code

CalEPA oversees the regulation and management of hazardous materials on a statewide level through the DTSC. In 1995, legislation went into effect that required CalEPA to consolidate permitting, inspection, and enforcement activities in several hazardous material and hazardous waste program areas. Additionally, Section 65962.5 of the Government Code directs DTSC to compile a list of all hazardous-waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code. California Code of Regulations Title 3 of the California Code of Regulations (CCR) pertain to the application of pesticides and related chemicals. Parties applying regulated substances must continuously evaluate application equipment, the weather, and all surrounding properties. Title 3 specifically prohibits any application that would:

- Contaminate people not involved in the application of the materials;
- Damage non-target crops, animals, or any other public or private property;
- Contaminate public or private property; and,
- Create health hazards on public or private property.

Title 17 of the CCR establishes regulations related to the use and disturbance of materials containing naturally occurring asbestos. Title 22 of the CCR sets forth definitions of hazardous waste and special waste. It also identifies hazardous waste criteria, and establishes regulations pertaining to the storage, transport, and disposal of hazardous waste. In addition to other criteria, Title 26 of the CCR establishes the requirements for the transport, containment, and disposal of hazardous materials. Title 27 of the CCR sets forth a number of regulations relating to the construction, operation, and maintenance of landfills in the State. It establishes a landfill classification system and identifies categories of waste. Each class and type of landfill may then be constructed to contain specific types of waste.

Disaster Mitigation Act

The Disaster Mitigation Act of 2000 (DMA2K) (Public Law 106-390) amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 to establish a Pre-Disaster Mitigation (PDM) program and new requirements for the federal post-disaster Hazard Mitigation Grant Program (HMGP). DMA2K encourages and rewards local and State pre-disaster planning by promoting sustainability and seeking to integrate State and local planning with an overall goal of strengthening

statewide hazard mitigation. This enhanced planning approach enables local, tribal, and state governments to identify specific strategies for reducing probable impacts of natural hazards such as floods, fire, and earthquakes. To be eligible for hazard mitigation funding after November 1, 2004, local governments are required to develop a Hazard Mitigation Plan that incorporates specific program elements of the DMA2K law.

California Emergency Plan

The California Office of Emergency Services (Cal OES) Emergency Plan outlines a state-level strategy to support local government efforts during a large-scale emergency (OES 2017). In accordance with the California Emergency Services Act, the State Emergency Plan describes methods for carrying out emergency operations, mutual aid processes, emergency services of governmental agencies, resource mobilization, emergency public information, and continuity of government. California also has a Master Mutual Aid Agreement between all state departments, established in 1950, and a separate Law Enforcement Mutual Aid Plan and California Fire Service and Rescue Emergency Mutual Aid Plan, both published in 2014 by Cal OES.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) of 1990 (Public Resources Code, Chapter 7.8, Section 2690- 2699.6) directs the Department of Conservation (DOC), California Geological Survey to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of the SHMA is to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating these seismic hazards. The SHMA was passed by the legislature following the 1989 Loma Prieta earthquake. The SHMA requires the State Geologist to establish regulatory zones (Zones of Required Investigation) and to issue appropriate maps (Seismic Hazard Zone maps). These maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling construction and development. Single family frame dwellings up to two stories not part of a development of four or more units are exempt from the state requirements. However, local agencies can be more restrictive than state law requires.

Cal-OSHA Worker Safety Requirements

The California Occupational Safety and Health Administration (Cal-OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within California. Cal-OSHA regulations pertaining to the use of hazardous materials in the workplace, as detailed in CCR Title 8, include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal-OSHA's hazard communication program requires that Material Safety Data Sheets be available to employees and that employee information and training programs be documented.

California Building Code

The California Building Code (CBC) is found in the California Code of Regulations (CCR) in Part 2 of Title 24, administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24, or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of

egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within a jurisdiction.

California Fire Code

The California Fire Code is Chapter 9 of CCR Title 24. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The California Fire Code regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The California Fire Code and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines and specialized equipment. To ensure that these safety measures are met, the California Fire Code employs a permit system based on hazard classification.

Standardized Emergency Management System

The Standardized Emergency Management System (SEMS) Multi-Hazard Functional Plan (MHFP) addresses the City's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies. The operational concepts reflected in the SEMS MHFP focus on potential large-scale disasters that can generate unique situations requiring unusual emergency responses. The intent of the SEMS law is to improve the coordination of state and local emergency response in California. It requires all jurisdictions in California to participate in the establishment of a standardized statewide emergency management system.

In an emergency, governmental response is an extension of responsibility and action, coupled with normal day-to-day activity. Normal governmental duties will be maintained with emergency operations carried out by those agencies assigned specific emergency functions. The SEMS has been adopted by the City of Palmdale for managing response to multi-agency and multi-jurisdiction emergencies and to facilitate communications and coordination between all levels of the system and among all responding agencies. Chapter 1 of Division 2 of Title 19 of the CCR establishes the standard response structure and basic protocols to be used in emergency response and recovery (City of Palmdale 2012).

Fully activated, the SEMS consists of five levels:

- **Field Response.** Consists of emergency response personnel and resources, under the command of an appropriate authority, and carries out tactical decisions and activities in direct response to an incident or threat.
- **Local Government.** Includes cities, counties, and special districts. Local governments manage and coordinate the overall emergency response and recovery activities with their jurisdiction and are required to use SEMS when their emergency operations center is activated or a local emergency is proclaimed in order to be eligible for state funding of response-related personnel costs.
- **Operational Area.** An intermediate level of the state's emergency services organization consisting of a county and all political subdivisions within the county area. Political subdivisions include cities, a city and county, counties, districts, or other local governmental agency or public agency as authorized by law.

- **Mutual Aid Regions.** Provides for the more effective application and coordination of mutual aid and other emergency-related activities. The state is divided into six mutual aid regions.
- **State Government.** Manages state resources in response to the emergency needs of the other levels and coordinates mutual aid among the mutual aid regions and between the regional level and state level. The state level also serves as the coordination and communication link between the state and the federal disaster response system.

National Incident Management System Implementation

Presidential Directive HSPD 5 identifies steps for improved coordination in response to incidents and requires a National Response Plan and a National Incident Management System (NIMS). NIMS is a comprehensive, national approach to incident management developed to improve the coordination of federal, state, and local emergency response nationwide. The State of California’s NIMS Advisory Committee issued “California Implementation Guidelines for the National Incident Management System” to assist local governments and other entities to incorporate NIMS into already existing programs, plans, training, and exercises.

Mutual Aid Agreements

The foundation of California’s emergency planning and response is a statewide mutual aid system which is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation.

The California Disaster and Civil Defense Master Mutual Aid Agreement (California Government Code Sections 8555–8561) requires signatories to the agreement to prepare operational plans to use within their jurisdiction and outside their area. These plans include fire and non-fire emergencies related to natural, technological, and war contingencies. The State of California, all state agencies, all political subdivisions, and all fire districts signed this agreement in 1950.

Section 8568 of the California Government Code, the “California Emergency Services Act,” states that “the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof.” The Act provides the basic authority for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as a City Manager. The provisions of the act are further reflected and expanded on by appropriate local emergency ordinances. Therefore, local emergency plans are considered extensions of the California Emergency Plan.

As discussed, six mutual aid regions exist in the State of California, each region consisting of counties designated by the State Office of Emergency Services. The Planning Area is within Region I.

c. Local

Palmdale Municipal Code (PMC)

PMC Chapter 15.28, Floodplain Management, in Title 15 – Buildings and Construction , enforces regulations to minimize the loss of life and property within the City of Palmdale.

PMC Chapter 17.100, Hillside Management, in Title 17 – Zoning, implements goals and policies of the City’s General Plan that relate to development and resource management on hillside areas in Palmdale.

PMC Chapter 17.96, Hazardous Waste Facilities, in Title 17 – Zoning, establishes a Conditional Use Permit application and review process that is consistent with Los Angeles County Hazardous Waste Management Plan to ensure health and safety for the community members and natural environment in Palmdale.

Palmdale General Plan Safety Element

The City of Palmdale’s Safety Element provides goals and policies that address natural and manmade hazards within the community to ensure public safety and wellbeing for the community. Applicable goals and policies are referenced throughout Section 4.9.3, *Impact Analysis*, below.

Palmdale Emergency Operations Plan

The Palmdale Emergency Operations Plan was developed in 2012 to serve as a guiding document for emergency/disaster response in the City and is currently being updated with the goal of City adoption by December 2022. The Plan assigns responsibility to organizations and individuals for carrying out specific actions at projected times and places in an emergency that exceeds the capability or routine responsibility of any one agency. Sets forth lines of authority and organizational relationships and shows how all actions will be coordinated. Describes how people and property will be protected in emergencies and disasters. Identifies personnel, equipment, facilities, supplies, and other resources available--within the jurisdiction or by agreement with other jurisdictions--for use during response and recovery operations.

Palmdale Local Hazard Mitigation Plan

The City of Palmdale’s Local Hazard Mitigation Plan identifies plans, policies, programs, and ordinances to protect the community and environment from, mitigate and reduce risk of natural and technological/manmade hazards in Palmdale.

4.9.3 Impact Analysis

a. Methodology and Significance Thresholds

The analysis in this section focuses on the use, disposal, transport, or management of hazardous or potentially hazardous materials resulting from development or redevelopment envisioned under the Plan, as well as other concerns such as hazards introduced by aviation activities. Disposal options, the probability for risk of upset, and the severity of consequences to people or property associated with the increased use, handling, transport, and/or disposal of hazardous materials associated with implementation of the Plan are also analyzed. The risks from development in the identified focus areas relative to the location of known contaminated sites are analyzed. Construction impacts would generally result from demolition of existing (usually older) structures, as well as from disturbance of contaminated soils. Operational impacts would generally be a function of the types of uses proposed and the materials that operation of these uses entails.

The analysis assumes that any development under the Plan would comply with relevant federal and state laws and regulations, as well as the requirements of the PMC and current General Plan.

According to CEQA Guidelines Appendix G, impacts related to hazards and hazardous materials would be potentially significant if implementation of the Plan would:

1. Create significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
4. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Plan result in a safety hazard or excessive noise for people residing or working in the Planning Area
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires

b. Project and Cumulative Impacts

<p>Threshold 1: Would the Plan create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</p> <p>Threshold 2: Would the Plan create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</p>

Impact HAZ-1 IMPLEMENTATION OF THE PLAN COULD RESULT IN AN INCREMENTAL INCREASE OF THE OVERALL ROUTINE TRANSPORT, USE, STORAGE, AND DISPOSAL OF HAZARDOUS MATERIALS. COMPLIANCE WITH APPLICABLE REGULATIONS RELATED TO THE HANDLING, TRANSPORT, DISPOSAL, AND STORAGE OF HAZARDOUS MATERIALS AND ADHERENCE TO PLAN POLICIES WOULD MINIMIZE THE RISK OF SPILLS AND THE PUBLIC'S POTENTIAL EXPOSURE TO THESE SUBSTANCES AND REDUCE THE RISK OF ADVERSE IMPACTS OF HAZARDOUS MATERIALS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

While the Planning Area contains ample vacant land and room for growth, there are large areas of land in the Planning Area that are designated for industrial use. According to the Existing Conditions Report prepared by Raimi & Associates, *Land Use + Urban Form* (2019), nearly 14 percent of land use within the City limits is designated as Industrial, which includes Extraction, Agriculture, Wholesale/Warehousing and Industrial. Major projects that are under consideration for City approval anticipate 110,000 square feet of new industrial uses (Raimi & Associates 2021), however, new industrial square footage is proposed in areas that already contain industrial land uses.

The introduction of new mixed-use, commercial, and industrial uses in the Planning Area, may result in an incremental increase in the use of hazardous materials and/or the generation of hazardous materials. While there is a possibility that new industrial uses within the focus areas could transport, use, store, or dispose of hazardous materials, most areas identified for mixed-use development under the Plan would involve commercial and retail uses and would not involve the transport, use, storage, or disposal of hazardous materials associated with industrial activities. However, future industrial development could result in closer proximity of residences to the routine handling, use, storage, disposal, or transport of hazardous materials. This is especially true in areas where new

residential development could be introduced in areas in close proximity to existing and/or future industrial and commercial development.

Exposure of persons to hazardous materials could occur by improper handling or use of hazardous materials or hazardous wastes during construction or operation of future developments, particularly by untrained personnel; transportation accidents; environmentally unsound disposal methods; or fire, explosion, or other emergencies. The types and amounts of hazardous materials would vary according to the nature of the activity. In some cases, it is the type of material that is potentially hazardous; in others, it is the amount of material that could present a hazard.

Although the overall quantity of hazardous materials and waste generated in the Planning Area could incrementally increase under the Plan, all new developments that handle or use hazardous materials would be required to comply with regulations, standards, and guidelines established by the USEPA, State of California, Los Angeles County, and City of Palmdale related to storage, use, and disposal of hazardous materials.

Both the federal and state governments require all businesses that handle more than a specified number of hazardous materials to submit a business plan to a regulating agency. Specifically, any new business that meets the specified criteria must submit a full hazardous materials disclosure report that includes an inventory of the hazardous materials generated, used, stored, handled, or emitted; and emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. The emergency response plan needs to identify the procedures to follow for immediate notification to all appropriate agencies and personnel in the event of a release, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all company emergency coordinators of the business, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel. The Los Angeles County Fire Department, as the designated CUPA, conducts yearly inspections of all such businesses to confirm that their business plan is in order and up to date (Los Angeles County Fire Department 2022).

Because implementation of the Plan would primarily result in urban infill and redevelopment and intensification of development in specific focus areas in the Planning Area, existing structures may need to be demolished prior to the construction of new buildings. Demolition of existing structures in the Planning Area could result in exposure of construction personnel and the public to hazardous substances such as asbestos or lead-based paints. Long-term risks to occupants of buildings could result from other contaminants released from the soil, such as radon gas. In addition, disturbance of plugged, abandoned, and unrecorded oil and gas wells could result in the release of hazardous materials into the environment. Lastly, the accidental spill or leakage of hazardous materials during transport, use, storage, or disposal could result in the exposure of construction personnel and the public to health or safety risks.

Exposure to hazardous materials during construction and operation of projects facilitated by the Plan could potentially occur through any of the following:

- Direct dermal contact with hazardous materials
- Incidental ingestion of hazardous materials (usually due to improper hygiene, when people fail to wash their hands before eating, drinking, or smoking)
- Inhalation of airborne dust released from dried hazardous materials, or other hazardous materials such as radon gas

The Plan's Safety Element includes a variety of goals and policies to reduce the potential exposure of people and the environment to hazards and hazardous materials:

- **Goal SE-3: Minimize risks associated with the transport, storage, use, and disposal of hazardous materials.**
 - **Policy SE-3.1: Hazardous Materials.** Coordinate with the Los Angeles County Fire Department to maintain a list of hazardous waste generators that could affect City residents.
 - **Policy SE-3.2: Remediate Contaminated Sites.** Continue to support and encourage state and county efforts to identify and remediate contaminated sites.
 - **Policy SE-3.3: Soil and Groundwater Cleanup.** Require clean-up of soil and/or groundwater containing hazardous materials exceeding regulatory action levels to the satisfaction of the agency having jurisdiction prior to granting permits for new development.
 - **Policy SE-3.4: Hazardous Materials Transport.** Require transport of hazardous materials along designated routes that minimize risks to the public and sensitive environmental areas and cooperate with regional agencies in developing and maintaining such routes.
 - **Policy SE-3.5: Review Development Near Hazardous Materials.** Review proposed development in proximity to any existing or proposed facility that uses, stores, or transports large amounts of hazardous materials to ensure adequate mitigation of impacts related to hazardous materials (e.g., appropriate site design, setbacks, and buffering).
 - **Policy SE-3.6: Hazardous Waste Facility Compliance.** Require all proposed hazardous waste facilities to comply with the City's hazardous waste management plan and the Hazardous and Waste Facilities Section of the Palmdale Municipal Code.

- **Goal SE-5: Minimize damage from catastrophic failure of infrastructure.**
 - **Policy SE-5.1: Evaluate inundation hazards.** As appropriate, evaluate inundation hazards related to the potential rupture of the following when reviewing development proposals: California Aqueduct, Palmdale Dam, Littlerock Dams and/or proposed basins.
 - **Policy SE-5.2: Buffers for gas lines.** Require buffers for development in areas near high-pressure natural gas lines and that ensure such development is provided with alternative access/evacuation routes.

- **Goal SE-7: Ensure safe evacuation of residents in the event of an emergency requiring evacuation.**
 - **Policy SE-7.1: Maintain Emergency Evacuation Map.** Maintain and, as necessary, update a map of designated emergency evacuation routes for various types of disasters (e.g., earthquake, wildfire, hazardous material release, dam failure) and disaster scenarios.

These goals and policies would minimize risks from routine use, transport, handling, storage, and disposal of hazardous materials. Oversight by the appropriate federal, state, and local agencies and compliance with applicable regulations related to the handling and storage of hazardous materials would minimize the risk of public exposure to these substances.

The Plan would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 3: Would the Plan emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Impact HAZ-2 NEW DEVELOPMENT OF LAND USES FACILITATED BY THE PLAN COULD RESULT IN ACCIDENTAL RELEASE OF HAZARDOUS MATERIALS WITHIN ONE QUARTER MILE OF EXISTING SCHOOLS. COMPLIANCE WITH REGULATORY REQUIREMENTS OF THE CITY'S FIRE CODE, PLAN POLICIES, AND EXISTING APPLICABLE STATE AND FEDERAL REGULATIONS WOULD ENSURE THAT RISKS FROM HAZARDOUS EMISSIONS OR HANDLING OF HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE NEAR EXISTING OR PROPOSED SCHOOLS WOULD REMAIN LESS THAN SIGNIFICANT.

Under the Plan, an increase in industrial land uses by approximately 110,000 square feet could increase the quantity of sensitive receptors (including schools) near areas designated for industrial land use, thereby potentially increasing the risk of exposure to hazardous materials, waste, or emissions within 0.25 mile of an existing or proposed school.

However, the locations for proposed industrial development under the Plan exist in areas already designated for industrial land uses and are greater than 0.25 mile from existing schools. However, accidental release or combustion of hazardous materials at both existing and new commercial and/or industrial developments in the City could endanger residents or students in the surrounding community.

All businesses that handle or have on-site transportation of hazardous materials are required to comply with the provisions of the City's Fire Code and any additional elements as required in the California Health and Safety Code Article 1, Chapter 6.95, *Hazardous Materials Release Response Plans and Inventory*. As described under Impact HAZ-1 above, both the federal and state governments require all businesses that handle more than a specified number of hazardous materials to submit a business plan to the regulating agency. Furthermore, the goals and policies of the Plan's Safety Element, listed above in Impact HAZ-1, would reduce the potential exposure of people and the environment to hazards and hazardous materials.

Compliance with the provisions of CalEPA, CalOSHA, and DTSC—as well as the City's Fire Code and Plan goals—would minimize the risks associated with exposure of sensitive receptors such as schools to hazardous materials. With continued implementation of these requirements on all new development in the Planning Area, this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 4: Would the Plan be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Impact HAZ-3 IMPLEMENTATION OF THE PLAN COULD RESULT IN DEVELOPMENT OF SITES CONTAMINATED WITH HAZARDOUS MATERIALS. HOWEVER, COMPLIANCE WITH APPLICABLE REGULATIONS RELATING TO SITE CLEANUP AND ADHERENCE TO PLAN POLICIES WOULD MINIMIZE THE IMPACTS RELATED TO DEVELOPMENT ON A LISTED CONTAMINATED SITE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The following databases and listings compiled pursuant to Government Code Section 65962.5 were checked (October 1, 2021) for known hazardous materials contamination in the Planning Area:

- **USEPA**
 - Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)/Superfund Enterprise Management System (SEMS)/Envirofacts database search
- **SWRCB**
 - GeoTracker search for leaking underground storage tanks (LUST) and other cleanup sites
- **DTSC**
 - EnviroStor database for hazardous waste facilities or known contamination sites
 - Cortese list of Hazardous Waste and Substances Sites

Soil and Groundwater Contamination

Unknown Contaminated Sites

Aside from the potential release of hazardous materials from demolition of existing structures in the Planning Area, grading and excavation of sites for future development in the Planning Area resulting from implementation of the Plan may also expose construction workers and the public to potentially unknown hazardous substances present in the soil or groundwater. If any unidentified sources of contamination are encountered during grading or excavation, the removal activities required could pose health and safety risks such as the exposure of workers, materials handling personnel, and the public to hazardous materials or vapors. Such contamination could cause various short-term or long-term adverse health effects in persons exposed to the hazardous substances.

The goals and polices of the Plan's Safety Element, listed above in Impact HAZ-1 and including Goals SE-3 through SE-7 and related policies, would reduce impacts involving unknown contaminated sites.

Known Contaminated Sites

Potential hazards to construction workers and the public could also result from construction activities on existing land uses that are known to be contaminated. As noted previously, there is one active site in the Planning Area (Air Force Plant 42) identified as containing or potentially containing hazardous waste contamination. According to the SWRCB, all other sites have a case-closed status, including LUSTs, Military UST, Cleanup Program and Military Cleanup sites (SWRCB 2022).

According to DTSC, hazardous waste sites in the Planning Area include Military Evaluation, State Response, School Investigation, Tiered Permit, School Cleanup, Voluntary Cleanup, Evaluation, and Corrective Action sites (DTSC 2022). The distribution of contaminated sites indicates that hazardous

materials are mostly located along major industrial and commercial corridors in the Planning Area. However, any new development occurring on these documented hazardous materials sites, depending on its status and subsequent required action, would be preceded by remediation and cleanup under the supervision of DTSC before construction activities could begin.

It is also possible that USTs that were in use prior to permitting and record keeping requirements may be present in the Planning Area. If an unidentified UST was uncovered or disturbed during construction activities, it would be closed in place or removed pursuant to existing hazard materials regulations. Removal activities could pose both health and safety risks, such as the exposure of workers, tank handling personnel, and the public to tank contents or vapors. Potential risks, if any, posed by USTs would be minimized by managing the tank according to existing Los Angeles County standards as enforced and monitored by the Department of Public Works. The extent to which groundwater may be affected, if at all, depends on the type of contaminant, the amount released, and depth to groundwater at the time of the release. If groundwater contamination is identified, remediation activities would be required by the RWQCB prior to commencement of any new construction activities. Additionally, if contamination exceeds regulatory action levels, the developer would be required to undertake remediation procedures prior to grading and development under the supervision of the County's Public Works Department, County Department of Toxic Substances Control, or RWQCB (depending upon the nature of any identified contamination).

Therefore, implementation of existing state and local regulations would reduce the potential significance of impacts related to contaminated sites to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Plan result in a safety hazard or excessive noise for people residing or working in the Planning area?

Impact HAZ-4 DEVELOPMENT UNDER THE PLAN MAY RESULT IN CONSTRUCTION IN PROXIMITY TO THE PALMDALE REGIONAL AIRPORT AND UNITED STATES AIR FORCE PLANT 42. COMPLIANCE WITH EXISTING REGULATIONS, INCLUDING THE FEDERAL CODE OF REGULATIONS AND ALCUP POLICIES, WOULD REDUCE IMPACTS TO A LESS THAN SIGNIFICANT LEVEL.

Hazards associated with airports are generally related to construction of tall structures within a flight zone that could interfere with flight paths, increasing the number of people working or residing in areas subject to crash hazards and noise hazards to sensitive receptors within the vicinity of a flight path. The Palmdale Regional Airport is a 9,000-square-foot commercial airport within the City limits owned by the City of Los Angeles Department of Airports and operated under a joint agreement with the US Air Force Plant 42 (Raimi & Associates 2021 and County of Los Angeles Airport Land Use Commission 2003). There are currently plans to expand the airport as there is a strong transportation demand for commercial air passenger service in the City of Palmdale (City of Palmdale 2021).

Under the Plan, there is potential that residential, commercial, and industrial uses could be constructed in proximity to the Palmdale Regional Airport and future development of the airport. However, the Plan does not change the height limits that currently apply to both existing and new uses in these areas. Compliance with existing regulations, including polices in the California ALUCP,

would reduce potential hazards. According to the Federal Code of Regulations, 14 CFR 77 would require the proponent of any planned development to file notice with the FAA for any construction or alteration that exceeds an imaginary surface extending outward and upward at a slope of 25 to one for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of a heliport described in 14 CFR 77.9(d). However, if future development in the vicinity of the Palmdale Regional Airport were “shielded by existing structures of a permanent and substantial nature of equal or greater height,” a notice to the FAA under 14 CFR 77 would not be required. Compliance with 14 CFR 77, under its applicable conditions, and existing regulations that establish local consistency with the California ALUCP would reduce impacts to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 6: Would the Plan impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact HAZ-5 POPULATION GROWTH AND INCREASED DEVELOPMENT AS A RESULT OF THE PLAN COULD IMPACT EVACUATION ROUTES IN THE EVENT OF AN EMERGENCY IN THE PLANNING AREA. PROPOSED GOALS IN THE PLAN WOULD ENSURE EFFECTIVE EMERGENCY RESPONSE FOLLOWING A NATURAL OR HUMAN CAUSED DISASTER. THEREFORE, THE PLAN WOULD NOT RESULT IN INTERFERENCE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The Plan would facilitate increased development and population growth in the Planning Area. Population growth would incrementally increase traffic which could impacting evacuation routes in the Planning Area. However, the Safety Element of the Plan includes a variety of goals and policies to ensure adequate emergency access, including:

- **Goal SE-2: Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
 - **Policy SE-2.7: Emergency Access Routes for Wildfire Hazard Zones.** Require all new development in or near designated wildfire hazard zones to identify multiple evacuation/emergency access routes and file with City.

- **Goal SE-7: Ensure safe evacuation of residents in the event of an emergency requiring evacuation**
 - **Policy SE-7.1: Maintain Emergency Evacuation Map.** Maintain and, as necessary, update a map of designated emergency evacuation routes for various types of disasters (e.g., earthquake, wildfire, hazardous material release, dam failure) and disaster scenarios.
 - **Policy SE-7.2: Evacuation Route Information.** Make information regarding emergency evacuation routes readily available to all city residents.
 - **Policy SE-7.3: Review Development Consistency.** Review all new development for consistency with applicable evacuation plans and ensure access to at least two evacuation routes.
 - **Policy SE-7.4: Emergency Evacuation Evaluation.** Continue to evaluate evacuation route capacity, safety, and viability under a range of emergency scenarios.
 - **Policy SE-7.5: Evacuation in VHFSZ and HFSZ.** Require developers proposing development on properties within VHFSZ and HFSZ areas to evaluate and provide adequate evacuation routes.

- **Goal SE-10: Reduce crime activity.**
 - **Policy SE-10.3: Maximize Safety and Security.** Through the development review process, ensure that sites are designed in order to maximize safety and security, considering such factors as visibility, lighting, emergency access, legibility of street numbers, and fencing.

There are seven fire stations that are part of the Los Angeles County Fire Department within the Planning Area (Station 24, Station 37, Station 93, Station 114, Station 131, Station 136, and Station 140) and two stations as part of the Plant 42 Fire Department. In addition, the only police station in the Planning Area is the Palmdale Sheriff's Station, part of the Los Angeles County Sheriff's Department. The Planning Area is part of the Los Angeles Operational Area, California Standardized Emergency Management System (SEMS) and National Incident Management System (NIMS). The Operational Area is responsible for coordinating information, resources and priorities among local governments, and using multi-agency or inter-agency coordination to conduct decisions for emergency response activities within the operational area as a whole (City of Palmdale 2012).

Fire Department review of new development applications for adequate emergency access and evacuation routes, in addition to implementation of the Safety Policy Framework for the Plan goals listed above, would ensure adequate emergency response. Therefore, potential impacts to emergency response and evacuation would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 7: Would the Plan expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Impact HAZ-6 THE PLANNING AREA INCLUDES A DESIGNATED VERY HIGH FIRE HAZARD AREA. GOALS INCLUDED IN THE PLAN WOULD MINIMIZE EXPOSURE OF PEOPLE OR STRUCTURES TO RISK OF LOSS, INJURY, OR DEATH INVOLVING WILDFIRE AND WILDLAND FIRES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The Planning Area is located in a Local Responsibility Area (LRA), which means local governments have financial responsibility for wildland fire protection (CAL FIRE 2022c). According to CAL FIRE's Fire Hazard Severity Zone Viewer, Very High Fire Hazard Severity Zones (VHFHSZ) only exist in the southwestern corner of the City limits. The Ritter Ranch and part of the Anaverde Nuevo Specific Plans would extend into the VHFHSZ. The Ritter Ranch Specific Plan proposed 7,200 new residential units, 73 acres of commercial use, 121 acres of schools, and 95 acres of parks. The Anaverde Nuevo Specific Plan proposed 5,200 residential units, 42 acres of commercial uses, and 42 acres of golf course, recreational, open space and community facility use (Raimi & Associates 2021). All future projects under the Plan would be required to comply with local, State, and federal requirements related to wildland fires, building standards and safety codes, as well as defensible space requirements, where applicable. Further, wildland fires typically are a potential hazard to development located in unmaintained open spaces. In the VHFHSZ within the Planning Area, residential areas south of Rancho Vista Boulevard and residential and commercial uses along West Avenue South are surrounded by open space to the west and south. However, the Plan does not specifically propose additional development within the VHFHSZ and would focus new development in already urbanized or infill sites. Therefore, the Plan would not expose people or structure to a risk of loss, injury, or death.

The following goals from the Safety Policy Framework for the Plan would reduce impacts involving wildland fires:

- **Goal SE-2: Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
 - **Policy SE-2.1: Critical Facilities.** Prohibit new public or critical facilities in Very High Fire Hazard Severity Zones, except when other options do not exist.
 - **Policy SE-2.2: Redevelopment Compliance.** After a large fire, ensure that re-development located in the in the High and Very High Fire Hazard Severity Zones complies with fire safety requirements for construction, accounting for any increased risk related to climate change.
 - **Policy SE-2.3: Wildland Development.** Require that developments located in wildland interface areas incorporate and enforce standards for construction, including a fuel modification program (i.e., brush clearance, planting of fire-retardant vegetation) to reduce the threat of wildfires, accounting for any increased risk related to climate change.
 - **Policy SE-2.4: Landscaped Buffer Zones.** Provide fire-resistant landscaped buffer zones between high-risk fire hazard areas and urban development with fire clearance located on private land and maintained by the property owner(s).
 - **Policy SE-2.5: Maintain Firesafe Zones.** Require property owners to clear brush and high fuel vegetation and maintain firesafe zones (a minimum distance of 30 feet from the structure or to the property line, whichever is closer) to reduce the risk of fires. For structures located within a Very High Fire Hazard Severity Zone, the required brush clearance distance is 200 feet from structures to the property line.
 - **Policy SE-2.6: Soils and Waterways.** Evaluate soils and waterways for risks from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire.
 - **Policy SE-2.9: Development Requirements.** Ensure that the requirements of the Los Angeles County Fire Department are incorporated into new development through the development review process.
 - **Policy SE-2.10: Water system requirements.** Require all new development to be served by a water system that meets applicable fire flow requirements.

New development in the Planning Area would be compliant with Plan goals, along with CAL FIRE Standards, the California Building Code, SB 99, and AB 3074. Therefore, impacts involving exposure of people or structures to wildland fires would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.9.4 Cumulative Impacts

The analysis in this section examines impacts of the Plan on hazards and hazardous materials throughout the County of Los Angeles (the cumulative impact analysis area) and is cumulative in nature. Some types of hazards and hazardous materials impacts are related to site- and project-specific characteristics and conditions and would not be significantly affected by other development outside of the Planning Area. As discussed in Impacts HAZ-1 and HAZ-2, there are existing federal, State, and local regulations that effectively reduce the inherent hazard associated with routine transport, use, storage, and disposal of hazardous materials. Regulations and oversight, as outlined in the impacts analysis above, would also effectively reduce the potential for individual projects to

create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions, within the Planning Area as well as in Los Angeles County. Thus, cumulative impacts related to the transport, use, storage, or disposal of hazardous materials, upset conditions, hazardous emissions near schools, and project locations on known or unknown hazardous materials sites, would be less than significant.

The Plan would have a less than significant impact related to airport hazards and would not contribute to a cumulative impact for this issue area.

Emergency response plans are generally specific to a particular city or county or parts thereof. For example, in the event of an imminent emergency in Palmdale, emergency response would typically be from police, ambulance and fire departments local to the City or County (through mutual aid agreements), and not from areas outside of Los Angeles County. Thus, the cumulative impacts related to conflict with emergency response plans would be less than significant.

Specific land use plans in the Plan would facilitate development near areas mapped as very high fire hazards. The risk of loss from existing development and the anticipated growth within Los Angeles County would result in cumulative impacts related to wildland fire hazards due to development in or near fire hazard zones. As described in Impact HAZ-6, the Plan would result in a less than significant impact to wildfire, and implementation of State requirements for very high fire hazard areas, California Fire Code standards for new structures, and fire hazard policies in the Plan would minimize potential cumulative wildland fire impacts. Therefore, the Plan would not have a considerable contribution to cumulative wildland fire risk.

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4.10 Hydrology and Water Quality

This section addresses the Plan's potential impacts on the Planning Area's drainage infrastructure, as well as its potential surface water quality impacts. The City of Palmdale obtains its water from the Palmdale Water District (PWD) and Los Angeles County Waterworks District No. 40 (LACW 40), which purchases water from Antelope Valley-East Kern Water Agency (AVEK). PWD serves the central and southern portions of Palmdale while LACWD 40 serves areas both east and west of State Route 14. Watershed, groundwater, and water quality information was obtained from the PWD 2020 Urban Water Management Plan (UWMP) and LACWD 40 UWMP, and other supplemental resources.

4.10.1 Environmental Setting

a. Watershed and Surface Water

A watershed (also known as a drainage or catchment basin) is an area of land that channels and drains all the streams, rivers, rainfall, and snowmelt, into reservoirs, bays, inland water bodies, or an ocean. The watershed could consist of surface water (lakes, streams, reservoirs, and wetlands) and groundwater, and its size is based on its geography. The Planning Area is part of the Antelope Valley Watershed, which is a part of the Antelope Valley Groundwater Basin. The Antelope Valley Watershed is unique in that it does not drain into the Pacific Ocean, but encompasses approximately 1,220 square miles within Los Angeles County. The Planning Area is located in the southern portion of the Antelope Valley Groundwater Basin, in the northern part of Los Angeles County.

The Littlerock Dam and Reservoir, just south of the Planning Area in the San Gabriel Mountains, serves as the PWD's local surface water supply. The Littlerock Dam and Reservoir receives water from natural runoff of the San Gabriel mountains, and intercepts flows from Littlerock and Santiago Canyons. The primary tributaries that supply water to the PWD service area are the Littlerock and Big Rock Creeks, which flow north from the San Gabriel Mountains (PWD 2020). The 65 square mile watershed is in the Angeles National Forest. The Littlerock Dam has a capacity of approximately 3,500-acre feet (PWD 2020).

LACWD 40 purchases water from AVEK, which receives surface water from the State Water Project (SWP) (LACWD 40 2021). AVEK has a maximum of 144,844 acre feet per year (AFY) available from the SWP each year, of which they allocate about 58 percent (LACWD 40 2021).

b. Topography

The Planning Area is in the southeastern portion of the Antelope Valley Groundwater Basin. The City is located in the high desert region of Los Angeles County, between the foothills on San Gabriel and the Sierra Pelona Mountains to the south and west, and the Mojave Desert to the north and east. The city's elevation is 2,655 feet above sea level and most of the developed portions of the city are generally flat (Palmdale 1993), but parts of the City and its Sphere of Influence (the Planning Area) do extend into the foothills of the San Gabriel and Sierra Pelona Mountains, as shown in Figure 2-2 of this EIR.

c. Groundwater

According to the California Department of Water Resources (DWR), the Antelope Valley Groundwater Basin encompasses 1,580 square miles of Los Angeles County, Kern County, and, less prominently, San Bernardino County, and has a storage capacity of approximately 70,000,000-acre feet (DWR 2004). The Antelope Valley Groundwater Basin is comprised of two primary aquifers: (1) the upper (principal) aquifer and (2) the lower (deep) aquifer. The U.S. Geological Survey has identified a series of subbasins in the Antelope Valley Groundwater Basin. The Planning Area is serviced by the PWD and LACWD 40. PWD's service area overlies the Lancaster, Buttes, and Pearland groundwater subbasins. LACWD 40's service area overlies West Antelope, Finger Buttes, Neenach, Willow Springs, Oak Creek, Gloster, Chaffee, Peerless, and North Muroc, in addition to PWD's three subbasins (LACWD 40 2021). The boundaries between the subbasins are determined by discontinuity or by steepening of the groundwater surface as measured in wells (PWD 2020).

Groundwater has accounted for 35 percent of the PWD water supply since 2016. The PWD has 22 active groundwater wells drawing from the Antelope Valley Aquifer (PWD 2020). The PWD is temporarily entitled to a share of a federal groundwater right, of up to 1,450 AFY until 2025. Additionally, the PDW will begin receiving a groundwater production right of 2,770 AFY starting in 2023. The PDW has produced an average of 6,380-acre feet of groundwater per year since 2015. LACWD 40 pumped a total of 14,266 AFY from the Antelope Valley Groundwater Basin in 2020, and average of 15,550 AFY per year between 2016 and 2020 (LACWD 40 2021).

The Lancaster subbasin is in the center of the Antelope Valley Groundwater Basin with its southernmost portions lying within the PWD service area. The Buttes subbasin is located southeast of the Lancaster subbasin where a small portion underlies the PWD service area. The PWD does not currently have any wells or pump water from the Buttes subbasin. The Pearland subbasin is also located southeast of the Lancaster Subbasin where the northern portion of the subbasin lies within the PWD service area. PWD operates 10 wells in the Pearland subbasin, with a pumping capability of 3,500 gallons per minute (gpm). Additionally, the PWD operates 10 wells in the Lancaster subbasin, with a pumping capability of approximately 12,500 gpm (PWD 2020).

The San Andreas rift zone, also known as the San Andreas Fault, has two general groundwater bearing areas. These areas generally lie east and west of the intersection of Pearblossom Highway and Barrel Springs Road in the south-central part of the Planning Area. While the area to the east has poor groundwater production potential, the area to the west has greater groundwater bearing deposits. The PWD has four wells in the San Andreas rift zone, two in the western area and two in the eastern area (PWD 2020).

PWD and LACWD 40 are involved in the adjudication of groundwater rights for the Antelope Valley Groundwater Basin that began in 2004. The adjudication allows groundwater banking between entities and allows PWD and LACWD 40 to take any additional groundwater banked. In late 2015, PWD and LACWD 40, as well as the majority of parties involved, agreed to a stipulated judgment for the adjudication of the Antelope Valley Groundwater Basin. Per the judgment, PWD is receiving a groundwater production right of 2,770 AFY. Prior to the judgment, PWD had an unquantified right to pump water for beneficial use and assumed projected pumping volumes of up to 12,000 AFY based on pumping capacity. In addition to its groundwater production right, PWD is entitled to a share of the unused federal reserved right. Currently, the average amount of PWD's share of unused Federal Reserved Water Right Production is 1,450 AFY. The PWD is also entitled to a pumping allocation for return flow credit of imported water used. Based on the analyses conducted in planning reports return flow credits are projected to range between approximately 4,900 AFY and

6,000 AFY through 2040 (PWD 2020). LACWD 40 was given the right to pump 6,789 AFY, use approximately 3,500 AFY of unused federal reserve rights, and return flows equivalent to 39 percent of LACWD 40's five-year average of purchased SWP water supply (39 percent of 26,657 AFY or 10,400 AFY). LACWD 40 also has the right to lease 2,600 AFY of groundwater rights from AVEK. Overall, LACWD 40's groundwater rights total of 23,289 AFY (LACWD 40 2021).

The antelope Valley Basin is exempt from the requirements of the Sustainable Groundwater Management Act (SGMA), which was passed by the State of California in 2014 and sets forth a statewide framework to help protect groundwater resources over the long-term (DWR 2022). The PWD has not adopted a groundwater management plan, and no regional groundwater management plan currently exists for the Basin (PWD 2020).

The DWR's Bulletin 118, California's Groundwater (2019), does not characterize the groundwater basin as overdrafted, however it was deemed a 'low-priority' basin by DWR (PWD 2020).

d. Flood Hazards

Flooding can cause widespread damage. Buildings and vehicles can be damaged or destroyed, while smaller objects can be buried in flood-deposited sediments. Floods can also cause drowning or isolation of people or animals. In addition, floodwaters can break utility lines, interrupting services and potentially affecting health and safety, particularly in the case of broken sewer or gas lines.

The secondary effects of flooding are due to standing water, which can result in crop damage, septic tank failure, and water well contamination. Standing water can also damage roads, foundations, and electrical circuits.

Inadequately-sized culverts and bridges can create impediments to the passage of high water flow in streams and gullies. Undersized infrastructure typically results in short-term back-ups behind the culvert or bridge, with pooling water in such areas, in effect, an unintended detention basin.

The Planning Area is subject to potential flooding from overflow of underground drainage channels or detention basins into low-lying areas as a result of heavy rainfall, inundation resulting from dam failure or a break in the California Aqueduct, which runs through the Planning Area from its northwest corner to its southeast corner as shown in Figure 2-3 of this EIR. The major causes of flooding over the past decade have been heavy winter rains and the accompanying high velocity flows within watercourses and the storm drainage infrastructure. Damages have included roadway and shoulder washouts, culvert inlet damage, retention basin damage, and sediment basin overload (LHMP 2016).

It is reasonable to assume that the probability of flood events will continue to increase as development continues in the Planning Area. Development has the potential to decrease permeable surfaces on a site and to increase runoff volume, which can impact the effectiveness of on-site detention and channel capacity. Additionally, any encroachment into the flood plain reduces flood storage and restricts conveyance.

The City of Palmdale has developed an "Emergency Services Notification System" that is implemented when a hazardous event may take place, including flooding events. Continued efforts are being made with the State to make sure that flooding information is up to date for its citizens and visitors. The City has made a concentrated effort to mitigate against circumstances contributing to flooding, using such tools as ordinances governing development in flood hazard areas. Additionally, the City has adopted a drainage master plan in order to divert floodwater. However, buildout of the plan will take approximately 20 years to complete (Palmdale 2016).

FEMA 100-Year Flood Hazard

The Federal Emergency Management Agency (FEMA) establishes base flood heights for 100-year and 500-year flood zones. As shown in Figure 4.10-1, the portion of the Planning Area east of SR-14 has some areas located in or in proximity to a 100-year or 500-year floodplain. Common flooding issues affecting the Planning Area are outlined in the previous section under “flood hazards.”

Dam Inundation

Surface rupture and ground shaking from earthquakes can result in rupture of the Palmdale and Littlerock Dams, causing flooding. Floodwaters could get as deep as 50 feet immediately downstream of the Littlerock Dam. Failure of the Littlerock Dam could result in the inundation of a 300-foot-wide area for 0.25 mile north of the dam. Along this length, the water depth could vary from 50 to 15 feet. Ten minutes after failure, floodwater could diverge eastward to Avenue U where the depth would be reduced to 10 feet. Trending north from Avenue U, the water would eventually come to a depth that is no longer a risk to downstream developments (Palmdale 2016).

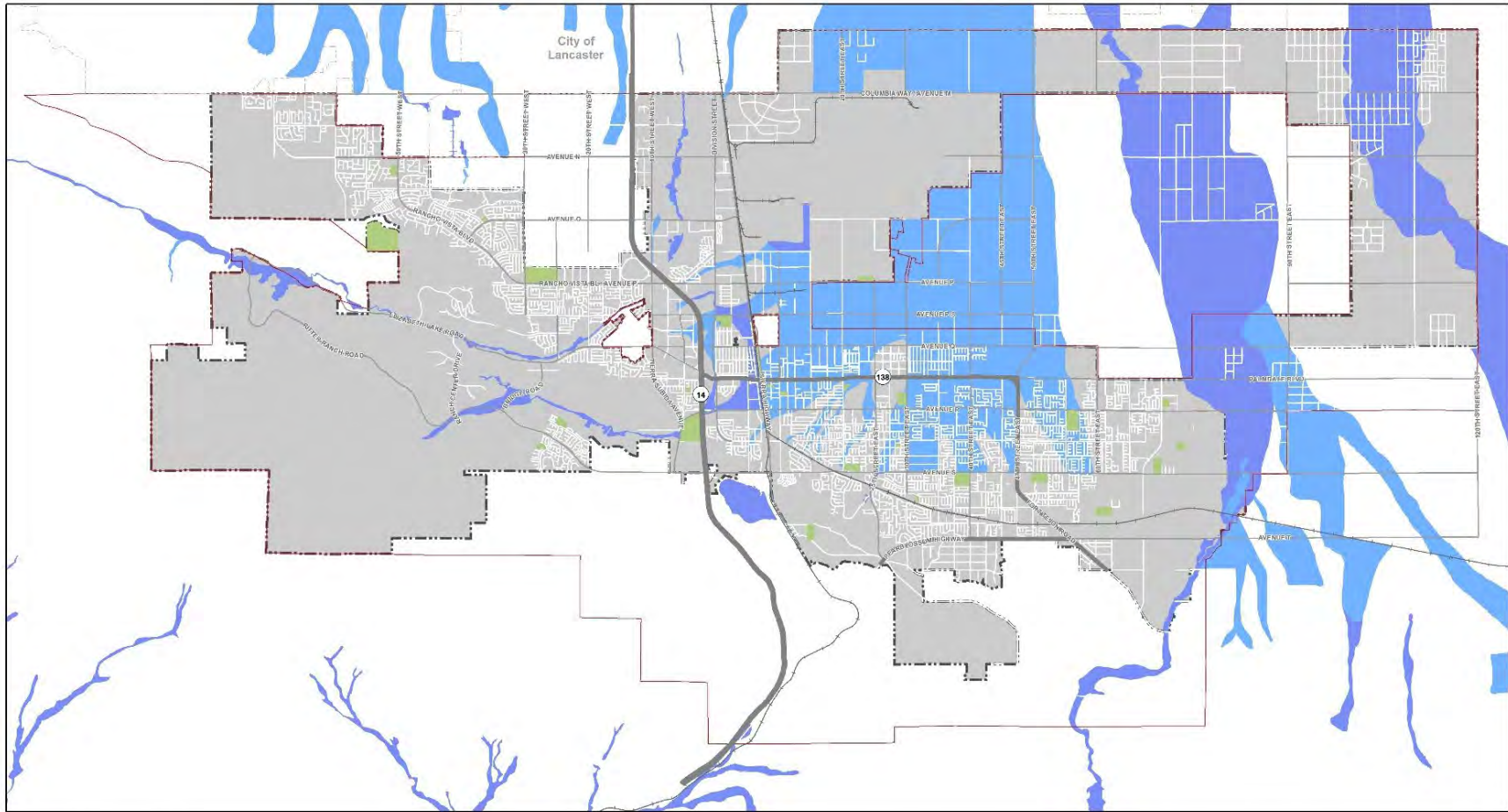
In addition, a seismic event could cause a water wave, or seiche, to occur at Lake Palmdale which, as shown in Figure 2-2 of this EIR, is in the south-central part of the Planning Area at the southeast corner of SR-14 and Avenue S. The design report for the dam considers a reflection of the wave on return unlikely. Furthermore, wave volume above the dam would not be substantial and would not result in damaging floods. Overpour on the downstream side of the dam will not cause any damage by erosion because the existing rockfill was designed to withstand it. The Sheriff’s Department is responsible for notification and local evacuation in the event of dam failure (Palmdale 2016).

e. Water Quality

The primary sources of pollution to surface and groundwater resources include the following:

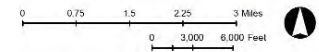
- Stormwater runoff from paved areas, which can contain hydrocarbons, sediments, pesticides, herbicides, toxic metals, and coliform bacteria
- Improperly placed septic tank leach fields, and properly placed septic tanks that do not have proper residence time or are not properly maintained or have improperly disposed of household cleaners and other materials
- Illegal waste dumping as well as stormwater runoff that can introduce contaminants such as gasoline, pesticides, herbicides, and other harmful chemicals
- The PWD owns and operates a water treatment plant known as the Leslie O. Carter Water Treatment Plant, which provides treatment for water extracted from Lake Palmdale. Lake Palmdale receives water from two of the water sources in the city, the SWP and Littlerock Dam and Reservoir. The treatment plant consists of chemical addition, flocculation, sedimentation, filtration, and disinfection. PWD has upgraded the treatment plant to meet more stringent water quality regulations. Groundwater quality meets state and federal drinking standards and thus does not require a stringent treatment process. Therefore, groundwater wells pump directly into the PWD’s distribution system or into nearby holding tanks without the need for treatment, except for chlorination (Palmdale 2016).
- Based on current conditions and knowledge, water quality is not anticipated to affect water supply reliability (PWD 2020).

Figure 4.10-1 FEMA Flood Zones



Flood Hazard Areas

- FEMA Flood Zone A (Areas of 100-year flooding)
- FEMA Flood Zone X500 (Areas of 500-year flooding)
- City of Palmdale Boundary
- Sphere of Influence
- Other City Boundary
- Park
- Major Highway/Arterial
- Railroad



Data Sources: City of Palmdale GIS data, FEMA, 2019.

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4.10.2 Regulatory Setting

a. Federal

Clean Water Act

The federal Clean Water Act (CWA), enacted by Congress in 1972 and amended several times, is the primary federal law regulating water quality in the United States. The CWA established the basic structure for regulating discharges of pollutants into jurisdictional waters of the United States and forms the basis for several state and local laws throughout the country. The CWA gives the United States Environmental Protection Agency (USEPA) the authority to implement federal pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry contaminants in surface water, establishing wastewater and effluent discharge limits for various industry categories, and imposing requirements for controlling nonpoint-source pollution. At the federal level, the CWA is administered by the USEPA and United States Army Corps of Engineers (USACE). At the state and regional levels in California, the CWA is administered and enforced by the California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). The project site is located within the jurisdiction of the Lahontan RWQCB.

Clean Water Act Section 303(d): List of Impaired Water Bodies

Section 303(d) of the CWA requires states, territories, and tribes to identify water bodies that do not meet the water quality objectives (WQOs) for their designated beneficial uses. Each state must submit an updated biennial list of water quality impaired water bodies, called the 303(d) list, to the U.S. EPA. The 303(d) list also identifies the pollutant(s) or stressor(s) causing water quality impairment and establishes a priority for developing a control plan to address the impairment. If a water body is designated as “impaired,” then a Total Maximum Daily Load (TMDL) is developed and identified for the affected water body. A TMDL establishes the maximum daily amount of a pollutant allowed in an identified water body and is used as a planning tool in addressing water quality impairments and improving water quality. No water bodies in Palmdale were listed under the Clean Water Act Section 303 (d).

Clean Water Act Section 401

Under Section 401 of the CWA, the USEPA can approve State agencies to be the authority implementing the Acts’ provisions in that State, including implementation of Sections 303 and 402 (see below). The SWRCB is the USEPA-designated authority in California and delegates regional authority to the nine RWQCBs, which in turn have regulatory authority over actions in waters of the U.S. and Waters of the State of California through the issuance of water quality certifications, which are issued in conjunction with any federal permit (e.g., permits issued by the USACE under Section 404 of the CWA, described below). In effect, this section requires the issuance of certification by a RWQCB as a condition of issuance of such federal permits and provides that projects for which the State does not issue water quality certification cannot obtain other federal permits.

Clean Water Act Section 402 and the National Pollutant Discharge Elimination System

In 1987, amendments to the CWA added Section 402, which established the National Pollutant Discharge Elimination System (NPDES) program. This is a framework to protect water quality by regulating industrial, municipal, and construction-related sources of pollutant discharges to waters. In accordance with Section 402, the CWA prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. For a discussion of how Section 402 is implemented in California, please see *Clean Water Act Section 402: California NPDES* in Section 4.10.2b.

Clean Water Act Section 404

Under Section 404 of the CWA, proposed discharges of dredged or fill material into waters of the U.S. require USACE authorization. Waters of the U.S. generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands (with the exception of isolated wetlands). The USACE identifies wetlands using a multi-parameter approach, which requires positive wetland indicators in three distinct environmental categories: hydrology, soils, and vegetation. According to the USACE (1987) Wetlands Delineation Manual, except in certain situations, all three parameters must be satisfied for an area to be considered a jurisdictional wetland. Applications for CWA Section 404 permits must show the applicant has:

- Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable
- Minimized unavoidable impacts on waters of the U.S. and wetlands; and,
- Provided mitigation for unavoidable impacts

Safe Drinking Water Act

The Federal Safe Drinking Water Act was enacted in 1974, allowing the USEPA to promulgate national primary drinking water standards specifying Maximum Contaminants Levels (MCLs) for each contaminant present in a public water system (any water system that provides drinking water to 25 or more people) with an adverse effect on human health. Primary MCLs have been established for approximately 90 contaminants in drinking water. The USEPA has also adopted secondary MCLs as non-enforceable guidelines for contaminants that may cause cosmetic or aesthetic effects. States have the discretion to adopt them as enforceable standards. USEPA has delegated to the SWRCB the responsibility for administering California's drinking-water program. In 1976, California adopted its own safe drinking water act (see *California Safe Drinking Water Act* in Section 4.10.2b).

National Flood Insurance Act/Flood Disaster Protection Act

The National Flood Insurance Act of 1968 made flood insurance available for the first time. The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws are relevant because they led to mapping of regulatory floodplains and to local management of floodplain areas according to guidelines that include prohibiting or restricting development in flood hazard zones.

b. State

Clean Water Act Section 401 and State RWQCBs

Under Section 401 of the CWA, the State RWQCBs have regulatory authority over actions in waters of the U.S. and the State of California through the issuance of water quality certifications, which are issued in conjunction with any federal permit (i.e., the federal permit will not be issued unless and until the State issues the required water quality certification). Some of the major federal licenses and permits subject to Section 401 include CWA Section 402 (described below) and CWA Section 404 (described above) permits issued by the USACE. Section 401 of the CWA provides the SWRCB (and the RWQCBs) with the regulatory authority to waive, certify, or deny any proposed activity that could result in a discharge to surface waters. To waive or certify an activity, the SWRCB and RWQCB must determine that the proposed discharge would comply with State water quality standards, including those protecting beneficial uses and water quality, as defined in the applicable Water Quality Control Plan(s) (described below, under “Porter-Cologne Water Quality Control Act”). If the SWRCB/RWQCB denies a proposed activity, the federal permit cannot be issued. As noted with respect to the CWA Section 404, a CWA Section 401 water quality certification is required for projects involving the discharge of dredge or fill material to wetlands or other bodies. Jurisdictional streambeds and associated riparian habitat are also regulated by the California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code.

Clean Water Act Section 402: California NPDES

In California, the NPDES program is administered by the SWRCB through the nine RWQCBs. The SWRCB has adopted an NPDES *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit)* (Order 2009-0009, as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). Compliance with the *Construction General Permit* is required for projects that result in more than one acre of ground disturbance, including through clearing, grading, grubbing, excavating, stockpiling, and removing or replacing existing facilities. The *Construction General Permit* requires the landowner and/or contractor to file permit registration documents prior to commencing construction and pay a fee annually throughout the duration of construction. These documents include a notice of intent, risk assessment, site map, stormwater pollution prevention plan (SWPPP), and signed certification statement. The *Construction General Permit* specifies minimum Best Management Practice (BMP) requirements for stormwater control based on the risk level of the site. The SWPPP must include measures to ensure the following:

- All pollutants and their sources are controlled
- Non-stormwater discharges are identified and eliminated, controlled, or treated
- Site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges
- BMPs are installed to reduce or eliminate pollutants post-construction are completed and maintained

Projects carried out under the Plan would be subject to the NPDES *Construction General Permit* and would require development and implementation of a SWPPP for project construction.

California Porter-Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967 requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The criteria for State waters within the city are contained in the Water Quality Control Plan for the Lahontan Region (LRWQCB). The Water Quality Control Plan, or Basin Plan, protects designated beneficial uses of State waters through the issuance of Waste Discharge Requirements (WDRs) and through the development of Total Maximum Daily Loads (TMDLs). Anyone proposing to discharge waste that could affect the quality of the waters of the State must make a report of the waste discharge to the RWQCB or SWRCB as appropriate, in compliance with Porter-Cologne.

California Safe Drinking Water Act

The USEPA has delegated to the California Department of Public Health responsibility for administering California's drinking-water program. In 1976, two years after the Federal Safe Drinking Water Act was passed, California adopted its own safe drinking water act (contained in the Health and Safety Code) and adopted implementing regulations (contained in California Code of Regulations Title 22). California's program sets drinking water standards that are at least as stringent as the Federal standards. Each community water system also must monitor for a specified list of contaminants, and the monitoring results must be reported to the state. Responsibility for the state's Drinking Water Program was transferred from the Department of Public Health to the Division of Drinking Water, which is a division of the SWRCB that was created in July 2014.

Sustainable Groundwater Management Act

In September 2014, the state passed legislation requiring that California's critical groundwater resources be sustainably managed by local agencies. The Sustainable Groundwater Management Act (SGMA, Water Code Section 10720 et seq.) gives local agencies the power to sustainably manage groundwater. It required DWR to establish priority levels for groundwater basins within the State based on their level of overdraft and required Groundwater Sustainability Agencies (GSAs) to form and develop Groundwater Sustainability Plans (GSPs) for medium- and high-priority groundwater basins that would bring the basins into sustainability by 2040 or 2042. Basins determined to be in critical overdraft were required to develop GSPs first. DWR is behind in the process of determining its approval of submitted GSPs for non-critical basins and was required to issue final notices of approval or disapproval by January 31, 2022.

Disaster Preparedness and Flood Prevention Bond Act of 2006 – Proposition 1E

This act rebuilds and repairs California's most vulnerable flood control structures to protect homes and prevent loss of life from flood-related disasters, including levee failures, flash floods, and mudslides. The Act also Protects California's drinking water supply system by rebuilding delta levees that are vulnerable to earthquakes and storms.

Cobey-Alquist Floodplain Management Act

The Cobey-Alquist Floodplain Management Act encourages local governments to plan, adopt, and enforce land use regulations for floodplain management to protect people and property from flooding hazards. This act also identifies requirements jurisdictions must meet to receive state and financial assistance for flood control.

c. Local

Palmdale Municipal Code Title 14, Chapter 14.05-Water Efficient Landscape

Title 14 Chapter 14.05 of the PMC establishes provisions for water management practices. It encourages stormwater best management practices to minimize run off and maximize infiltration to recharge groundwater. PMC Section 14.05.090 regulates landscape design plans for efficient water use including plant material, water features, and soil preparation. PMC Section 14.05.100 contains irrigation design criteria, specifications, and requirements. PMC Section 14.05.110 regulates grading design plans including recommendations for preventing excessive erosion and runoff. PMC Section 14.05.200 regulates stormwater management practices to minimize runoff and increase infiltration which recharges groundwater and improves water quality. PMC Section 14.05.080 requires project applicants to complete a soil management report in order to reduce runoff. This requires a project applicant to submit soil samples to a laboratory for analysis and recommendations. Soil would be tested for pH, total soluble salts, sodium, percent organic matter, and other physical or chemical properties.

Palmdale Municipal Code Title 15, Chapter 15.28-Floodplain Management

Chapter 15.28 of the PMC minimizes public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately owned land within flood prone mudslide (i.e., mudflow) or flood related erosion areas. This chapter of the PMC contains the basis for obtaining a development permit in flood prone areas and construction standards intended to minimize impacts of flooding.

4.10.3 Impact Analysis

a. Methodology and Significance Thresholds

This section describes the potential environmental impacts of the Plan relevant to hydrology and water quality. The impact analysis is based on an assessment of baseline conditions for the Planning Area, including watershed and surface waters, topography, groundwater, flood hazards, and water quality, as described in Section 4.7.1, *Environmental Setting*. This analysis identifies potential impacts based on the predicted interaction between the affected environment and construction, operation, and maintenance activities related to the Plan. This section describes impacts in terms of location, context, duration, and intensity, and recommends mitigation measures, when necessary, to avoid or minimize impacts.

According to CEQA Guidelines Appendix G, impacts related to hydrology and water quality would be potentially significant if implementation of the Plan would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - a. Result in substantial erosion or siltation on- or off-site

- b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site
 - c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; and/or
 - d. Impede or redirect flood flows
- 4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; and/or
 - 5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan

b. Project and Cumulative Impacts

Threshold 1: Would the Plan violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
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Impact HWQ-1 COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS AND IMPLEMENTATION OF THE GOALS AND POLICIES IN THE PLAN WOULD MINIMIZE THE POTENTIAL FOR WATER QUALITY DEGRADATION, ENSURE COMPLIANCE WITH WASTE DISCHARGE REQUIREMENTS, AND REDUCE IMPACTS TO A LESS THAN SIGNIFICANT LEVEL.

Construction activities carried out under the Plan could include road improvements and realignments, installation and realignment of utilities, demolition of existing structures for replacement, new development, and the potential replacement and/or improvement of drainage facilities. Water quality degradation from construction would be specific to each construction site. The topography of the site, the amount of soil disturbance, the duration that disturbed soil would be exposed, the amount of rainfall and wind that would occur during construction, and the proximity of the nearest waterbody all affect the potential for water quality degradation during construction. New development under the Plan would be limited to the Planning Area and infill development would be prioritized, which would minimize that amount of new infrastructure that would be required.

Construction of future developments could result in soil erosion due to earth-moving activities such as excavation and trenching for foundations and utilities, soil compaction and moving, cut and fill activities, and grading. If not managed properly, disturbed soils would be susceptible to high rates of erosion from wind and rain, resulting in sediment transport via storm water runoff from the construction sites. The types of pollutants contained in runoff from construction sites would be typical of urban areas, and may include sediments and contaminants such as oils, fuels, paints, and solvents. Additionally, other pollutants, such as nutrients, trace metals, and hydrocarbons, can attach to sediment and be transported to downstream drainages and ultimately into collecting waterways, contributing to degradation of water quality.

Individual construction activities that disturb one or more acres of land surface are subject to the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) adopted by the SWRCB. Compliance with the permit requires each qualifying development project to file a Notice of Intent with the SWRCB. Permit conditions require development of a SWPPP, which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal,

implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-storm water management controls. Inspection of construction sites before and after storms is also required to identify storm water discharge from the construction activity and to identify and implement erosion controls, where necessary. Compliance with the Construction General Permit is reinforced through the PMC, which requires plans to show all mitigation measures required under the National Pollution Discharge Elimination System (NPDES) permit issued to the City of Palmdale. In addition, Chapter 14.05 Section 14.05.080 of the PMC requires project applicants to complete a soil management report in order to reduce runoff.

In addition to concerns about the discharge of contaminated groundwater, construction and operation of development projects carried out under the Plan could contaminate the groundwater basin through direct introduction of pollutants or through infiltration of contaminants. Common sources of groundwater contamination include leaking underground storage tanks, septic systems, oil fields, landfills, and general industrial land uses. In general, all new development projects would be required to discharge waste to a public sewer.

Compliance with mandatory Clean Water Act and PMC requirements, and Plan goals and policies would reduce the potential for water quality degradation. Implementation of the following Plan goals and policies would help to prevent discharges of contaminated storm water and reduce the potential for violations of water quality standards or waste discharge requirements:

CONSERVATION

- **Goal CON-5: Protect the quality and quantity of local water resources.**
 - **Policy CON-5.1: Ground water recharge.** Ensure that ground water supplies are recharged and protect natural recharge areas such as the Little Rock and Big Rock Washes, and Amargosa and Anaverde Creeks from pollutants or other materials, which might degrade groundwater supplies.
 - **Policy CON-5.2: Groundwater protection.** Ensure that no mineral resource recovery activities extend below the groundwater table.
 - **Policy CON-5.3: Regional monitoring cooperation.** Cooperate with Los Angeles County Health Department and the Regional Water Quality Control Board in monitoring industrial and commercial uses utilizing hazardous or potentially polluting materials and fluids, to prevent their discharge into the groundwater aquifer.

- **Goal CON-6: Minimize the impacts of urban development on groundwater supplies.**
 - **Policy CON-6.1: Encourage natural recharge.** Restrict building coverage and total impervious area in the vicinity of natural recharge areas.
 - **Policy CON-6.2: Reduce landscaping irrigation needs.** Require the use of water conserving native or drought resistant plants and drip irrigation systems where feasible.
 - **Policy CON-6.3: Reduce street runoff.** Design streets to incorporate vegetation, soil, and engineered systems to slow, filter, and cleanse stormwater runoff.
 - **Policy CON-6.4: New construction water conservation.** Require water conserving appliances and plumbing fixtures in all new construction.
 - **Policy CON-6.5: Monitoring and coordination.** Coordinate with local water agencies to monitor ground water levels, State water allocations and development approvals, to assure that development does not outpace long-term water availability.

Compliance with applicable laws and regulations and implementation of the Plan goals and policies discussed above would minimize the potential for water quality degradation, ensure compliance with waste discharge requirements, and reduce impacts to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would the Plan substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact HWQ-2 IMPACTS TO GROUNDWATER SUPPLIES WOULD BE REDUCED TO A LESS THAN SIGNIFICANT LEVEL WITH COMPLIANCE TO THE PALMDALE MUNICIPAL CODE, THE MS4 PERMIT, LID GOALS, AND PLAN POLICIES.

Construction activities carried out under the Plan would primarily occur as part of infill/redevelopment. Construction activities, such as dewatering, could encounter groundwater. Although the construction of support and foundation structures could contact groundwater in limited instances, the displaced volume would not be substantial relative to the existing volume of 7,600-acre feet in the Antelope Valley Groundwater Basin. Water use during construction, such as for dust suppression or concrete mixing, would be temporary and minimal and would not substantially lower the groundwater level in the Antelope Valley Groundwater Basin.

Development carried out under the Plan could potentially interfere with groundwater recharge through the creation of new impervious surfaces. For new developments and redevelopment projects, the amount of new impervious surfaces would be reduced through Low Impact Development (LID) goals and policies in the Plan. Furthermore, new development must comply with the MS4 permit by employing BMPs for on-site detention/retention of stormwater runoff erosion events and tracking. Thus, development carried out under the Plan would not substantially interfere with groundwater recharge.

Additionally, the PMC Title 14 Chapter 14.05, establishes provisions for water management practices. The PMC encourages stormwater best management practices to minimize run off and maximize infiltration to recharge groundwater. Pursuant to PMC Section 14.05.200, all planted landscapes are required to have friable soil in order to maximize water retention and infiltration. In accordance with PMC Section 14.05.090, Landscape Design Plans must be submitted to the City and must include plants approved by the City in order to ensure the use of low-water plants. Additionally, irrigation design plans must follow requirement under PMC Section 14.05.100 in order to practice efficient water use. Adherence to the PMC Title 14 Chapter 14.05 sections 14.05.200, 14.05.090, and 14.05.100 would reduce the use of groundwater and maximize infiltration.

New development carried out under the Plan would increase the demand for water. As mentioned above, approximately 35 percent of the PWD water supply is sourced from groundwater, while LACWD 40 has the right to use up to 23,289 AFY of groundwater. However, projects facilitated under the Plan would be required to implement LID and goals and BMPs in order to improve groundwater recharge. The Clean Water Act and California State Water Resources Control Board require any development, infrastructure, redevelopment, or improvement project over one acre in size, to be approved for a Storm Water Pollution Prevention Plan (SWPPP), a General Permit particularly implemented during construction activities, as well as implementation of BMPs and methods to prevent erosion and off-site tracking of mud and dirt.

Further, impacts to groundwater supplies would be reduced to less than significant with compliance to the PMC, the MS4 permit, LID goals, and the goals and policies listed above in Impact HWQ-1.

Mitigation Measures

No mitigation measures are required.

Threshold 3.a:	Would the Plan substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?
Threshold 3.b:	Would the Plan substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
Threshold 3.c:	Would the Plan substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
Threshold 3.d:	Would the Plan substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

Impact HWQ-3 IMPACTS RELATED TO EROSION, FLOODING, AND STORMWATER DRAINAGE SYSTEM CAPACITY FROM SUBSTANTIAL ALTERATION OF DRAINAGE PATTERNS WOULD BE REDUCED TO A LESS THAN SIGNIFICANT LEVEL THROUGH COMPLIANCE WITH LIDS, THE NPDES, THE PMC, AND PROPOSED PLAN GOALS AND POLICIES.

Development carried out under the Plan would result in alterations to drainage patterns through structural changes to ground surface permeability and changes in topography from grading and excavation. As described under Impact HWQ-1, construction of future developments could result in soil erosion due to earth-moving activities such as excavation and trenching for foundations and utilities, soil compaction and moving, cut and fill activities, and grading. If not managed properly, disturbed soils would be susceptible to high rates of erosion from wind and rain, resulting in sediment transport and siltation of local streams via storm water runoff from construction sites. However, compliance with LID goals, the NPDES permit, and policies designed to maximize water infiltration should reduce erosion and salination. Additionally, PMC Section 14.05.110 requires grading of project sites to be designed in a way that minimizes soil erosion, runoff, and water waste and requires project applicants to submit a detailed grading plan to the City for approval. This includes grading so that all irrigation and normal rainfall remains within property lines and does not drain onto nonpermeable hardscapes, avoiding disruption of natural drainage patterns and undisturbed soil and avoiding soil compaction in landscape areas. Thus, compliance with PMC Section 14.05.110 would not only reduce runoff but would avoid the disruption of natural flows.

New development or redevelopment that would be facilitated by the Plan could incrementally increase the total impervious area within the Planning Area and increase storm water runoff. However, as described in the previous paragraph and Impact HWQ-1, implementation of Plan goals and policies, LID goals, and adherence to the requirements of PMC14 Chapter 14.05, specifically Section 14.05.110, would maximize the on-site infiltration capacity for new development and redevelopment projects and would minimize the offsite runoff that would leave those project sites.

In accordance with PMC Section 15.28.120, all areas of special flood hazard are required to meet construction standards to the satisfaction of the City Engineer. Construction standards include anchoring, the use of materials resistant to flood damage, the use of construction methods and practices that minimize flood damage, elevation above the base flood elevation, and floodproofing. Additionally, PMC Section 15.28.120 prohibits encroachment into floodways within area of special flood hazard, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer is provided demonstrating that the proposed encroachments would not result in any increase in flood levels within the community during the occurrence of the base flood discharge. Furthermore, PMC Title 15 Section 15.28.120 prohibits construction, substantial development, or other development including fill where the floodway has not been determined in areas of special flood hazard, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other development, will not increase the water surface elevation of the base flood more than one foot at any point within the City of Palmdale.

In addition, the following proposed Plan goals and policies would also help reduce impacts related to run-off:

CONSERVATION

- **Goal CON-6 Minimize the impacts of urban development on groundwater supplies.**
 - **Policy CON-6.1: Encourage natural recharge.** Restrict building coverage and total impervious area in the vicinity of natural recharge areas.
 - **Policy CON-6.2: Reduce landscaping irrigation needs.** Require the use of water conserving native or drought resistant plants and drip irrigation systems where feasible.
 - **Policy CON-6.3: Reduce street runoff.** Design streets to incorporate vegetation, soil, and engineered systems to slow, filter, and cleanse stormwater runoff.

SAFETY

- **Goal SE-2: Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
 - **Policy SE-2.6: Soils and Waterways.** Evaluate soils and waterways for risks from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire.
- **Goal SE-4: Minimize impacts to public safety and/or property as a result of flooding.**
 - **Policy SE-4.1: Floodplain Management Ordinance.** Require development in designated flood hazard areas to meet standards outlined in the City's Floodplain Management Ordinance and related criteria in the City's Engineering Design Standards.
 - **Policy SE-4.2: Drainage Management Plan.** Implement the City's drainage management plan through the capital improvement program and development review process.

- **Policy SE-4.3 National Pollutant Discharge Elimination System and Low Impact Development.** Ensure that new development meets National Pollutant Discharge Elimination System (NPDES) and associated Low Impact Development (LID) standards that limit peak runoff to pre-development rates.
- **Policy SE-4.4 Recharge Areas.** As appropriate, use open space and recreational areas to serve as floodplains that reduce downstream flooding and aid in groundwater recharge.
- **Policy SE-4.5: Floodplains Value.** Preserve and restore the natural and beneficial values served by floodplains to the extent feasible, consistent with public health, safety, and welfare.
- **Policy SE-4.6: Localized Flooding.** Address localized flooding east of SR-14, particularly near Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash.

Therefore, impacts related to erosion, flooding, and stormwater drainage system capacity from substantial alteration of drainage patterns would be reduced to a less than significant level through compliance with LIDs, the NPDES, the PMC, and proposed Plan goals and policies.

Mitigation Measures

No mitigation measures are required.

Threshold 4: In flood hazard, tsunami, or seiche zones, would the Plan risk release of pollutants due to project inundation?

Impact HWQ-4 RISKS RELATED TO THE RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION WOULD BE LESS THAN SIGNIFICANT THROUGH COMPLIANCE WITH APPLICABLE PLAN POLICIES.

The Plan is not located in a designated Tsunami Inundation Area according to the California Department of Conservation's Tsunami Inundation Maps (CDOC 2021) and is therefore not at risk of being impacted by a tsunami.

A seismic event could cause a seiche to occur at Lake Palmdale, which could potentially overtop the dam. However, the design report for the dam considers a reflection of the wave on return unlikely. Also, wave volume above the dam would not be substantial and would not result in damaging floods. Overpour on the downstream side of the dam will not cause any damage by erosion as the existing rockfill was designed to withstand it (Palmdale 1993).

As shown in Figure 4.10-1, the FEMA Flood Map provides the site-specific Flood Hazard Map relevant to the Planning Area. The Plan does contain areas within the 100-year flood zone and the 500-year flood zone.

While the Planning Area is subject to flooding and seiches, the Plan does not propose or require the buildout of new landfills or wastewater facilities as mentioned in Section 4.19 *Utilities and Service Systems*. Additionally, compliance with the flowing Plan policies would further reduce impacts:

- **Goal SE-4: Minimize damage from catastrophic failure of infrastructure.**
 - **SE-4.1 Evaluate inundation hazards:** As appropriate, evaluate inundation hazards related to the potential rupture of the California Aqueduct or failure of the Palmdale or Littlerock dams or location of proposed basins when reviewing development proposals.

SE-4.2 Buffers for gas lines: Require buffers for development in areas near high-pressure natural gas lines and that ensure such development is provided with alternative access/evacuation routes.

For all the reasons discussed above, risks related to the release of pollutants due to inundation of any property that would pose a substantial risk of pollutant release would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 5: Would the Plan conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact HWQ-5 THE PLAN WOULD BE CONSISTENT WITH THE LRWQCB BASIN PLAN AND PROJECTS CARRIED OUT UNDER THE PLAN WOULD BE SUBJECT TO PLAN POLICIES THAT WOULD HELP TO PROTECT LOCAL GROUNDWATER RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.10.1c, *Groundwater*, the Antelope Valley Basin is exempt from the requirements of SGMA and the PWD and LACWD 40 have not adopted a groundwater management plan. No regional Groundwater Management Plan currently exists for the Basin. Thus, the Plan would not interfere with a sustainable groundwater management plan.

Water quality in the Planning Area is governed by the Lahontan Regional Water Quality Control Board (LRWQCB), which sets water quality standards in the Water Quality Control Plan for the Lahontan Region (Basin Plan). The Basin Plan identifies beneficial uses for surface water and groundwater and establishes water quality objectives to attain those beneficial uses, together known as water quality standards. The Plan would not interfere with the beneficial uses of local surface water, and as described in Impact HWQ-1, above, would not violate water quality standards or degrade surface water quality. Therefore, the Plan would be consistent with the LRWQCB Basin Plan.

Additionally, compliance with the following policy would further minimize impacts:

- **Goal CON-6: Minimize the impacts of urban development on groundwater supplies.**
 - **Policy CON-6.5: Monitoring and coordination.** Coordinate with local water agencies to monitor ground water levels, State water allocations and development approvals, to assure that development does not outpace long-term water availability.

Because the Plan would be consistent with the LRWQCB Basin Plan and projects carried out under the Plan would be subject to Plan policies that would help to protect local groundwater resources, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

The analysis of impacts and regulations relating to hydrology and water quality discussed in this chapter apply to geographic levels at which the impacts could occur (local, regional, basin-wide, watershed-wide, and statewide). Therefore, impacts discussed in this chapter are cumulative in

nature because they are addressed at the level at which they would occur, either individually or in combination with other impacts inside or outside of the Planning Area. As discussed above, compliance with existing regulations and with proposed policies contained in the Plan would reduce impacts to hydrology and water quality to a less than significant level and thus the Plan would not make a substantial contribution to any cumulative hydrology and water quality impacts.

4.11 Land Use and Planning

This section analyzes the Plan's consistency with applicable local, regional, and state land use policies. Consistency with the South Coast Air Quality Management Plan (AQMP) is discussed in Section 4.3, *Air Quality*. Land use compatibility conflicts associated with Plan-facilitated growth are discussed in other sections of this EIR, including Sections 4.1, *Aesthetics*; 4.3, *Air Quality*; 4.9, *Hazards and Hazardous Materials*; and 4.13, *Noise*.

4.11.1 Environmental Setting

Most of Palmdale is currently designated for residential, commercial, and industrial uses. As described in Section 4.2.2 of this EIR, these areas are classified as Urban and Built-Up land according to maps prepared by the California Department of Conservation (DOC), but parts of the Planning Area (mostly outside city limits) contain approximately 4,898 acres of agricultural land, accounting for approximately 4.6 percent of the Planning Area.

4.11.2 Regulatory Setting

a. Regional

Agencies with direct roles in establishing and implementing land use policy and practice in the Planning Area are the Southern California Association of Governments (SCAG), the County of Los Angeles (in parts of the Planning Area outside city limits), and the City itself.

Southern California Association of Governments

The Planning Area is in the statutory planning area of the Southern California Association of Governments (SCAG). SCAG functions as the federally recognized Metropolitan Planning Organization (MPO) for Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial Counties (SCAG Region). According to the January 1, 2019, population estimates from the California Department of Finance (DOF), the SCAG region has an estimated 2017 population exceeding 19 million in an area of more than 38,000 square miles (SCAG2020). As the MPO, SCAG develops long-range regional transportation plans in cooperation with the California Department of Transportation (Caltrans) and the U.S. Department of Transportation (U.S. DOT) and, utilizing much of the same regional data, prepares and/or assists other agencies in developing the state-required regional Sustainable Communities Strategy (SCS); population, housing, and employment growth forecasts; regional transportation improvement programs; regional housing needs allocations (RHNA); and air quality management plans. Although SCAG has no direct land use authority, generalized land use planning consistency between local jurisdictions and SCAG is required by state law for purposes of meeting state-required environmental quality goals and/or for eligibility for a wide range of transportation and other types of intergovernmental grants and funding programs that have long-range positive environmental impacts.

Regional Comprehensive Plan

SCAG's 2008 Regional Comprehensive Plan (RCP) contains a general overview of federal, state, and regional plans applicable to the SCAG Region and serves as a comprehensive planning guide for forecasting long-range regional growth through 2035. The primary goals of the RCP are to improve the standard of living, enhance the environmental quality of life, and promote social equity. SCAG

member agencies adopted the most recent RCP in 2008. It set broad goals for the SCAG Region and identified strategies for all levels of government to use in local decision making. The RCP includes sections for each of the 13 SCAG-designated subregions. Palmdale is within the North Los Angeles County subregion. The RCP is advisory and does not have direct land use authority over cities and counties.

Regional Transportation Plan/Sustainable Communities Strategy

SCAG's 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is the companion long-range transportation and sustainability plan to the RCP that looks ahead to 2045 and provides a vision for the future of the regional multi-modal transportation system. The RTP/SCS is a long-range visioning plan that balances the region's projected future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS charts a course for closely integrating land use and transportation so that the region can accommodate projected growth. It outlines more than \$638 billion in transportation system investments through 2045. In June 2020, SCAG received approval of the transportation conformity determination for the 2020-2045 RTP/SCS (Connect SoCal) from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

AB 32, California's Global Warming Solutions Act of 2006, gave the California Air Resources Board (CARB) authority over sources of greenhouse gas emissions, including cars and light trucks. SB 375 was intended to help California achieve GHG reduction goals for cars and light trucks by changing land use patterns in tandem with regional and local transportation planning to generally reduce vehicle miles travelled (VMT) which, in turn, reduces GHG emissions. SB 375 required that the RTP include a Sustainable Communities Strategy (SCS) that demonstrates how the SCAG Region will meet its greenhouse gas (GHG) reduction CARB target. Therefore, there is a direct link between a local general plan being consistent with SCAG's 2020 RTP/SCS and GHG emission reduction.

The SCAG RTP/SCS vision for 2045 includes more compact development and seamless public transit options, including expanded bus and rail service. In this vision, people live closer to work, school, shopping and other destinations. Neighborhoods are more walkable and safer for bicyclists. Southern California's vast transportation network is preserved and maintained in a state of good repair, so that public tax dollars are not expended on costly repairs and extensive rehabilitation. Housing across the region is sufficient and affordable and meets forecasted demands of a growing population, largely due to natural increase.

b. Local

City of Palmdale

The City of Palmdale establishes land use policy and practice in Palmdale through its General Plan, various specific plans, and the Palmdale Municipal Code (PMC).

Palmdale General Plan

The proposed Plan is a comprehensive update of the City's current General Plan and would thus replace it in every respect. The proposed Plan would therefore not conflict with goals, policies, or standards established in the City's current General Plan and those goals, policies, and standards are therefore not listed here. The City's current General Plan land use map shown in Figure 4.11-1 would be replaced by the proposed General Plan land use map shown in Figure 2-3 of this EIR.

Palmdale Zoning Ordinance

The City of Palmdale Zoning Ordinance, contained within the PMC, is one of the primary means of implementing the General Plan. The Zoning Ordinance establishes standards for development of individual properties (through their zoning designation), including standards regulating allowed uses, setbacks from neighboring properties, and the intensity, height, and appearance of development. State law requires that a city's Zoning Ordinance be consistent with the City's General Plan and that the Zoning Ordinance be revised to reflect the adopted General Plan within a reasonable period of time from its adoption, which is typically one year. Figure 4.11-2 shows Palmdale's zoning map, which shows the zoning designation of all properties in the city.

County of Los Angeles Zoning Ordinance

In the parts of the Planning Area outside the City but within Palmdale's Sphere of Influence (SOI), the Zoning Ordinance of the County of Los Angeles applies. In these areas, however, uses must be consistent with local land use plans, which in this case include Palmdale's General Plan (Los Angeles County Department of Regional Planning 2009).

Palmdale Specific Plans

A Specific Plan is a tool for the systematic implementation of a jurisdiction's General Plan within particular geographic areas in a city. It serves as a link between General Plan policies and proposed development in a particular area. A Specific Plan can also be a good tool for creating a "sense of place" in an area, because it addresses issues such as the location and intensity of land uses, public streets, water and sewer improvements, development standards, and implementation within that area.

The City has adopted 13 specific plans to govern development in various parts of Palmdale. The following is a discussion of each Specific Plan, taken from the Land Use & Urban Form chapter of the Plan.

- The Antelope Valley Auto Center Specific Plan was adopted in 1989 and updated in 2005. The purpose of this plan is to establish policies and standards that will regulate the construction within the Antelope Valley Auto Center. The Specific Plan project area spans an area of 78 acres and is located west of the Antelope Valley Freeway, north of Avenue Q.
- The Antelope Valley Business Park Specific Plan was adopted in 1991 and updated in 1992. The specific plan is created to establish policies and standards that promote a balanced development of commercial, industrial and business park uses. The Specific Plan project area consists of 120 acres at the southeast corner of Avenue M and 10 Street West.
- The City Ranch Specific Plan was adopted in 1992 and serves as a regulatory tool setting forth policies and standards guiding development within the City Ranch project area. The Specific Plan was amended in 2021- (when the name was changed to Anaverde Nuevo). The project area consists of 1,400 acres located on generally south of Elizabeth Lake Road between Ranch Center Drive and Louise Lane and continuing south of Avenue S to the City boundary.
- The Foothill Ranch Specific Plan was adopted in 2009. The plan's purpose is to establish guidelines that facilitate balanced mixed-use development consisting of residential, commercial and open space uses within the specific plan project area. The project site is approximately 540 acres and is located within the southeast region of Palmdale at the southeast corner of Barrel Springs Road and 47th Street East.

- The Hillside Specific Plan was adopted in 1986 and amended in 1995. The specific plan was created to set forth policies and standards that facilitate the development of three residential communities. The Hillside Specific Plan consists of 223 acres and is in the northwestern region of Palmdale.
- The Joshua Hills Specific Plan, adopted in 1993, was created with the purpose of creating a planned community with policies and standards that promote the compatible development of residential, commercial and public facility uses within the Joshua Hills project site. The Specific Plan area consists of 435 acres located at the southeast corner of 25th Street East and Avenue S.
- The Lockheed Plant 10 Specific Plan was adopted in 1992 and amended in 1994. The specific plan establishes policies and standards that govern development within the project site. The project site comprises of approximately 539 acres located northwest of the intersection of Sierra Highway and Avenue P in Palmdale.
- The Palmdale Business Park Center Specific Plan was adopted in 1996. The specific plan's purpose is to establish regulations that facilitate the development of the master planned commercial industrial complex. The Specific Plan site consists of approximately 632 acres located at the southwest corner of Avenue M and 15th Street East
- The Palmdale Trade and Commerce Center Specific Plan was adopted in 1990 and updated in 2014 and 2017. The plan's purpose is to implement land use policies and standards that create a balanced mix of commercial, industrial and public uses to meet local and regional employment needs. The Palmdale Trade and Commerce Center Specific Plan consists of 118 parcels spanning an area of 756 acres within the central region of Palmdale.
- The Palmdale Transit Area Specific Plan (PTASP) was adopted in 2020. The PTASP establishes policies and standards that promote pedestrian-oriented, mixed-use development within the Palmdale transit area. The project boundary spans a total area of 746 acres and is bounded by Technology Drive to the north, East Palmdale Boulevard to the south, SR-14 to the west and 10th Street East along the eastern boundary.
- The Palmdale Transit Village Specific Plan was adopted in 2007. Through establishing land use policies and standards for the project area, the specific plan promotes Transit-Oriented Development within the Palmdale Transit Village. This specific plan was rescinded after the adoption of the PTASP..
- The Rancho Vista Specific Plan was adopted in 1986 and last amended in 2016. The purpose of the specific plan is to employ land use standards and policies that encourage the development of the Rancho Vista residential community. The specific plan project site consists of 1,379 acres and is located at the southwest corner of Avenue N-8 and 30th Street West within the northwest section of Palmdale.
- The Ritter Ranch Specific Plan was adopted in 1992. The specific plan encourages the development of a mixed-use project incorporating residential, open space, public facility, recreational, educational and commercial land uses. The project site spans an area of approximately 10,625 acres and is located south of Elizabeth Lake Road, west of 25th Street West.

Figure 4.11-1 Current Palmdale General Plan Land Use Map

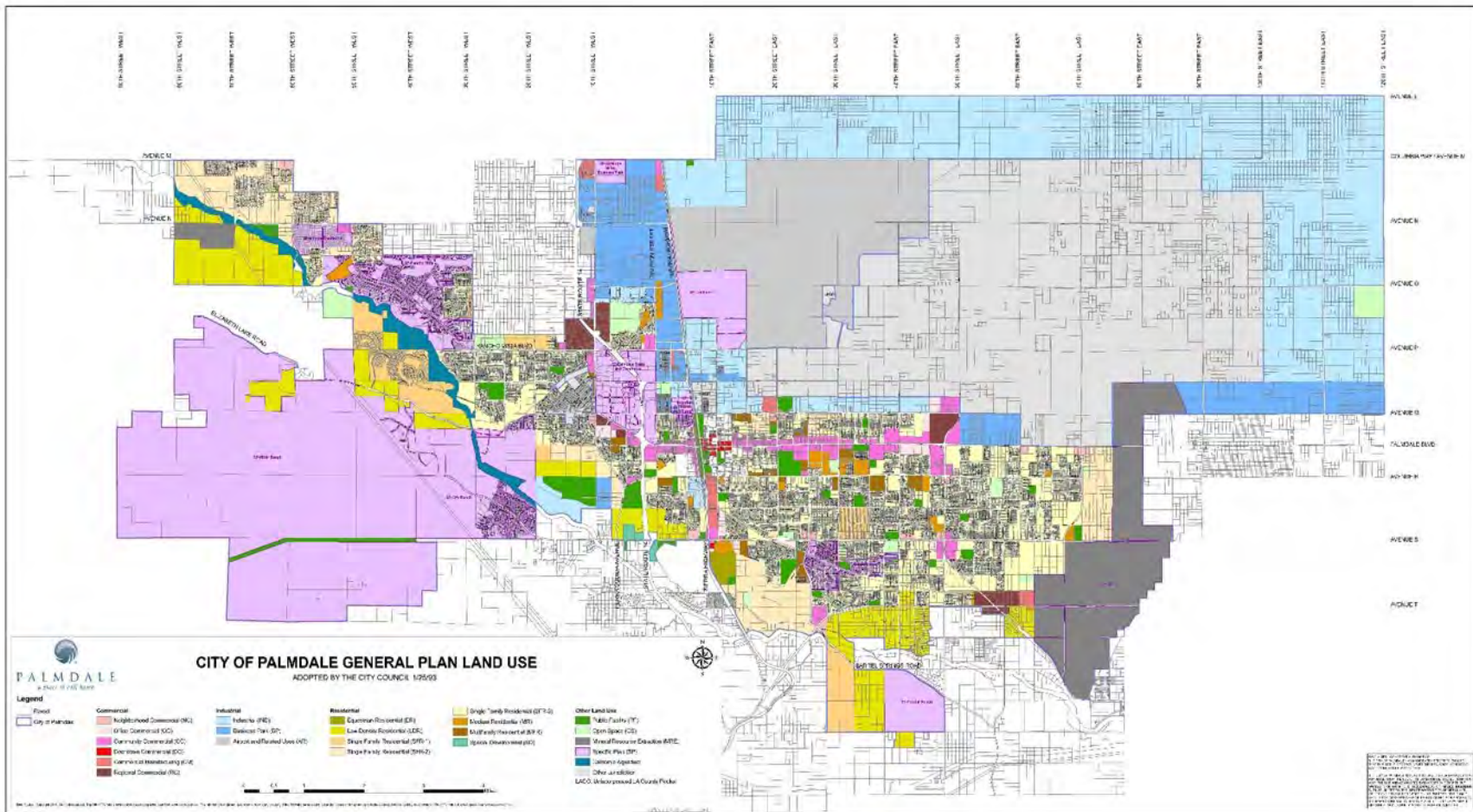
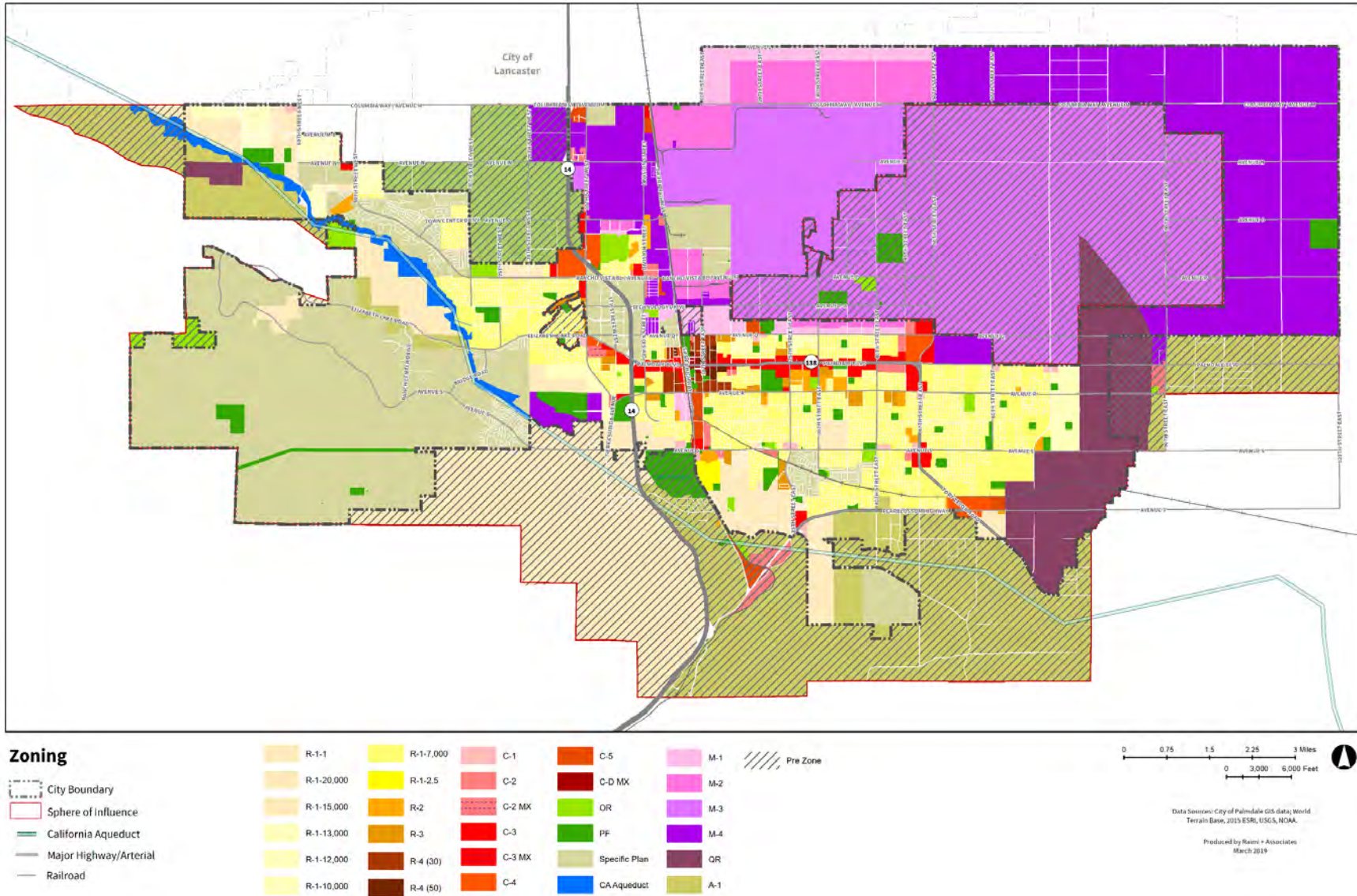


Figure 4.11-2 Current Palmdale Zoning Map



West Mojave Conservation Plan

The West Mojave Plan is a habitat conservation plan that acts as a comprehensive strategy to conserve the desert tortoise, Mohave ground squirrel, and over 100 sensitive plants, animals, and natural communities. The plan provides for a streamlined program for complying with the requirements of the California and federal Endangered Species Acts. It encompasses a 9,357,929-acre (14,621-square mile) planning area located to the north of the Los Angeles metropolitan area and applies to public and private land (U.S. Department of interior 2004).

4.11.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to land use and planning would be potentially significant if implementation of the Plan would:

1. Physically divide an established community; and/or,
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

To determine the Plan's potential to conflict with any land use plan, policy, or regulation (Threshold 2), the discussion of land use and planning impacts in this section of the EIR analyzes the Plan's consistency with City and SCAG plans and policies related to land use. Adoption of the Plan would result in a potentially significant land use impact only if the Plan would conflict with one or more applicable land use plans, policies, or regulations of the City or SCAG previously adopted for the purpose of avoiding or mitigating a regionally significant environmental impact. In general, SCAG incorporates well-established city-level general plans in its regional plans and actions. As long as a proposed local general plan is largely consistent with the most recently adopted SCAG plans or policies, adoption of an updated local general plan does not result in environmental impacts that are considered significant. SCAG ultimately has the discretion to determine consistency of the Plan with the policies, plans, and/or programs that fall within that agency's purview.

b. Project and Cumulative Impacts

Threshold 1: Would the Plan physically divide an established community?
--

Impact LU-1 THE PLAN RETAINS AND CONTINUES THE PLANNING AREA'S EXISTING STREET SYSTEM AND PROTECTS ITS ESTABLISHED COMMUNITIES. IT WOULD THEREFORE NOT DIVIDE AN ESTABLISHED COMMUNITY AND THERE WOULD BE NO IMPACT.

Comparison of the proposed Plan land use map shown in Figure 2-3 to the City's current land use map shown in Figure 4.11-1 shows that the Plan retains and continues the Planning Area's existing pattern of arterial highways and established communities in Palmdale. The Plan vision specifically includes goals that facilitate the development of complete neighborhoods, promote high quality mixed use development that includes office employment, affordable housing and improved transit and pedestrian linkages near existing transit. Therefore, the Plan would not divide an established community and there would be no impact.

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would the Plan cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Impact LU-2 BECAUSE THE PLAN AND ITS POLICIES ARE CONSISTENT WITH SCAG'S RCP AND RTP/SCS AND OTHER APPLICABLE PLANS, THE PLAN WOULD NOT CONFLICT WITH APPLICABLE LAND USE PLANS, POLICIES, OR REGULATIONS ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING AN ENVIRONMENTAL EFFECT. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

2008 SCAG RCP Land Use Policies

The 2008 RCP has the following chapters, each of which includes goals and outcomes to measure progress toward a more sustainable region (SCAG 2017b):

- Land Use and Housing
- Open Space and Habitat
- Water
- Energy
- Air Quality
- Solid Waste
- Transportation
- Security and Emergency Preparedness
- Economy

Each of the topics listed above, other than Land Use and Housing, is addressed in other sections of this EIR. Consistency with the South Coast AQMP is discussed in Section 4.3, *Air Quality*. Land use compatibility conflicts associated with growth carried out under the Plan are discussed in other sections of this EIR, including Sections 4.1, *Aesthetics*, 4.3, *Air Quality*, 4.9, *Hazards and Hazardous Materials*, and 4.13, *Noise*. Housing is addressed in Section 4.14, *Population and Housing*. Therefore, the review below is focused on land use, with the acknowledgement that land use is inherently a major factor in the other listed topics.

Local consistency with RCP land use usually leads to consistency with the other RCP components that are based, to some extent, on underlying current and future land uses. The "Voluntary Local Government Best Practices" relating to local land use are listed on Page 21 of the RCP. The discussion below lists applicable voluntary best practices from the RCP and explains how the Plan relates to each of them.

- LU-4** Local governments should provide for new housing, consistent with State Housing Element law, to accommodate their share of forecast regional growth.
- LU-4.1** Local governments should adopt and implement General Plan Housing Elements that accommodate housing needs identified through the Regional Housing Needs Assessment (RHNA) process. Affordable housing should be provided consistent with RHNA income category distributions adopted for each jurisdiction. To provide housing, especially

affordable housing, jurisdictions should leverage existing state programs such as Housing and Community Development’s (HCD) Workforce Incentive Program and density bonus law and create local incentives (e.g., housing trust funds, inclusionary zoning, tax-increment-financing districts in redevelopment areas and transit villages) and partnerships with non-governmental stakeholders.

The 2021-2029 Housing Element continues the City’s focus on the preservation and maintenance of its housing stock, incorporates programs designed to facilitate the development of affordable housing and increase access to homeownership for all income groups within Palmdale. Additionally, the City will continue programs that identify adequate and sufficient sites for additional residential development aimed at meeting needs of lower-income households, special-needs populations and regional housing needs. The Housing Element identifies housing needs in the City and sets forth policies to guide future housing development consistent with General Plan goals and policies.

Table 4.11-1 provides an overview of the 2021-2029 Housing Element sites inventory compared to its RHNA. The sites inventory demonstrates that there are adequate vacant and underutilized sites to accommodate the City’s 6th Cycle RHNA allocation of 6,640 units. Future RHNA planning cycles will require the City to update its Housing Element for the post-2029 period. Future Housing Element updates will be subject to subsequent CEQA review and are beyond the scope of this EIR.

Table 4.11-1 Comparison of Sites Inventory and RHNA

	Lower Income	Moderate Income	Above Moderate Income	Total
RHNA	2,712	1,004	2,924	6,640
Potential ADUs	110	2	48	160
Pipeline Projects	0	32	7,487	7,487
City Ranch SP (Anaverde)	0	0	2,318	2,318
Ritter Ranch SP	0	0	5,169	5,169
Remaining need	2,602	1,002	0	3,604
Sites Inventory	3,480	1,459	0	4,939

Source: City of Palmdale 2021

- LU-6.3** Local governments and subregional organizations should develop ordinances and other programs, particularly in the older, more urbanized parts of the region, which will enable and assist in the cleanup and redevelopment of brownfield sites.
- LU-6.4** Local governments and subregional organizations should develop adaptive reuse ordinances and other programs that will enable the conversion of vacant or aging commercial, office, and some industrial properties to housing and mixed-use with housing.

Several areas have been identified as key districts and centers where the private market, non-profits, and/or City-initiated projects would lead to reuse and conversion of properties in response to market demand or for various public and semipublic purposes. These areas are Downtown Palmdale, the Palmdale Regional Medical Center, the Antelope Valley Mall, Palmdale Boulevard, and the Village and Multiuse Centers. A recent example of a planning program involving the conversion of vacant and underutilized land to create a pedestrian-oriented mixed use development district

around the future multi-modal high speed rail station is the PTASP, which was approved in 2020. The PTASP encompasses an area of 746 acres.¹ Existing land uses within the PTASP project area included single- and multi-family residential, commercial, industrial and public facility designations. The PTASP employs a form-based code approach of development that focuses on the placement and form of buildings to achieve a vibrant urban core with walkable mixed-use neighborhoods. To improve streetscapes, connectivity to open spaces and landmarks within the PTASP project area, land uses are organized into three categories: districts, corridors and neighborhoods. The High Speed Rail (HSR) Station Area Core district, Regional Commercial district, and Business Mix district will help to transform the area into a distinctive, lively and active environment by enhancing pedestrian connectivity and multi-modal transportation within and throughout the surrounding area, contribute to neighborhood-scale commercial and retail services, and establish business parks comprised of mid-intensity offices and light-industrial complexes. Two commercial corridors, along Avenue Q and Palmdale Boulevard, will be improved to support pedestrian connectivity, moderately scaled buildings with ground floor retail, and provide sufficient space to accommodate amenities, outdoor dining, and pedestrian activity. Neighborhoods within the PTASP will be designed to include a variety of residential types and densities to create complete, compact and connected residential development. Potential site contamination, including cleanup of sites, if necessary, will be addressed through regulations described in Chapter 4.9, *Hazards and Hazardous Materials* of this EIR.

With implementation of these plans and policies, the Plan would be consistent with the SCAG 2008 RCP and this impact would be less than significant.

SCAG 2020 RTP/SCS

The RTP/SCS is a planning and strategy document with a focus on integrating major regional transportation infrastructure investments with land use planning. For cities like Palmdale that are largely continuing their existing land uses, development patterns, and transportation infrastructure, the RTP/SCS largely incorporates local land use plans provided to SCAG by local jurisdictions during development of the RTP/SCS.

The 2020 RTP/SCS has identified strategies, which are intended to guide and support member jurisdictions implement policies that achieve and advance the regional growth vision of the RTP/SCS. They are:

1. Focus growth near destinations and mobility Options
2. Promote diverse housing choices
3. Leverage technology innovations
4. Support the implementation of sustainability policies
5. Promote a green region

The Plan does not conflict with these strategies for the following reasons.

- Strategy 1: The Plan proposes development patterns that support well-connected mobility near the future multimodal transit station and the redesigning of key boulevards and neighborhood connectors to be constructed and operated as multimodal boulevards.

¹ As mentioned in Section 2, *Project Description*, the Plan would involve a slight expansion of the boundary of the PTASP. This proposed expansion would fully include many parcels with split zoning within the Specific Plan area. Because the Specific Plan area is in the core of the city, this action would not affect the Planning Area of the proposed Plan or require annexations.

- Strategy 2: The Plan encourages a variety of housing types developed at a range of densities to serve varying household types including, but not limited to, single-family attached and detached, accessory dwelling units, multi-family apartments, townhomes, duplexes, triplexes, quadplexes and condominiums.
- Strategy 3 and 4: The 2020 RTP/SCS states that it supports improving access to services through technology. The Plan encourages the implementation of innovative infrastructure that can accommodate emerging technologies such as autonomous and connected vehicles, attract and increase sustainable businesses and opportunities for telecommuting in the city and encourage the use of alternative fuels to reduce tailpipe emissions from vehicles.
- Strategy 5: The Plan encourages the preservation of natural topographic features during the planning and development process and the creation of an undeveloped or rural greenbelt around the city that is comprised of natural areas, parks and open space, and agricultural lands. To improve access to public park space, the Plan supports the development of pedestrian and bicycle linkages to local trails and open space.

Based on the discussion above, the Plan is consistent with SCAG'S 2020 RTP/SCS and this impact would be less than significant.

City of Palmdale Specific Plans

The City of Palmdale has multiple specific plans outlined above. They are more specific than the underlying zoning requirement and define the permitted land uses and development standards for the unique characteristics of the planning area for each specific plan. The Plan has been designed to be consistent with (not conflict with) any of the City's specific plans.

Although the Plan would be generally consistent with the City's existing specific plans, upon adoption of the Plan, the City would review its currently adopted specific plans and revise them where necessary to reflect changes made in the Plan, such as land use, density/intensity, design, and development. State law requires all Area and Specific Plans to be consistent with the General Plan. As with the Zoning Ordinance, the statutes allow a "reasonable" time for these modifications, which the courts have generally interpreted to be one year from the date of General Plan adoption. The Plan also recognizes the existing land uses established by Specific Plans, reducing the potential of a conflict between the Plan and existing Specific Plans.

West Mojave Conservation Plan

Palmdale is in the West Mojave Conservation Plan area. As described in Section 4.4, *Biological Resources*, the West Mojave Plan is a habitat conservation plan that acts as a comprehensive strategy to conserve the desert tortoise, Mohave ground squirrel, and over 100 sensitive plants, animals, and natural communities. If there is any development carried out under the proposed Plan that is within the Conservation Areas, it would be required to follow the West Mojave Plan's land use and conservation policies to ensure that development is in accordance with the West Mojave Plan. As discussed in Section 4.4, *Biological Resources*, future development associated with proposed Plan would be subject to the City's standard development review process, during which the City could evaluate such projects for consistency with the West Mojave Plan and applicable General Plan policies; therefore, future development would not conflict with the West Mojave Plan. As discussed throughout this impact discussion, implementation of the proposed Plan would be generally consistent with applicable adopted plans, regulations, or policies. Therefore, impacts associated with potential inconsistencies with applicable land use plans for the city would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.11.4 Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within a city's plan area. Additionally, the land use and planning impacts discussed in this chapter are cumulative in nature. As discussed in this chapter, the Plan is consistent with SGAG's regional policies including those in the 2020 RTP/SCS and the 2008 RCP. These SCAG policies in turn apply to local jurisdictions throughout the SCAG region and address the cumulative land use and planning impacts of future development across the region. Therefore, the Plan would not make a substantial contribution to any cumulative impact related to land use and planning.

4.12 Mineral Resources

This section of the EIR analyzes the potential physical environmental effects of Plan implementation related to mineral resources. Data used to prepare this section was obtained from the Plan and the Natural + Cultural Resources chapter of the Existing Conditions Report for the Plan, the existing City of Palmdale General Plan, the California Department of Conservation (DOC), the California Geological Survey (CGS), and other sources.

4.12.1 Environmental Setting

The Planning Area encompasses approximately 104 square miles located between the foothills of the San Gabriel Mountains and the Sierra Pelona Mountains, and the Mojave Desert to the north and east. State Route 14 traverses the eastern portion of the Planning Area and Highway 138 traverses the western portion of the Planning Area.

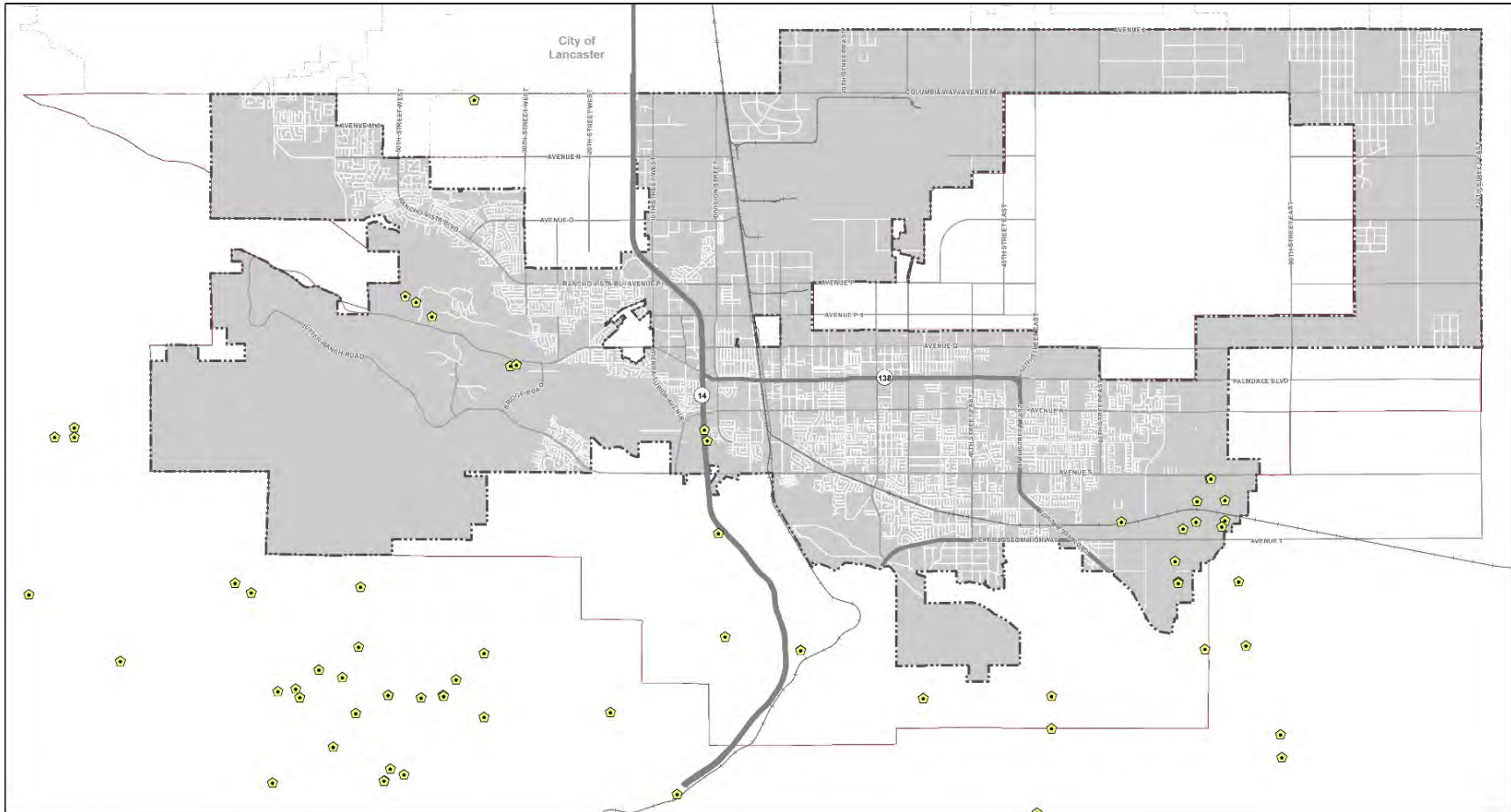
The Planning Area is in the southern part of the Mojave Desert geomorphic province. The Mojave Desert is a broad interior region of isolated mountain ranges separated by stretches of desert plains. There are two important fault trends that control topography: a prominent northwest-southeast trend and a secondary east-west trend (apparent alignment with Transverse Ranges is significant). The Mojave province is wedged in a sharp angle between the Garlock Fault (southern boundary Sierra Nevada) and the San Andreas Fault, where it bends east from its northwest trend. The northern boundary of the Mojave is separated from the prominent Basin and Range by the eastern extension of the Garlock Fault (CGS 2002).

Known and potential major deposits of sand and gravel, crushed rock, clay, limestone, and dolomite have been identified in the Planning Area by the State Division of Mines and Geology. Because transportation costs are high for these materials, their value depends on proximity to the user. The area's construction industries rely on local resources for aggregate supply in the region. Sand and gravel deposits are found extensively in flood plains and stream channels located north of the San Gabriel Mountains in the Little Rock and Big Rock Wash areas. The availability of aggregate deposits and their proximity to markets are factors in the strength of the region's economy (Palmdale 1993). Mineral resource locations are shown in Figure 4.12-1.

Palmdale lies within the Palmdale Production-Consumption region, which is a California Department of Conservation-designated Mineral Resource Zone encompassing 1,103 square miles, including Palmdale and Lancaster. Two MRZ-2 areas were classified within the Palmdale area. The mineral deposits within Palmdale are the Littlerock Fan and the Big Rock Creek Fan alluvial deposits. The Littlerock Fan is a 12 square mile area extending from the north flank of the San Gabriel Mountains for about 8 miles, which includes the Littlerock Wash floodplain and the fan area to the west (DOC 1984). The Big Rock Creek Fan encompasses a 26 square mile area extending northward from the San Gabriel Mountains for 8 miles. Both mineral deposits are composed of approximately 60% fine to coarse sand and silt, overlain by approximately 40% pebbly gravel.

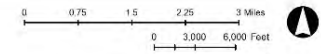
Mineral resource extraction areas designated by the current General Plan (Palmdale 1993) are presented in Figure 4.12-2.

Figure 4.12-1 Mineral Resource Locations in and Around Palmdale



Mineral Resources

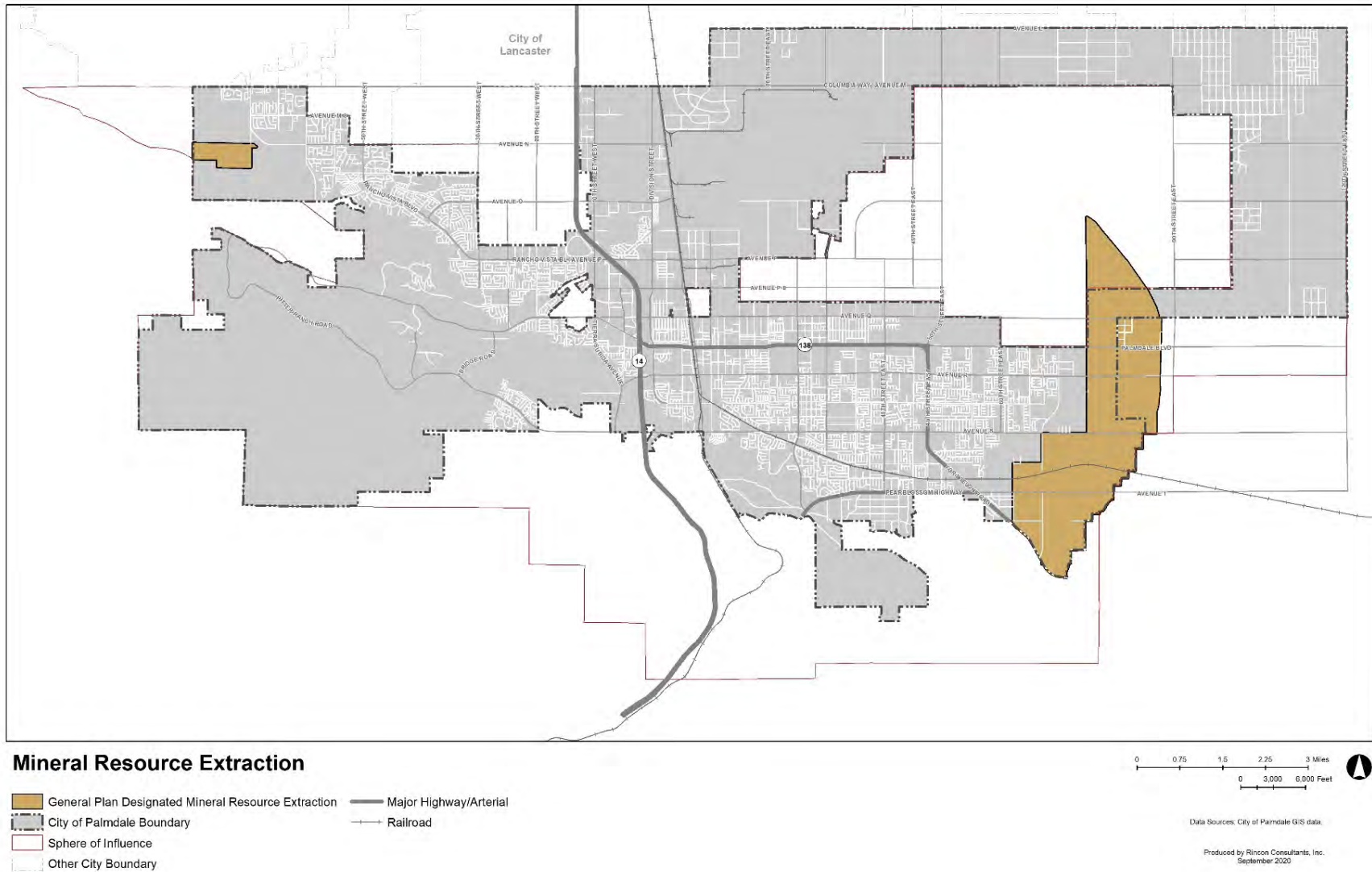
- Mineral Resource Location
- Major Highway/Arterial
- City of Palmdale Boundary
- Sphere of Influence
- Other City Boundary
- Railroad



Data Sources: City of Palmdale GIS data; USGS

Produced by Rincon Consultants, Inc.
 September 2020

Figure 4.12-2 Mineral Resource Extraction in Palmdale



4.12.2 Regulatory Setting

Regulations on mining and mineral resources are a mix of federal, state, and local regulations and legislation, depending on where development/land is located.

a. State

Surface Mining and Reclamation Act of 1975

The California Surface Mining and Reclamation Act of 1975 (SMARA) requires geologists to identify mineral resource zones (MRZ) based on the known or predicted mineral resources of that particular area to assist in the protection and developmental uses of mineral resources in the state. MRZs are defined as follows:

- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2: Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
- MRZ-3: Areas containing mineral deposits the significance of which cannot be evaluated from available data.
- MRZ-4: Areas where available information is inadequate for assignment to any other MRZ zone.

b. Local

Surface Mining Ordinance

The City of Palmdale's Zoning Ordinance (PMC) constitutes the comprehensive zoning regulations in relation to SMARA. On January 20, 1994, the State Mining and Geology Board (SMGB) certified the City of Palmdale's mining ordinance (Ordinance No. 1023) under Resolution Number 94-54,

Surface Mining Administrative Review Procedures

PMC, Title 17 (Zoning), Chapter 17.102 provides information on Surface Mining and Reclamation procedures used within the City's jurisdiction. PMC Chapter 17.102 requires a Conditional Use Permit for surface mining operations and reclamation plans. Additionally, all reclamation plans must conform to statewide performance standards. Furthermore, PMC Chapter 17.72 establishes the Quarry and Reclamation Zone to preserve areas of the City that have been designated by the State of California as Significant Mineral Resource Areas, or which possess market grade mineral resources, to ensure long-term availability of these sites for the extraction and processing of rock, sand, gravel, and similar materials.

4.12.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to mineral resources would be potentially significant if implementation of the Plan would:

1. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or,

2. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

b. Project and Cumulative Impacts

<p>Threshold 1: Would the Plan result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?</p> <p>Threshold 2: Would the Plan result in the loss of availability of a locally important mineral resource recovery site delineation on a local general plan, specific plan, or other Land use plan.</p>
--

Impact MIN-1 BECAUSE THE PLAN WOULD NOT REDESIGNATE ANY AREAS CURRENTLY DESIGNATED AS MINERAL RESOURCE ZONES, AND PROJECTS CARRIED OUT UNDER THE PLAN WOULD BE REQUIRED TO ADHERE TO APPLICABLE REGULATIONS AND PLAN POLICIES RELATED TO MINERAL RESOURCES, IMPACTS RELATED TO THE LOSS OF AVAILABILITY OF A KNOWN MINERAL OR A LOCALLY IMPORTED MINERAL RESOURCE RECOVERY SITE DELINEATION WOULD BE LESS THAN SIGNIFICANT.

As mentioned above under in Section 4.12.1, *Environmental Setting*, the City of Palmdale contains two areas recognized by SMARA as MRZ-2 areas. As can be seen by comparing the proposed Plan Land Use Map shown in Figure 2-3 of this EIR to the City's current General Plan Land Use Map shown in Figure 4.11-1 of this EIR, the Plan would retain all areas designated Mineral Resource Extraction.

Projects carried out under the Plan would be required to adhere to SMARA regulations, PMC Title 17 Chapter 17.102 and Chapter 17.72 of the PMC(described in Section 4.12.2, *Regulatory Framework*). For example, Chapter 17.72 establishes the Quarry and Reclamation Zone to preserve areas of the City that have been designated by the State of California as Significant Mineral Resource Areas, or which possess market grade mineral resources, to ensure long-term availability of these sites for the extraction and processing of rock, sand, gravel, and similar materials.

Projects carried out under the Plan would also be required to be consistent with the Plan goals and policies relevant to mineral resources listed below.

CONSERVATION

- **Goal CON-3: Plan for safe operations of mineral resource extraction areas and reduce unreasonable impacts.**
 - **Policy CON-3.1: Reduce mineral resource extraction impacts.** Reduce impacts to human and environmental health caused by mineral resource extraction including:
 - Ground water contamination
 - Removal or demise of sensitive Ecological Areas of flora and fauna
 - Excessive noise or dust
 - **Policy CON-3.2: Land use buffers.** Maintain buffers between mineral resource extraction areas and other sensitive land uses (i.e., residential, public, institutional, open space and parks, among others) to reduce unnecessary impacts while in operation.

- **Goal CON-4: Plan for mineral resource extraction site remediation and end users.**
 - **Policy CON-4.1: Mining reclamation plan.** Require mining operators to establish a reclamation plan that indicates end users when mining operations cease and how the transition to new uses shall be implemented.
 - **Policy CON-4.2: Reclamation fund.** Establish a use-based mechanism for mining operators to begin contributing to a reclamation fund annually to be used after operations cease.
 - **Policy CON-4.3: Plan remediation and restoration of sites.** Plan for remediation and restoration of extraction sites after operations cease, including adequate areas for groundwater recharge.
- **Goal CON-5: Protect the quality and quantity of local water resources.**
 - **Policy CON-5.2: Groundwater protection.** Ensure that no mineral resource recovery activities extend below the groundwater table.

While none of these goals and their related policies directly address potential land use conflicts that could result in the loss of availability of a mineral resource, they would help avoid land use conflicts that could contribute to such an impact.

In summary, because the Plan would not redesignate any areas currently designated as mineral resource zones, and projects carried out under the Plan would be required to adhere to applicable regulations and Plan policies related to mineral resources, impacts related to the loss of availability of a known mineral or a locally imported mineral resource recovery site delineation would be less than significant.

Mitigation Measures

No mitigation measures are required.

Cumulative Analysis

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within the Planning Area. Mineral resources are finite and demand for them extends beyond the Planning Area. Impacts from the loss of mineral resources could combine with such impacts in other geographical areas to create a cumulative impact. However, for the reasons discussed in Impact MIN-1, the Plan would not make a substantial contribution to any cumulative impacts related to mineral resources, and cumulative impacts would be less than significant.

4.13 Noise

This section describes existing ambient noise conditions within the Planning Area and analyzes the potential noise-related impacts from implementation of the Plan. Impacts related to noise from construction, building operations, and vehicular traffic are addressed.

4.13.1 Environmental Setting

a. Overview of Sound Measurement

Noise is defined as unwanted sound. Noise level measurements include intensity, frequency, and duration, as well as time of occurrence. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dBA level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dBA, and a sound that is 10 dBA less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dBA greater than the ambient noise level to be judged as twice as loud. In general, a 3 dBA change in the ambient noise level is noticeable, while 1 to 2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40 to 50 dBA, while areas adjacent to arterial streets are typically in the 50 to 60 or more dBA range. Normal conversational levels are usually in the 60 to 65 dBA range and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels from point sources, such as those from individual pieces of machinery, typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from the noise source. Noise levels from lightly traveled roads typically attenuate at a rate of about 4.5 dBA per doubling of distance. Noise levels from heavily traveled roads typically attenuate at about 3 dBA per doubling of distance. Noise levels may also be reduced by intervening structures. Generally, a single row of buildings between the receptor and the noise source can reduce noise levels by about 5 dBA, while a solid wall or berm can reduce noise levels by 5 to 10 dBA (Federal Transit Administration [FTA] 2006). The manner in which homes in California are constructed generally provides a reduction of exterior-to-interior noise levels of approximately 20 to 25 dBA with closed windows (FTA 2006).

The duration of noise is important because sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. Lmax is the highest RMS (root mean squared) sound pressure level within the measurement period, and Lmin is the lowest RMS sound pressure level within the measurement period.

The time period in which noise occurs is also important since nighttime noise tends to disturb people more than daytime noise. Community noise is usually measured using the Day-Night Average Level (Ldn), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring

during nighttime (10 p.m. to 7 a.m.) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7 p.m. to 10 p.m. and a 10 dBA penalty for noise occurring from 10 p.m. to 7 a.m. The Ldn and CNEL typically do not differ by more than 1 dBA. In practice, CNEL and Ldn are often used interchangeably.

b. Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hospitals, schools, guest lodging, libraries, and religious institutions are most sensitive to noise intrusion and therefore have more stringent noise exposure targets than commercial or recreational uses that are not subject to impacts such as sleep disturbance. Sensitive land uses within the Planning Area are presented in Figure 4.13-1. Most residential noise-sensitive uses are located in relatively quiet areas lacking major noise sources. However, residences and other noise-sensitive receptors located along major arterial roadways, highways, and railroad lines may experience elevated noise levels.

c. Sources of Noise

The predominant source of noise in Palmdale is traffic. Other sources of noise include railroad operations, transit, and stationary operations from commercial and industrial uses, as described below. Information in the descriptions below was obtained from a variety of sources as cited throughout the discussion, including the City's 1993 General Plan, the proposed Plan, and the Background/Existing Conditions Reports.

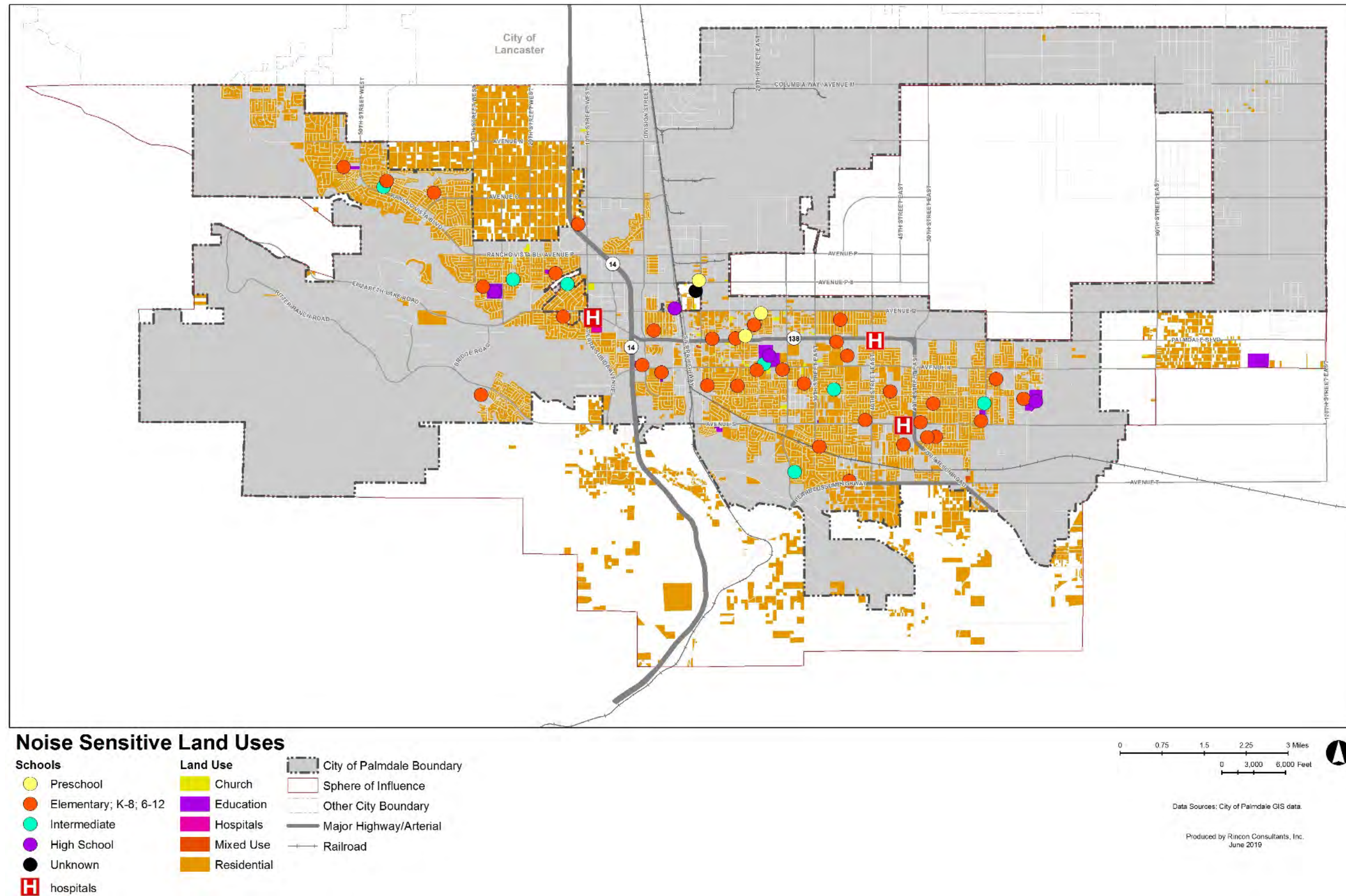
Roadways

Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to noise-sensitive uses. Roadways with the highest traffic volumes and the highest speeds produce the highest noise levels. These roadways include SR-14, SR-138, Sierra Highway and major streets such as 10th Street West, Avenue S, 47th Street East, Palmdale Boulevard, and Rancho Vista Boulevard. As shown in Figure 4.13-1, many residences are located adjacent to these roadways. These roadways run through the Planning Area and are surrounded by multiple sensitive land uses including schools, residential development, churches, and hospitals.

Transit

The City of Palmdale is served by the Antelope Valley Transit Authority (AVTA) which operates 13 local transit routes throughout the City. The highest ridership in Palmdale occurs along 10th Street West, Palmdale Boulevard, Avenue R, and Avenue S. Additionally, some of the busiest bus stop within AVTA occur within the City of Palmdale, these stops include the Antelope Valley Mall, Walmart at Avenue S/47th Street East, Avenue R/47th Street East, and the Palmdale Transportation Center. The Palmdale Transportation Center is a regional multimodal hub that offers connections between the AVTA and other commuter services such as Amtrak, the Metrolink commuter Rail Service, and Santa Clarita Transit.

Figure 4.13-1 Palmdale Noise Sensitive Land Uses



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Railroads

Rail traffic also contributes to noise. Metrolink is operated by the Southern California Regional Transit Authority (SCRRA) and serves five counties in the Los Angeles Region. Metrolink offers commuter rail service from the Antelope Valley to Santa Clarita, the San Fernando Valley, and other cities in the Los Angeles Basin. Palmdale's Metrolink commuter rail stop is at the Palmdale Transportation Center, which is located at 39000 Clock Tower Plaza Drive, in downtown Palmdale. The Amtrak Thruway bus also stops at the Palmdale Transportation Center.

Aircraft

Palmdale Regional Airport is located approximately two miles east of SR-14, north of Rancho Vista Boulevard. Surrounding land uses, which include open space, agricultural, and industrial uses, are not sensitive to noise. Palmdale Regional Airport contains Air Force Plant 42, which conducted an Air Installation Compatible Use Zone study in March 2012. Additionally, the airport does not operate commercial flights. There is currently no public airport within the Planning Area.

Commercial and Industrial Operations

Typical commercial and industrial noise sources include loading dock operations, parking lot activity, on-site equipment (including heating and air conditioning), heavy machinery, and heavy truck idling. Other stationary noise sources of concern typically include generators, pumps, air compressors, and outdoor speakers. These are often associated with trucking companies, tire shops, auto mechanic shops, metal shops, shopping centers, drive-up windows, and car washes. Noise-generating commercial uses are generally separated from noise-sensitive land uses by distance, topography, and other barriers.

Commercial and industrial operations can be substantial sources of noise, depending on the specific type of use and hours of operation. Commercial uses within the Planning Area primarily consist of retail and services, office, and auto retail. Commercial activity occurs primarily along 10th Street West, from around Avenue O-4 until south of Elizabeth Lake Road. Additional shopping centers have been established to meet the demands of Palmdale's growing population. These are located at 47th Street East and Avenue S, 25th Street East and Avenue S, 5th Street West and Palmdale Boulevard, 47th Street East and Avenue R, and other locations. Additionally, Antelope Valley Mall is located at 10th Street West and Rancho Vista Boulevard.

Industrial operations in the Planning Area primarily consist of manufacturing, defense, and aerospace. One of the largest industrial uses in the Planning Area is Plant 42. Plant 42 is a United States Air Force facility and accounts for 3.2 million square feet of industrial space. Other industrial uses include wholesale, manufacturing, and industrial business parks located along 6th Street East, along Avenue O, and within the area bounded by Avenue P/Avenue Q/Division Street/30th Street East.

d. Existing Noise Levels

To characterize the existing noise environment in Palmdale, noise levels were measured at 15 locations throughout the Planning Area in March of 2019. Measured noise levels and their respective location are shown in Figure 4.13-2 and Table 4.13-1. Noise levels are generally highest along or adjacent to major roadways and the highest noise level (76.0 dBA Leq) was measured along Avenue T at its intersection with (adjacent to) 70th Street East (Site No. 10).

Table 4.13-1 Measured Ambient Noise Levels¹

Site No.	Location	Leq
1	Fifth Street W adjacent to Manzanita Heights Park	64.7
2	Clock Tower Plaza Drive E	62.7
3	50 th Street E between Avenue L-8 and E Avenue M	70.0
4	Sierra Highway and W Avenue N	67.3
5	Callet Street adjacent to Highway 138	68.2
6	30 th Street E adjacent to Williams J. MacAdam Park	67.5
7	E Avenue S adjacent to 30 th Street E	69.2
8	E Avenue R between Hasting Street and 25 th Street E	68.9
9	Sierra Highway adjacent to E Avenue S	67.7
10	East Avenue T adjacent to 70 th Street	76.0
11	W Avenue N between 60 th Street and Maple Street	67.8
12	Palmdale Boulevard adjacent to Sierra Highway	70.0
13	W Avenue S between The Groves and Mimosa Way	63.5
14	E Avenue R-8 between Penara Street and 42 nd Street E	65.6
15	Rancho Vista Boulevard between 30 th Street W and 27 th Street W	66.8

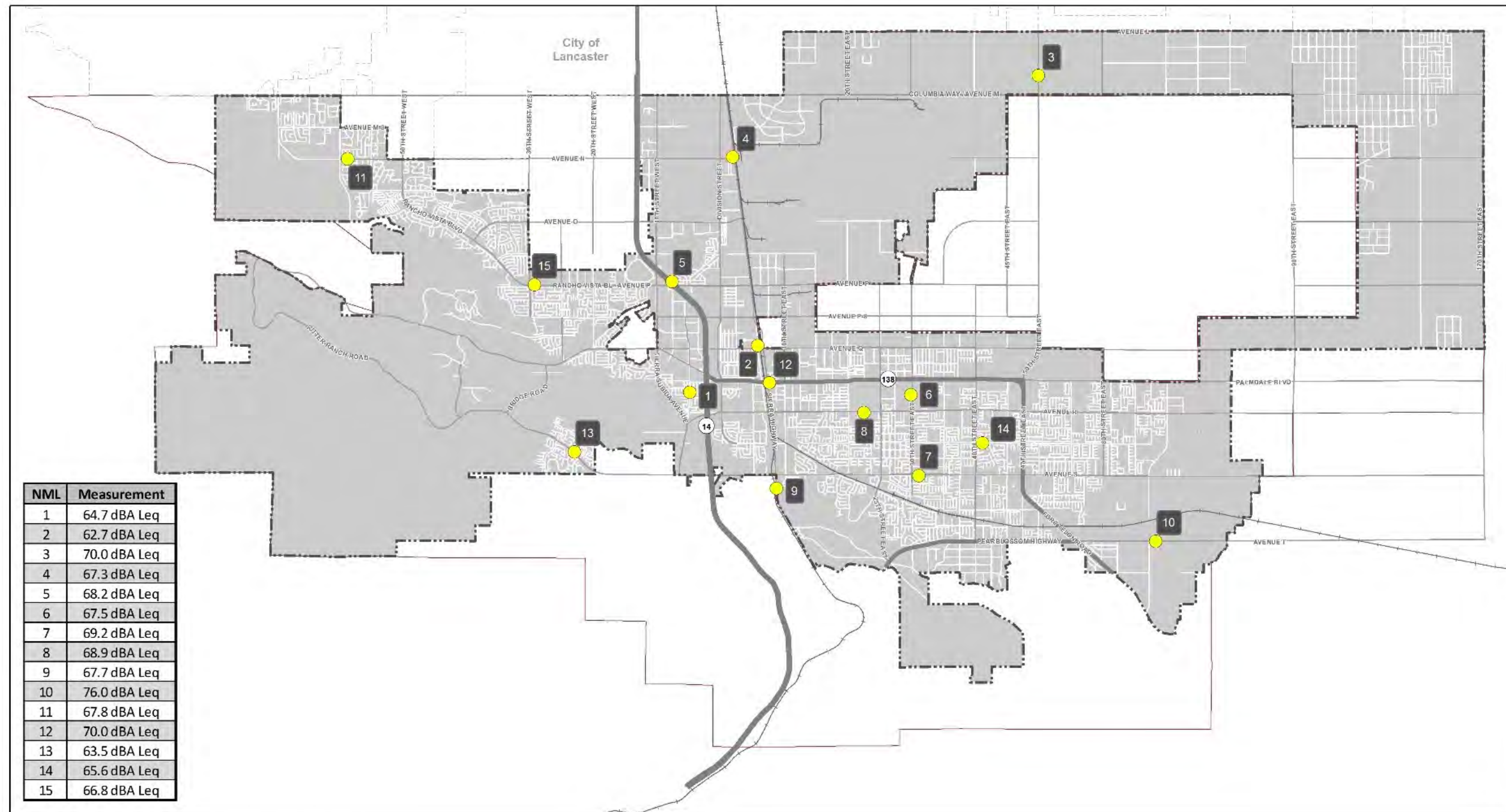
¹ See Figure 4.13-2 for noise measurement locations. Noise Measurements were taken on March 18, 2019.

Existing Noise Contours

Existing roadway noise levels were also quantified using the United States Department of Housing and Urban Development (HUD) Day/Night Noise Level (DNL) Calculator, based on ADT data obtained from a City-wide traffic study conducted by KOA Corporation in August 2017. The HUD DNL Calculator noise level estimates are based on traffic volume, vehicle mix, and vehicle speed to estimate roadway noise levels in CNEL (dBA) and generate roadway noise contours. Noise contours represent lines of equal noise exposure, just as the contour lines on a topographic map represent lines of equal elevation. The 60 dBA CNEL roadway contour was calculated using the HUD DNL Calculator for each modeled roadway and an attenuation rate of 4.5 dBA per doubling of distance was used to extrapolate the 65 dBA, 70 dBA, and 75 dBA CNEL noise contours. Roadway noise level estimates do not account for intervening barriers or topography that may shield individual receptors from the noise source. Therefore, the noise contours depicted in this section represent a reasonable, conservative worst-case estimate of noise levels and do not represent a specific estimate of sound levels at any particular location in the Planning Area. Refer to Appendix E for HUD DNL Calculator model output sheets.

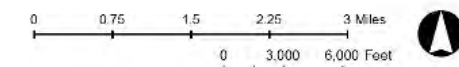
The results of this noise contour modeling are depicted in Figure 4.13-3, a map of existing traffic noise contours along the roadways that are the major source of noise in Palmdale. As shown, SR-14 carries the most traffic through the Planning Area and is consequently the greatest contributor to noise within the Planning Area. Other roadways in and around Palmdale that carry sufficient traffic to produce audible noise at a substantial distance include SR-138, Sierra Highway, Avenue M, 47th Street East, 50th Street East, East Palmdale Boulevard, East Avenue S, and East Avenue P. The noise contour map also shows that noise levels exceed 60 dBA CNEL along all modeled roadways and generally reflect the measured noise levels shown in Table 4.13-1 and Figure 4.13-2. Comparing modeled noise contours to the City’s exterior noise compatibility guidelines shown in

Figure 4.13-2 Noise Measurement Locations



Noise Measurement Locations

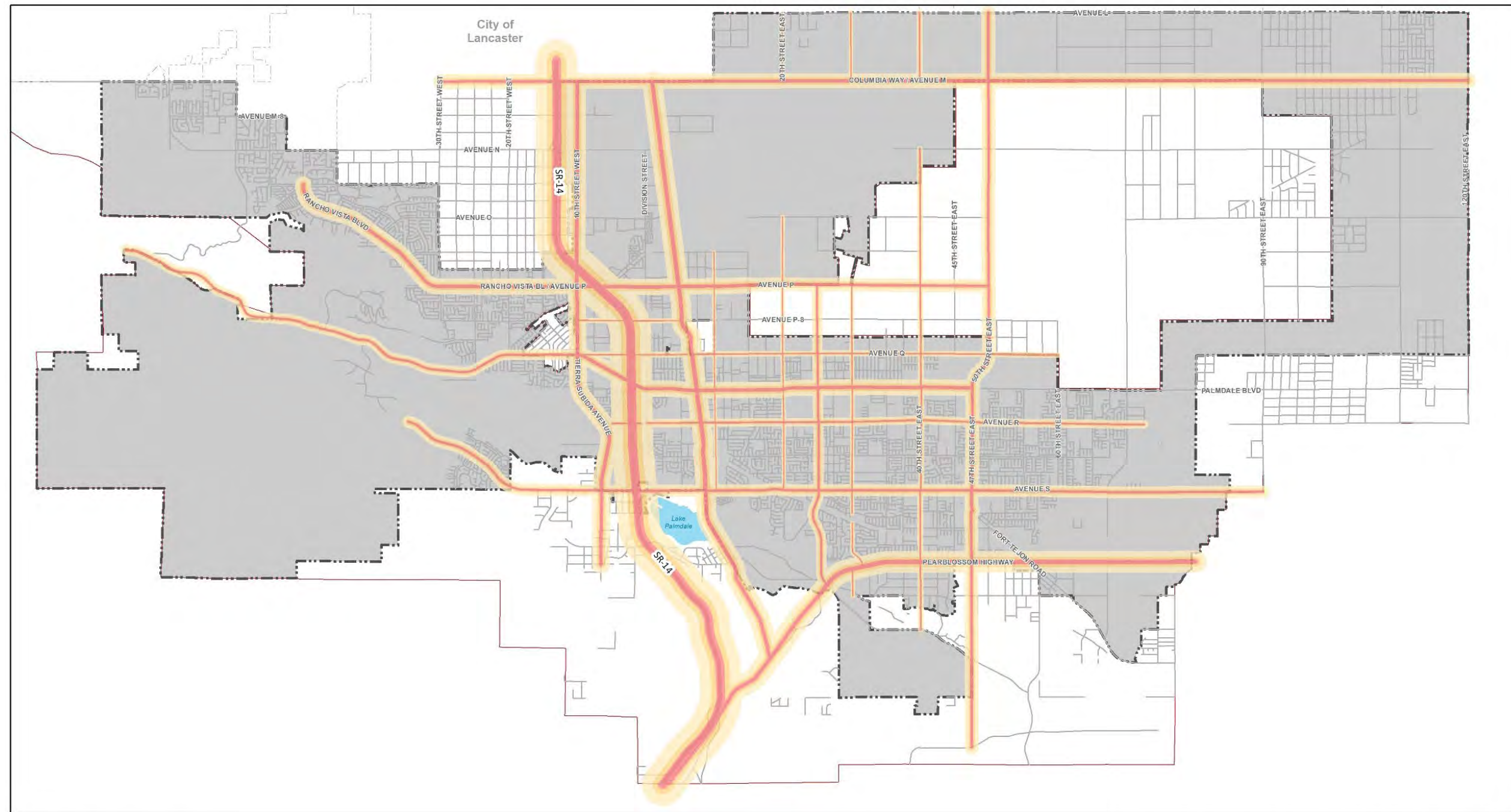
- Noise Measurement Locations
- Major Highway/Arterial
- City of Palmdale Boundary
- Railroad
- Sphere of Influence
- Other City Boundary



Data Sources: City of Palmdale GIS data.

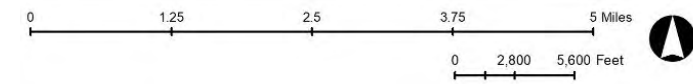
Produced by Rincon Consultants, Inc.
June 2019

Figure 4.13-3 Existing Noise Contours



Existing Noise Contours

- | | | | |
|--|---------------------------|--|-------------------------|
| | City of Palmdale Boundary | | Existing Noise Contours |
| | Sphere of Influence | | 60 dBA |
| | Other City Boundary | | 65 dBA |
| | | | 70+ dBA |



Data Sources: City of Palmdale GIS data.

Produced by Rincon Consultants, Inc.
 May 2022

Figure 4.13-6, reveals that land uses in close proximity to these roads, such as residences, may currently be exposed to noise levels in exceedance of these City guidelines.

4.13.2 Regulatory Setting

a. Federal

Federal Transit Administration Ground borne Vibration Guidelines

Sections 5 and 6 of the Transit Noise and Vibration Impact Assessment Manual, adopted by the FTA in September 2018, addresses the federal guidelines used to evaluate a project for potential vibration impacts. The vibration impact analysis is a multi-step process used for determining vibration analysis level, determining vibration impact criteria, and evaluating vibration impact. FTA guidelines state that the threshold of perception for humans is approximately 65 vibration decibels (VdB). A vibration level of 85 VdB can result in strong annoyance, and a vibration level of 100 VdB is the threshold of potential damage (FTA 2018). Construction activity can result in varying degrees of ground vibration depending on the equipment and methods employed, and older and more fragile buildings must receive special consideration. These guidelines are advisory and should be used to assess the impacts of ground borne vibrations created from transit and construction sources.

b. State

California Building Code

CCR Title 24, Building Standards Administrative Code, Part 2, and the California Building Code codify the state noise insulation standards. These noise standards apply to new construction in California to control interior noise levels as they are affected by exterior noise sources. The regulations specify that interior noise levels for residential and school land uses should not exceed 45 CNEL.

California General Plan Guidelines

The California General Plan Guidelines, published by the Governor's Office of Planning and Research, indicate acceptable, specific land use types in areas with specific noise exposure. The guidelines also offer adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. These guidelines are advisory, and local jurisdictions, including the City of Palmdale, have the responsibility to set specific noise standards based on local conditions.

c. Local

Los Angeles County Airport Land Use Commission

The Los Angeles County Airport Land Use Commission (ALUC) is a county-level agency required by the State to develop a plan for promoting compatibility between local airports and surrounding land uses. The ALUC is responsible for designating an Airport Influence Area (AIA) for every airport within its jurisdiction. An AIA is an airport planning area boundary that consists of all areas in which current or future airport-related noise, over flight, safety, and/or airspace protection

factors may significantly affect land uses or necessitate restrictions on those areas. The Palmdale Regional AIA is shown in Figure 4.13-4. Development within these areas conform with the use, density, and intensity recommendations of the within the Accident Potential Zone (APZ) and Air Installations Compatible Use Zones (AICUZ) prepared by Edwards Air Force Base for Plant 42. The AICUZ map with Compatibility Zones (CZ) and APZs are shown in Figure 4.13-5.

City of Palmdale General Plan

The State of California requires each City and County to adopt a Noise Element as part of its General Plan. Such Noise Elements must contain a Land Use/ Noise Compatibility Matrix. The objective of noise compatibility guidelines is to provide the community with a means of judging the noise environment that it deems to be generally acceptable. A recommended (but not mandatory) matrix is presented in the “Guidelines for the Preparation and Content of Noise Elements of the General Plan” (Department of Health Services 2003). The City of Palmdale Land Use/Noise Compatibility Matrix in the existing General Plan Noise Element is based on, and is similar to the California Land Use/Noise Compatibility Matrix. The matrix is used to determine whether a proposed new use would be compatible with the ambient noise environment in which it is proposed as well as whether or not the proposed new use would create noise compatibility conflicts with established uses. The compatibility table, shown in Figure 4.13-6, illustrates the ranges of community noise exposure in terms of what is “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable.”

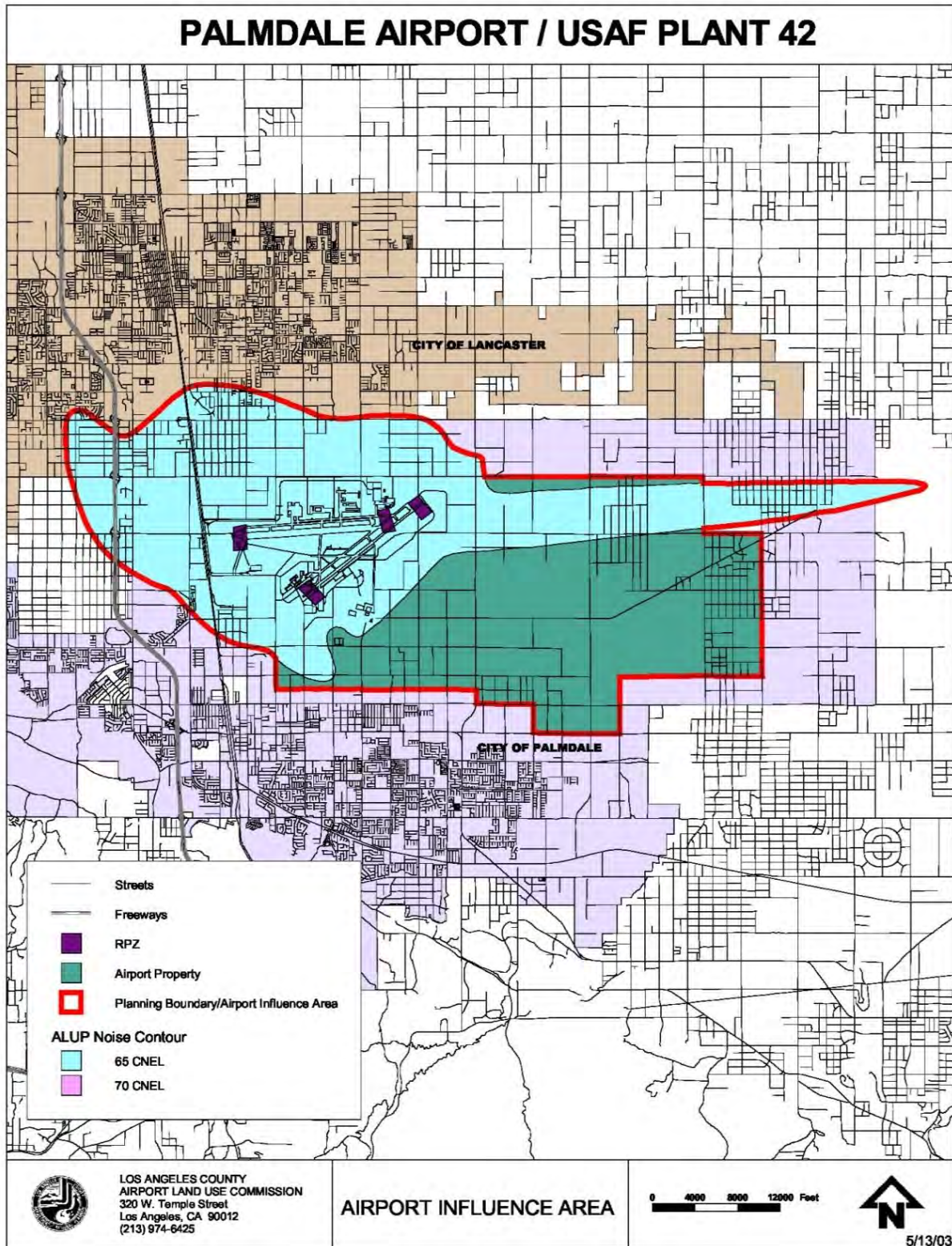
Denotation of a land use as “normally acceptable” implies that the highest noise level in that exposure level is the maximum desirable for existing or conventional construction that does not incorporate any special acoustical treatment. In general, evaluation of land use that falls into the “normally acceptable,” “conditionally acceptable,” or “normally unacceptable” noise environments should analyze other potential factors that would affect the noise environment. These include consideration of the types of noise source, the sensitivity of the noise receptor, the noise reduction likely to be provided by structures, and the degree to which the noise source may interfere with speech, sleep, or to other activities characteristic of the land use. Generally, the City’s Land Use/Noise Compatibility Matrix is used as a guide to define where placement of certain land uses is considered acceptable. The Noise Element of the City’s current General Plan also contains policies to maintain an acceptable noise environment in the City. Goals and policies from the proposed Plan relating to noise are listed in the impact analysis discussions in Section 4.13.3, *Impact Analysis*.

Palmdale Municipal Code

The City also implements and enforces noise control through its Municipal Code (PMC). PMC Chapter 9.18, *Disturbing, Excessive, Loud, or Offensive Noise*, sets both daytime and nighttime sound level limits for residential and commercial zones; prohibits any person or property owner in the City from creating any loud, unnecessary, or unusual noise which unreasonably disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

PMC Chapter 8.28, *Building Construction Hours of Operation and Noise Control* sets forth permitted hours for construction activities and property maintenances activities; prohibits any person or property owner in the City to perform any construction or repair work on any Sunday, or any other day after 8:00 p.m. or before 6:30 a.m., in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park.

Figure 4.13-4 Noise Contours map for Palmdale Airport/USAF Plant 42



Source: Los Angeles County Airport Land Use Commission 2003

Figure 4.13-5 Air Installation Compatible Use Zones Map

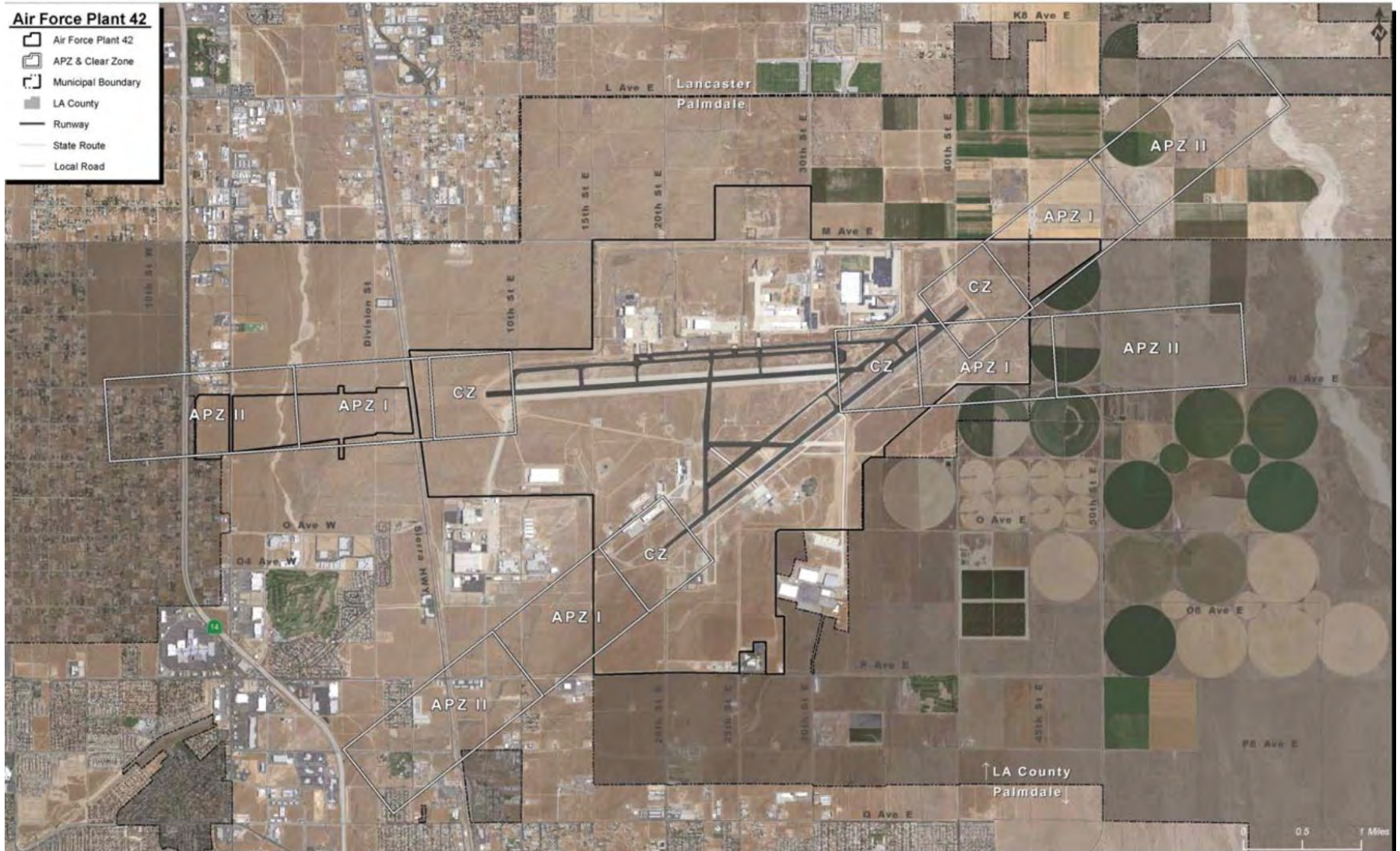
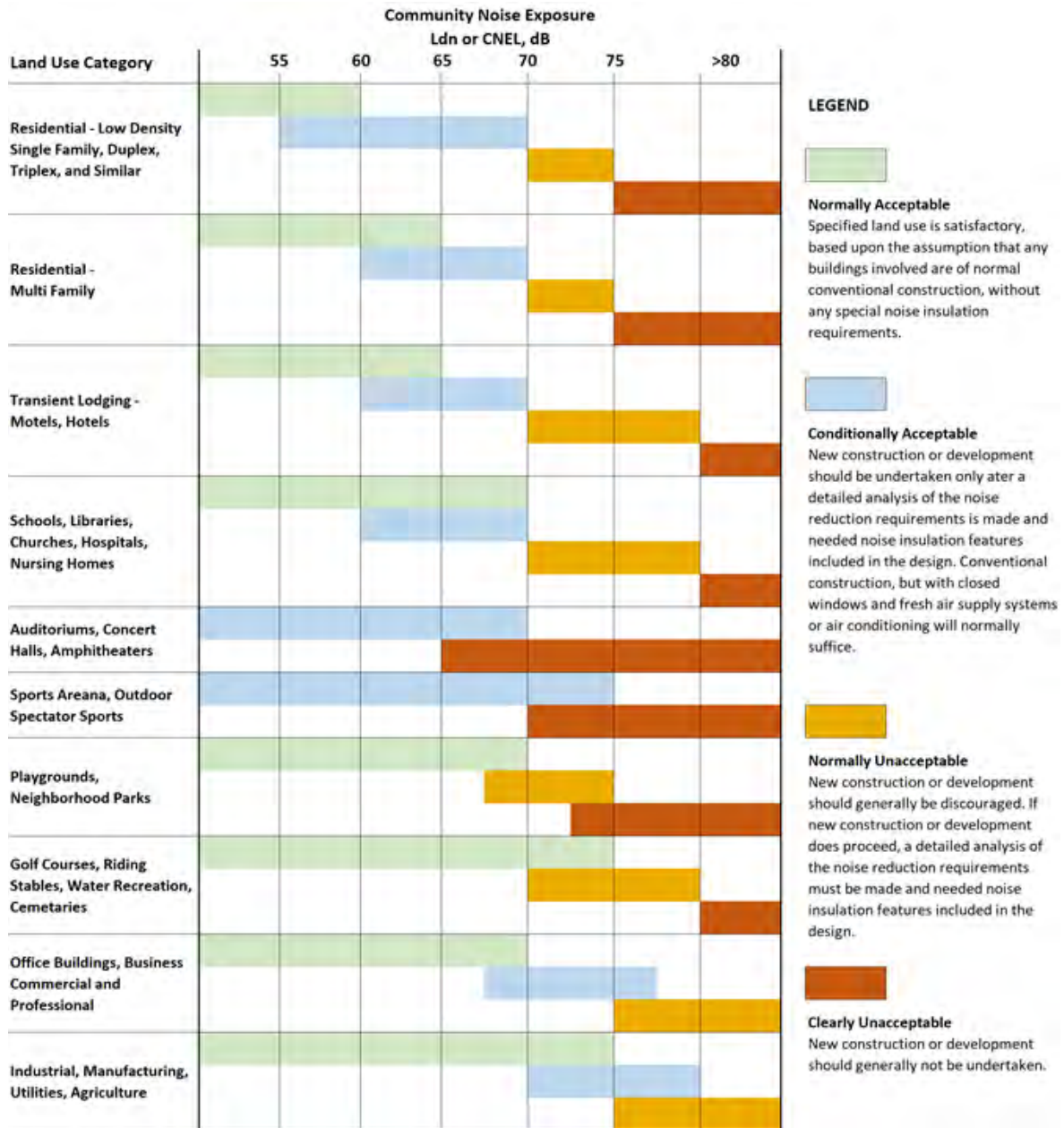


Figure 4.13-6 Palmdale General Plan Noise Level Guidance



4.13.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to noise would be potentially significant if implementation of the Plan would:

1. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
2. Result in generation of excessive groundborne vibration or groundborne noise levels
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Plan expose people residing or working in the project area to excessive noise levels

b. Project and Cumulative Impacts

Threshold 1: Would the Plan result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Impact N-1 CONSTRUCTION OF INDIVIDUAL PROJECTS CARRIED OUT UNDER THE PLAN WOULD TEMPORARILY PRODUCE HIGH NOISE LEVELS, POTENTIALLY AFFECTING ADJACENT NOISE-SENSITIVE LAND USES. OPERATION OF INDIVIDUAL PROJECTS CARRIED OUT UNDER THE PLAN WOULD CREATE MORE PERMANENTLY INCREASED NOISE LEVELS, ALSO POTENTIALLY AFFECTING ADJACENT NOISE-SENSITIVE LAND USES. COMPLIANCE WITH REQUIREMENTS OF THE PALMDALE MUNICIPAL CODE AND IMPLEMENTATION OF PLAN POLICIES WOULD, HOWEVER, REDUCE THESE IMPACTS TO A LESS THAN SIGNIFICANT LEVEL.

Noise from individual construction projects carried out under the Plan would temporarily increase ambient noise levels on and adjacent to individual construction sites, including noise from construction traffic. Since the Plan contains no specific plans or time scales for individual development projects that would be carried out under the Plan, it is not possible to determine exact noise levels, locations, or time periods for construction of such projects. However, sites adjacent to areas where future development/redevelopment is anticipated to occur would be exposed to the highest levels of construction noise for the longest duration compared to areas where such development is not expected to occur.

Construction activities, including traffic, demolition, and reconstruction, would generate noise. Table 4.13-2 illustrates typical noise levels associated with construction equipment. At a distance of 50 feet from the construction site, noise levels similar to those shown in Table 4.13-2 would be expected to occur with individual development projects. Noise would typically drop off at a rate of about 6 dBA per doubling of distance; therefore, noise levels would be about 6 dBA lower than shown in the table at 100 feet from the noise source and 12 dBA lower at a distance of 200 feet from the noise source. It is assumed that due to the relatively low-rise nature of development expected to be carried out under the Plan, construction in Palmdale would not involve the operation of pile drivers, which are sometimes used in construction of multi-story buildings with pile foundations.

Table 4.13-2 Typical Noise Levels for Construction Equipment

Equipment	Estimated Noise Levels at Nearest Sensitive Receptors (dBA Leq)		
	50 feet	100 feet	200 feet
Air Compressor	81	75	69
Backhoe	80	74	68
Concrete Mixer	85	79	73
Dozer	85	79	73
Grader	85	79	73
Jackhammer	88	82	76
Paver	89	83	77
Saw	76	70	64
Scraper	89	83	77
Truck	88	82	76

Source: FTA 2006

As shown in Table 4.13-2, noise levels from construction activity could approach 90 dBA Leq at adjacent land uses located approximately 50 feet away. Construction noise would exceed ambient noise levels and may temporarily disturb people at neighboring properties.

PMC Chapter 8.28 restricts the timing of construction activities authorized by the City to the hours of 6:30 a.m. to 8 p.m. Monday through Saturday and prohibits construction on Sundays, in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park. These restrictions would apply to projects carried out in the City under the Plan.

The following Noise Element Plan goal and policy would also reinforce the PMC requirements discussed above and help reduce construction noise impacts:

- **Goal N-2: Maintain acceptable noise environments throughout the City.**
 - **Policy N-2.2: Restrict Construction Activities.** Restrict construction activities in the vicinity of sensitive receptors during the evening, early morning, and weekends and holidays.

Traffic Noise

Development carried out under the Plan would result in approximately 22,000 new residences, leading to additional vehicle trips on area roadways. By generating new vehicle trips, new development would incrementally increase the exposure of land uses along roadways to traffic noise.

According to the Traffic Report for the Plan (Appendix D), development carried out under the Plan would result in 7,727,110 vehicle miles traveled (VMT), while existing trips in the Planning Area currently generate 8,028,726 VMT. Therefore, implementation of the 2045 General Plan would result in an approximate 12 percent decrease in VMT on area roadways.

The market share of electric vehicles, which are quieter than traditional gasoline vehicles, is anticipated to increase over time, especially in response to Executive Order B-48-18, which promotes the use of zero-emission vehicles, electric vehicle charging stations, and hydrogen refueling infrastructure. The increased use of electric vehicles would decrease traffic noise compared to anticipated levels assuming only gasoline-powered vehicles.

The following Plan goals and policies would help reduce traffic noise impacts:

- **Goal N-2: Maintain acceptable noise environments throughout the City.**
 - **Policy N-2.1: Extreme Noise Sources.** Avoid locating new extreme noise sources adjacent to noise sensitive land uses unless mitigation measures can mitigate noise impacts to the sensitive uses.
 - **Policy N-2.3: Maintain Acceptable Noise Environments.** Utilize any or all the following measures to maintain acceptable noise environments throughout the city:
 - Control of noise at its source, including noise barriers and other muffling devices built into the noise source.
 - Provision of buffer areas and/or wide setbacks between the noise source and other development.
 - Reduction of densities, where practical, adjacent to the noise source (freeway, airport, railroad).
 - Use of sound insulation, blank walls, double paned windows and other design or architectural techniques to reduce interior noise levels.
 - Designation of appropriate land uses adjacent to known noise sources.
 - **Policy N-2.4: Acoustical Analysis for Noise Sensitive Land Uses.** Where deemed appropriate based upon available information, require acoustical analysis and appropriate mitigation for noise-sensitive land uses proposed in areas that may be adversely impacted by significant intermittent noise sources. Such noise sources may include but not be limited to railroads, racetracks, stadiums, aircraft overflights and similar uses.
 - **Policy N-2.5: High Speed Rail and Palmdale Airport.** As necessary, participate in future planning for the High-Speed Rail and the Palmdale Airport expansion to ensure that neither facility creates noise conditions that adversely affect residents, businesses, or visitors.
- **Goal N-4 Minimize adverse noise impacts associated with transportation.**
 - **Policy N-4.1: Coordinate with Caltrans.** Coordinate with Caltrans to implement noise mitigation measures, such as sound barrier walls, in the design, improvement, or expansion of freeways and major roadways.
 - **Policy N-4.2: Assess Noise Environment in Residential Areas.** Regularly assess the noise environment in residential areas related to heavy vehicle traffic to determine if adjustments should be made to transportation routes.
 - **Policy N-4.3: Insulate Sensitive Receivers.** Implement traffic calming and traffic diversion measures across the City to insulate sensitive land uses from freeway and roadway noise.
 - **Policy N-4.4: Protect Disadvantaged Community Members.** Prohibit new high noise generating uses in disadvantaged communities, as feasible.

Future Traffic Noise Contours

Future noise contour modeling is depicted in Figure 4.13-7, a map of traffic noise contours that is predicted to result from future development carried out under the Plan. As shown, SR-14 is projected to carry the most traffic throughout the Planning Area and contribute the most noise within the Planning Area. Other roadways in and around Palmdale, including SR-138, Sierra Highway, Avenue M, 50th Street East, East Palmdale Boulevard, East Avenue S, and East Avenue P,

are anticipated to carry a sufficient amount of traffic to produce noise at a substantial distance. The future noise contour map also depicts noise levels exceeding 60 Dba CNEL along all modeled roadways. A comparison of the existing and future noise contour maps shows noticeable traffic noise increases along SR-14 and Sierra Highway, although traffic noise increases along other modeled roadways may occur that are not visible at this scale. Comparing modeled noise contours to the City's exterior noise compatibility guidelines shown in Figure 4.13-6 reveals that land uses in close proximity to these roads, such as residences, may in the future be exposed to noise levels in exceedance of these City guidelines, although this exposure would not substantially increase compared to existing conditions as shown in Figure 4.13-3. Additionally, railway noise from the California High Speed Rail (HSR) project is discussed at the end of this section under *Cumulative Impacts*.

Stationary Noise

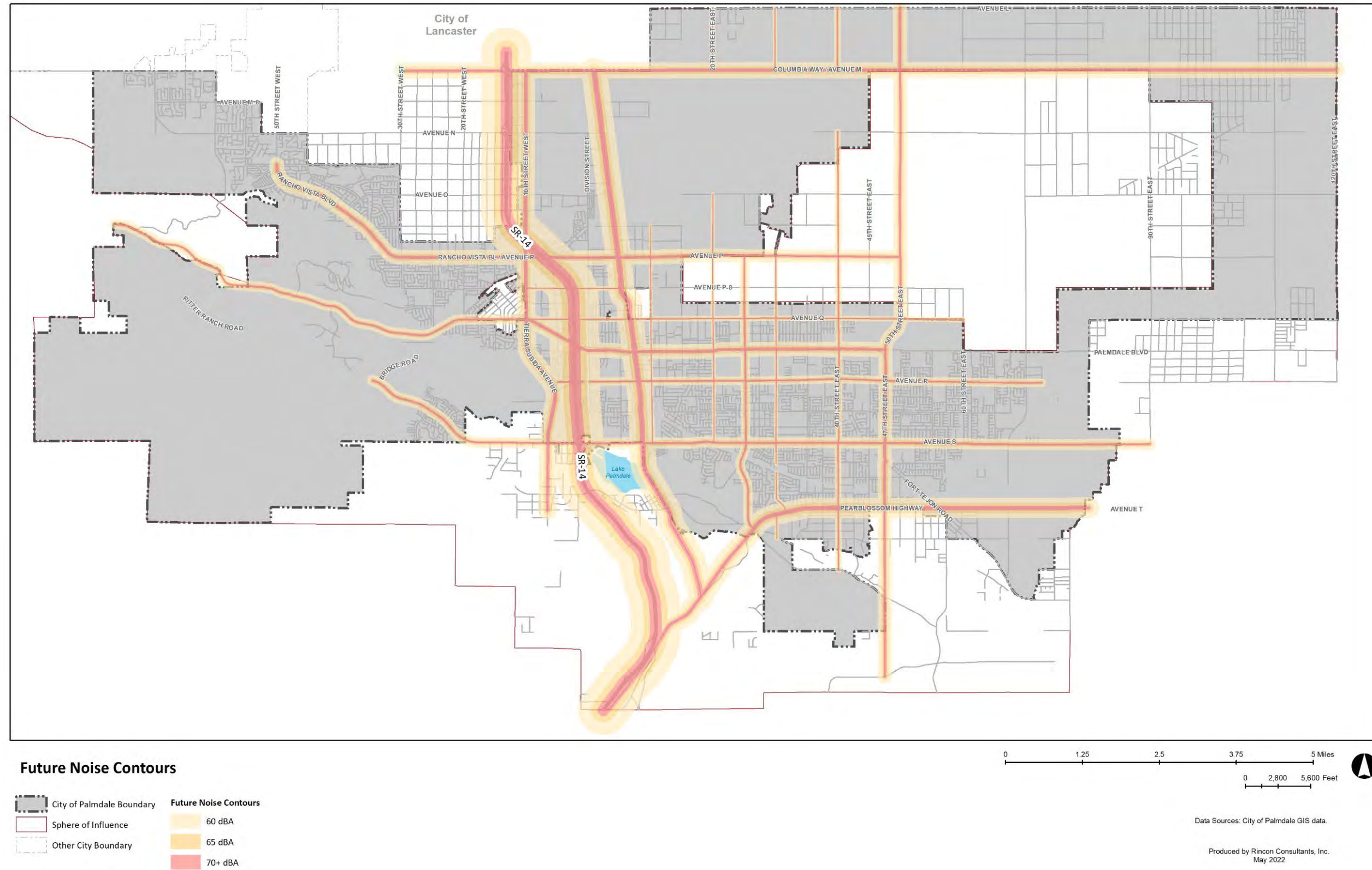
Development under the Plan would introduce sources of operational HVAC noise and other onsite equipment noise to the existing environment. Noise levels generated by onsite stationary sources, including HVAC units, would vary depending on the location of the source, shielding, and distance to the nearest receptors. Buildings developed under the Plan are expected to have an exterior-to-interior noise reduction of 12 dB with windows open and 24 dB with windows closed, assuming typical warm climate construction (USEPA 1978). Additionally, new development under the Plan would be required to comply with Plan goals and policies listed below relating to stationary noise, such as Policy NE 1-3 listed below. Therefore, a substantial noise increase would not occur, and stationary noise impacts would be less than significant.

Implementation of the PMC and the following Plan goals and policies would help reduce noise impacts.

- **Goal N-2: Maintain acceptable noise environments throughout the City.**
 - **Policy N-2.1: Extreme Noise Sources.** Avoid locating new extreme noise sources adjacent to noise sensitive land uses unless mitigation measures can mitigate noise impacts to the sensitive uses.
 - **Policy N-2.3: Maintain Acceptable Noise Environments.** Utilize any or all the following measures to maintain acceptable noise environments throughout the city:
 - Control of noise at its source, including noise barriers and other muffling devices built into the noise source.
 - Provision of buffer areas and/or wide setbacks between the noise source and other development.
 - Reduction of densities, where practical, adjacent to the noise source (freeway, airport, railroad).
 - Use of sound insulation, blank walls, double paned windows and other design or architectural techniques to reduce interior noise levels.
 - Designation of appropriate land uses adjacent to known noise sources.
 - **Policy N-2.4: Acoustical Analysis for Noise Sensitive Land Uses.** Where deemed appropriate based upon available information, require acoustical analysis and appropriate mitigation for noise-sensitive land uses proposed in areas that may be adversely impacted by significant intermittent noise sources. Such noise sources may include but not be limited to railroads, racetracks, stadiums, aircraft overflights and similar uses.

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Figure 4.13-7 Future Noise Contours



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Construction and operation of projects carried out under the Plan could produce both temporary and permanent increases in noise levels, which could potentially affect adjacent sensitive land uses. However, projects carried out under the Plan would be required to comply with requirements of the PMC and Plan goals and polices that would reduce impacts to noise to a less than significant level. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would the Plan result in generation of excessive groundborne vibration or groundborne noise levels?

Impact N-2 CONSTRUCTION OF INDIVIDUAL PROJECTS CARRIED OUT UNDER THE PLAN COULD TEMPORARILY GENERATE GROUNDBORNE VIBRATION, POTENTIALLY AFFECTING ADJACENT SENSITIVE LAND USES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Individual construction projects carried out under the Plan could intermittently generate strong vibration on and adjacent to construction sites. Typical construction equipment that produces vibration includes vibratory rollers for paving, caisson drills, bulldozers, loaded trucks, and jackhammers. Table 4.13-3 shows estimated vibration levels from the use of typical construction equipment, based on reference levels provided by the FTA at a distance of 25 feet from the source.

Table 4.13-3 Vibration Levels for Typical Construction Equipment

Equipment	Estimated Noise Levels at Nearest Sensitive Receptors (dBA Leq)			
	25 feet	50 feet	100 feet	200 feet
Caisson Drilling	87	80	74	67
Jackhammer	79	72	66	59
Large Bulldozer	87	80	74	67
Loaded Trucks	86	79	73	66
Small Bulldozer	58	51	45	38
Vibratory Roller	94	87	81	74

Source: FTA 2006

Based on Table 4.13-3, noise-sensitive receptors could experience the strongest vibration during the use of vibratory rollers, caisson drills, and large bulldozers at neighboring construction sites. Vibration levels from vibratory rollers could approach 94 VdB at a distance of 25 feet from the source and 87 VdB at 50 feet.

Compliance with PMC Chapter 8.28 would restrict the timing of construction activities authorized by a City permit to the hours of 6:30 a.m. to 8 p.m. Monday through Saturday and prohibits construction on Sundays, in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park. This requirement for new development would protect residents from exposure to vibration during normal sleeping hours. Therefore, vibration would not exceed the FTA’s thresholds of 72 VdB for residences and buildings where people normally sleep. However, vibration levels during daytime construction activity could potentially exceed the FTA threshold of

75 VdB for institutional land uses like schools, churches, or offices with primary daytime use. The use of vibratory rollers also could generate vibration levels that equal or exceed the FTA's thresholds of 90 VdB for buildings extremely susceptible to vibration damage and 94 VdB for non-engineered timber and masonry buildings. Additionally, railway vibration from the California High Speed Rail (HSR) project is discussed at the end of this section under *Cumulative Impacts*. Therefore, impacts related to vibration would be potentially significant.

Implementation of the Plan goals and policies listed in Impact N-1 would help reduce the Plan's potential vibration impacts, but Mitigation Measure N-1 is also required to more specifically address potential vibration impacts and reduce them to a less than significant level.

Mitigation Measures

N-1 Construction Vibration Control Measures

The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval, as applicable, for construction projects carried out under the Plan within 50 feet of fragile buildings as defined in this mitigation measure:

1. Avoid the use of vibratory rollers within 50 feet of fragile buildings, which are buildings that are susceptible to damage from vibration as determined by the Palmdale Planning Department.
2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration (FTA 2006).
3. Notify neighbors of scheduled construction activities that would generate vibration.

Significance After Mitigation

Avoiding the use of vibratory rollers within 50 feet of fragile buildings would prevent potential structural damage from vibration. In addition, appropriate scheduling of construction activities and notification of neighbors would minimize disturbance of people from use of vibration-generating equipment. Compliance with the vibration control and notification measures in Mitigation Measure N-1 would reduce impacts to a less than significant level.

<p>Threshold 3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Plan expose people residing or working in the project area to excessive noise levels?</p>
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Impact N-3 COMPLIANCE WITH PLAN POLICIES WOULD REDUCE IMPACTS RELATED TO AIRPORT NOISE TO LESS THAN SIGNIFICANT.

The City of Palmdale currently does not have a public airport. Palmdale Regional Airport/USAF Plant 42 is a private airport with two runways serving commercial uses and the USAF and is located approximately two miles east of SR-14, north of Rancho Vista Boulevard. Figure 4.13-4 show the noise contours map for Palmdale Airport/USAF Plant 42 prepared by the Los Angeles County ALUC, while Figure 4.13-5 shows CZs and APZs for the AICUZ. As noted in the Plan, noise generated by the airport is not substantial because surrounding land uses are not sensitive to

noise. Further, the Plan does not involve any land use changes that would change this. Additionally, the airport does not operate commercial flights.

Additionally, compliance with the following Plan goal and policies, in addition to goals and policies already listed above, would reduce airport-related noise impacts.

- **Goal N-3: Promote noise compatible land uses within the 65 dBA CNEL contour and the Frequent Overflight Area of Air Force Plant 42.**
 - **Policy N-3.1: Frequent Overflight Area.** Designate and permit employment flex, industrial, aerospace industrial, and similar uses within the 65 dBA CNEL contour and the Frequent Overflight Area.
 - **Policy N-3.2: Areas Within 65 dBA CNEL.** Restrict noise sensitive land uses (such as residential uses, religious institutions, schools, assisted living facilities, or similar uses) within areas designated within both the 65 dBA CNEL contour and the Frequent Overflight Area, unless mitigation measures prevent adverse health impacts from high noise emissions.
 - **Policy N-3.3: Areas Outside 65 dBA CNEL.** In areas outside of the 65 dBA CNEL contours but within the Frequent Overflight Area, encourage land uses that are not noise-sensitive, to the extent feasible.
 - **Policy N-3.4: Require Disclosure Statement.** Through the development review process, require a disclosure statement indicating that the property is subject to frequent overflight and aircraft noise upon sale of property within the Accident Potential Zone (APZ) and Air Installations Compatible Use Zones (AICUZ).
 - **Policy N-3.5: Aviation Easement.** Through conditions of approval, require that any owner of property within the 65 dBA CNEL noise contour or the low altitude overflight area of Plant 42 seeking a land use action from the City to provide an aviation easement to the Los Angeles Department of Airports, the U.S. Air Force, and the City of Palmdale.

Compliance with these Plan policies would reduce airport-related noise impacts to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within the Planning Area. Construction noise and vibration are localized and rapidly attenuate within an urban environment, where most development carried out under the Plan is intended to occur. Although multiple development projects may be under construction at the same time, these projects would not typically be in sufficiently close proximity to each other such that noise and vibration from construction activities would significantly impact the same sensitive receivers and structures at the same time. Noise and vibration impacts to receivers that are not in the immediate vicinity of an individual project would be reduced due to existing intervening structures that would block the line of sight, distance attenuation, and would depend on sensitivity to noise for the affected land use. As analyzed in this EIR, compliance with requirements of the PMC and implementation of Plan policies would reduce construction noise impacts to a less than significant level. Therefore, noise impacts would not be cumulatively

considerable. Vibration impacts would be less than significant with mitigation and would not be cumulatively considerable.

Cumulative projects in the surrounding area would include similar operational noise sources as development expected under the Plan (e.g., HVAC, parking activities). Like construction noise and vibration, operational noise and vibration from these sources is localized and rapidly attenuates within an urbanized setting due to the effects of intervening structures and topography that block the line of sight and other noise sources closer to receivers that obscure project-related noise. It is not anticipated that multiple individual projects developed simultaneously under the Plan would be in sufficiently close proximity to each other such that operational noise and vibration would significantly impact the same sensitive receivers.

The HSR project has the potential to contribute to cumulative noise and vibration impacts. While this project may not be constructed or operational in the Planning Area by 2045, HSR is not part of the proposed Plan, and HSR impacts are not Plan impacts, the potential noise and vibration impacts of HSR, as analyzed in the Bakersfield to Palmdale Project Section Final EIR/EIS (EIR/EIS) are described below under *High Speed Rail Noise* (California High-Speed Rail Authority 2021). As discussed below under the heading of *High Speed Rail Noise*, the EIR/EIS concluded that operational noise impacts of HSR would remain significant and unavoidable even after mitigation. As discussed below under the heading of *High Speed Rail Vibration*, the EIR/EIS concluded that no vibration impacts from construction or operation of HSR would occur. The Plan would not substantially contribute to these impacts because of their localized nature and unique noise and vibration characteristics compared to other operational noise and vibration sources with which they could combine.

For all the reasons discussed above, the Plan would not make a substantial contribution to any cumulatively considerable noise or vibration impacts.

High Speed Rail Noise

California High Speed Rail (HSR) is a publicly funded high speed rail system that will connect San Francisco to Los Angeles. The Bakersfield to Palmdale segment of HSR will traverse the Planning Area. A Bakersfield to Palmdale Project Section Final EIR/EIS (EIR/EIS) was adopted in May 2021 that evaluated the impacts of HSR in relation to noise (California High-Speed Rail Authority 2021). While the proposed Plan does not include the construction of HSR and HSR may not be constructed or operational in the Planning Area by 2045, but once it is, there will be noise impacts in the Planning Area. Therefore, noise impacts previously analyzed in the EIR/EIS are summarized below.

Construction

The May 2021 EIR/EIS found that while operation of construction equipment and the transport of construction equipment and materials would incrementally raise noise levels on local roads leading to the HSR station site, the projected construction traffic volume would be minimal when compared to existing traffic volumes on affected local streets, and the change in noise would not be audible.

The EIR/EIS assumed that a small set of construction equipment would operate simultaneously during construction as a reasonable worst-case scenario. Under this assumption, residences and schools within a distance of 119 to 376 feet from the construction boundary of the rail line would be exposed to noise levels greater than the FRA construction noise criterion during daytime and

nighttime hours. Thus, construction-related impacts of HSR would be potentially significant due to construction noise levels exceeding the FRA construction noise level criteria during daytime and nighttime hours. However, impacts were found to be less than significant with the implementation of Mitigation Measure F-B LGA N&V-MM#1 and N&V-MM#1 presented in the EIR/EIS. Mitigation Measure F-B LGA N&V-MM#1, Construction Noise Mitigation Measures, would require a contractor to monitor construction noise to verify compliance with the noise limits in Table 3.4-1 of the EIR/EIS. The contractor would be given the flexibility to meet the FRA construction noise limits in the most efficient and cost-effective manner. Mitigation Measure N&V-MM#1, Construction Noise Mitigation Measures, would require the contractor to monitor construction noise to verify compliance with the noise limits shown in Table 3.4-7 of the EIR/EIS. Additionally, prior to construction (any ground disturbing activities), the contractor would be required to prepare a noise-monitoring program for Authority approval. In addition, the noise-monitoring program would be required to describe the actions required of the contractor to meet required noise limits.

Operation

As part of the May 2021 EIR/EIS a preliminary noise impact analysis was conducted for the long-term and short-term measurement locations to show potential noise impacts within the vicinity of HSR. The measured existing noise levels and the HSR noise levels were used to determine the total noise level and the HSR-related noise level increase at each measurement location. Various parameters were used to determine the operational noise impacts of the HSR including track elevation, receiver base elevation, land use, land use category, existing noise level, HSR noise level unmitigated, total noise level unmitigated, noise level increase, and FRA impact. The EIR/EIS concluded that the level of impact to sensitive noise receivers from operation of the HSR would be severe to moderate. Noise impacts from operation of the HSR to sensitive receivers would be significant due to the increase in noise levels over the existing conditions that fall into the severe category in the FRA criteria. Mitigation Measures F-B LGA N&V-MM#3 through F-B LGA N&V-MM#6 and N&V-MM#3 through N&V-MM#6 in the EIR/EIS would be implemented, but operational impacts of the HSR would remain significant and unavoidable.

Metrolink

The EIR/EIS analyzed design refinements to modify the Palmdale Boulevard grade separation to an undercrossing and raise the profile of the existing Union Pacific Railroad (UPRR) and Metrolink tracks. It was determined that the increase in noise associated with elevating the UPRR and Metrolink tracks would be nominal and there would be a reduction in noise due to lowering the profile of Palmdale Boulevard as it passes below all three rail lines. The changes related to noise resulting from these modifications would have no effect on the impact conclusions presented in the HSR EIR/EIS Plan Area. The analysis of traffic noise impacts associated with the Palmdale Boulevard grade separation design refinements has been updated and no new impacts were identified.

Freight Rail

The EIR/EIS Bakersfield to Palmdale Build Alternatives would replace existing railroad at-grade crossings with grade separations and/or roadway closures. Because this change would eliminate railroad horn warnings to oncoming vehicular and pedestrian traffic, the modeling for the HSR trains did not include the horn warnings. However, noise modeling in some cases was not done to analyze the effects of changes to the at-grade crossings on the existing noise levels from the

existing freight and passenger trains. Therefore, there are no changes to the noise levels from the freight trains at locations where they presently blow their horns.

High Speed Rail Vibration

Construction

The EIR/EIS used the damage criteria to evaluate potential vibration impacts from construction of HSR. Construction equipment may increase ground-borne vibration levels near sensitive receivers. No residential or fragile structures are within 79 feet of the construction boundary of the proposed Palmdale Station. Therefore, construction of the proposed Palmdale Station would not result in annoyance or damage to residential or fragile structures, and no vibration impacts from construction-related activities would occur. Additionally, as all schools within the HSR vicinity would be more than 63 feet from the construction boundary of the proposed Palmdale Station, construction-related vibration levels would not result in annoyance or damage to school structures. Therefore, the EIR/EIS concluded that no vibration impacts from construction-related activities would occur.

Operation

The EIR/EIS used the FRA Detailed Vibration Assessment to determine potential vibration impacts on vibration-sensitive land uses in the project vicinity from long-term operation of the HSR. The FRA Detailed Vibration Assessment is utilized in order to get an in-depth analysis. EIR/EIS conducted vibration propagation measurements at 10 locations. HSR vibration levels would range between 45.5 and 71.1 VdB at the nearest vibration-sensitive receiver. These vibration levels are below the FRA impact criteria of 72 VdB for residential land uses and 75 VdB for institutional land uses. Based on the project vibration levels calculated from the transfer of mobility measurements, no residential or institutional land uses adjacent to the HSR tracks would experience a vibration impact. Therefore, the EIR/EIS concluded that no vibration impacts from operation-related activities would occur.

4.14 Population and Housing

This section evaluates the potential impacts of the proposed project in terms of population and housing. Data used to prepare this section were taken from the United States Bureau of the Census, the California Department of Finance (DOF), and the Southern California Association of Governments (SCAG).

4.14.1 Environmental Setting

Population, housing, and employment data are available on a city, county, regional, and state level. This EIR uses data collected and provided at the city and county level to focus the analysis specifically on the Planning Area.

a. Population, Housing, and Employment

Table 4.14-1 shows the 2022 estimates of population and housing units for Palmdale and Los Angeles County. Palmdale’s current (2022) estimated population is 167,398, a -0.9 percent decrease from its 2021 population of 168,895 (California Department of Finance [DOF] 2022). The City’s population constitutes approximately 1.7 percent of the countywide population of 9,861,224; and the City’s 46,462 households constitute approximately 1.3 percent of the County’s 3,542,800 total households. The average number of persons per household in the City in 2022 is estimated at 3.44, which is about 21 percent higher than the countywide average of 2.80 persons per household in 2022.

Table 4.14-1 2022 Population, Households, and Housing Unit Estimates

	City of Palmdale	Los Angeles County
Population	167,398	10,044,458
Housing Units (Total)	46,462	3,542,800
Housing Units (Occupied) ¹	43,404	3,316,795
Persons/Household Ratio ²	3.54	2.92

¹ Estimated by applying a derived civilian vacancy rate to the estimated civilian housing units. Vacancy rates are based on 2010 Census benchmark data, adjusted to incorporate the directional changes described by the latest available American Community Survey (ACS) data.

²This is a ratio of persons (household) to an occupied housing unit.

Source: California DOF 2022

Table 4.14-2 shows the City and County employment, housing, and population estimates and forecasts from the Southern California Association of Governments (SCAG) SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Demographics & Growth Forecast. SCAG projects that the city’s population will increase by 48,400 persons (30 percent) between 2016 and 2045, to 207,000 residents in 2045. SCAG projects that the number of households in the City will increase by 18,000 between 2016 and 2045, to 61,800 households in 2045. SCAG estimates that there were 0.8 jobs per household in the City in 2016 and there will be 0.7 jobs per household in 2045. This 2045 ratio is about 12.5 percent lower than the 2016 ratio. The fact that Palmdale’s jobs per household ratio is projected to decrease, and remain below a 1 to 1 ratio, suggests that Palmdale is and will remain a “jobs poor” community in which more workers commute from the City to other communities for their jobs than residents commute into points

inside the City for their jobs. Many residents who work outside the community have long commutes into areas such as the Los Angeles metropolitan area.

Table 4.14-2 SCAG Population, Housing, and Jobs Forecasts

City of Palmdale	2016	2030	2035	2045
Population	158,600	—	—	207,000
Households	43,800	—	—	61,800
Employment	36,700	—	—	45,900
Jobs/Housing Ratio	0.8	—	—	0.7
Los Angeles County	2016	2030	2035	2045
Population	10,110,000	10,900,000	11,174,000	11,674,000
Housing Units	3,319,000	3,749,000	3,885,000	4,119,000
Employment	4,743,000	5,060,000	5,172,000	5,382,000
Jobs/Housing Ratio	1.4	1.4	1.3	1.3

Source: SCAG 2020b

4.14.2 Regulatory Setting

This section summarizes regulations that pertain to population, housing, and employment.

a. State

State Housing Element Statutes

State housing element statutes (Government Code Sections 65580-65589.9), also known as Housing Element law, mandate that local governments adequately plan to meet the existing and projected housing needs of all economic segments of the community. Housing Element law recognizes that in order for the private market to adequately address housing needs and demand, local governments must adopt land use plans and regulatory systems that provide opportunities for, and do not unduly constrain, housing development. As a result, state housing policy rests largely upon the effective implementation of local general plans and in particular, housing elements.

b. Regional/Local

Regional Housing Needs Assessment (RHNA)

California’s Housing Element law requires that each county and city develop local housing programs to meet their “fair share” of existing and future housing growth needs for all income groups. SCAG is tasked with distributing the total state-projected housing need for the SCAG Southern California Region among SCAG’s 197 cities and six counties by four income categories (extremely low and very low, low, moderate, and above moderate). This Regional Housing Needs Assessment (RHNA) allocation represents the minimum number of housing units by income level that each community is required to plan for through a combination of 1) zoning adequate sites at suitable densities that foster affordability and 2) housing programs to support retention, rehabilitation, and production of lower-income units with a reasonable degree of entitlement certainty.

The Housing Element is one of the required elements of the General Plan. The purpose of the Housing Element is to identify and analyze existing and projected housing needs in order to

preserve, improve, and develop housing for all economic segments of the community, consistent with the RHNA regulations described above. The City adopted its current Housing Element in 2021 as part of the 2021-2029 planning cycle. This Housing Element was submitted to the HCD for review and comment, and the City received certification of the Housing Element from HCD in 2022. Palmdale 2045 (the Plan) updates the Housing Element based on the 6th Cycle State requirements for the 2021-2029 planning horizon. The Plan thus includes revisions that bring the Housing Element in line with current legislation and that determine how the 6th Cycle RHNA, as determined by SCAG, is being addressed. Palmdale’s 2021-2029 6th Cycle RHNA is shown in Table 4.14-3.

Table 4.14-3 Regional Housing Needs Assessment Allocation 2021-2029

Income Group	Palmdale Unit Needs	Percent of Total Units
Very Low	1,777	26.8
Low	935	14.0
Moderate	1,004	15.1
Above Moderate	2,924	44.0
Total	6,640	100.0

Source: City of Palmdale 2021

4.14.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to population and housing would be potentially significant if implementation of the Plan would:

1. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); and/or
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

For purposes of analysis, “substantial” population growth is defined as growth exceeding the current SCAG population forecasts for the city. “Substantial” displacement would occur if allowed land uses would displace more residences than would be accommodated through growth facilitated by the Plan.

Changes to the population due to the normal operation of the housing market are speculative and not within the scope of this analysis. Both Plan-enabled and market-driven housing development and Plan implementation may change some population characteristics of a community. However, unless population characteristic changes lead to physical changes in the environment, population characteristic changes themselves do not constitute significant environmental effects.

b. Project and Cumulative Impacts

Threshold 1: Would the Plan induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Impact PH-1 IMPLEMENTATION OF THE PLAN WOULD ACCOMMODATE MORE GROWTH THAN ENVISIONED IN SCAG'S LATEST REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY. HOWEVER, POLICIES AND ACTIONS INCLUDED IN THE PLAN WOULD ADEQUATELY ADDRESS THE PROJECTED POPULATION GROWTH. THUS THE PLAN IS DESIGNED FOR PLANNED AND ORDERLY GROWTH WHICH IMPROVES THE BALANCE OF JOBS AND HOUSING. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

SCAG's Regional Comprehensive Plan (RCP) and Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) serve as a framework for addressing problems and creating a path to correct issues on a regional level through 2045. The RCP is broken up into nine chapters that include key areas where resource management is necessary due to the urban growth the region experiences. Population projections are made through the RTP/SCS and are the basis for growth for the RCP.

As explained in Section 2.3.5, *Residential and Employment Growth*, of this EIR, reasonably foreseeable development under the Plan is projected to result in approximately 22,000 new homes and 26,391 new jobs, which would move the city closer to a 1 to 1 jobs/housing ratio. Based on Palmdale's estimated average household size of 3.44 persons (DOF 2022), this would lead to an increase of approximately 75,756 residents in the city. Adding the 75,756 new residents cited above to the City's 2022 population of 167,398, future residential growth carried out under the proposed project is predicted to increase the City's total population to 243,154, which is above SCAG's 2045 population forecasts of 207,000 from the 2016-2040 RTP/SCS (SCAG 2016). The addition of approximately 75,756 residents constitutes a 45% population increase between 2022 and 2045. Therefore, the Plan would accommodate substantial population growth in the area. The following proposed General Plan goals and policies, however, address potential impacts from this population growth:

ECONOMIC DEVELOPMENT

- **Goal ED-2: Attract diverse and high-quality job options that contribute to the City's economic growth by diversifying the economic base.**
 - **Policy ED-2.1: Attract high growth industries.** Target economic activities from high growth industries, including film, media and entertainment production, and clean technologies, to diversify Palmdale's economic base.
 - **Policy ED-2.2: Smart City technology.** Maintain and enhance smart city technology in Palmdale to support local businesses and growth of telecommuting.
 - **Policy ED-2.3: Foreign Trade Zone.** Position the existing Foreign Trade Zone designations to attract export-oriented employers.

- **Goal ED-5: Diversify housing options for residents at different stages of life and ability, to continue making Palmdale an affordable place to live.**
 - **Policy ED-5.1: Affordable housing preservation.** Encourage and preserve affordable housing for the residents of Palmdale.

- **Policy ED-5.2: Supply and diversity of housing.** Increase the supply and diversity of housing options to support different types of households including seniors, young adults, families, empty nesters, individuals or families with special needs, and multigenerational families.
- **Policy ED-5.3: Transit-oriented development.** Encourage transit-oriented development that meets community needs in the proposed downtown near the future multi-modal high speed rail station and at other transit nodes.
- **Policy ED-5.4: Displacement.** Address displacement issues due to redevelopment and large-scale capital projects.
- **Policy ED-5.5: Assembly of parcels.** Encourage assembly of small parcels via incentives to facilitate infill development.
- **Goal ED-7: Identify partnerships and resources to incentivize and implement sustainable development projects.**
 - **Policy ED-7.1: Regional partnerships.** Initiate and sustain multi-jurisdictional partnerships to leverage regional assets.
 - **Policy ED-7.2: Development review process.** Encourage new development through simplifying the City's development review processes and exploring opportunities to create incentives for new development.
 - **Policy ED-7.3: Expand and diversify tax base.** Expand tax base and analyze opportunities to diversify tax revenues to reduce the reliance on Sales and Use tax.
 - **Policy ED-7.4: Infrastructure financing.** Explore and implement creative infrastructure financing and delivery mechanisms such as Public Private Partnerships and Community Benefit programs.
 - **Policy ED-7.5: Opportunity zone.** Support the viability of the City's Opportunity Zones to expand existing businesses and attract new investment.

LAND USE AND COMMUNITY DESIGN

- **Goal LUD-2: A City that supports and encourages new growth in the developed urban core.**
 - **Policy LUD-2.1: Focused Growth.** Direct future growth to areas closer to the center of town, which can accommodate development based upon topography, environmental factors, and availability of existing infrastructure.
 - **Policy LUD-2.2: Preferred Development Patterns.** In considering requests to amend the Land Use Map, encourage proposals for development in those areas which are functionally connected to developed portions of the city, have available infrastructure, and do not have significant topographic or jurisdictional barriers, or other similar constraints.
 - **Policy LUD-2.3: Discouraged Development Patterns.** In considering requests to amend the Land Use Map, discourage proposals for development in those areas which are functionally separated from developed portions of the city by lack of infrastructure, expanses of vacant land, significant topographic or jurisdictional barriers, or other similar constraints.
- **Goal LUD-5: All new major development in the city is designed to support high-quality neighborhoods.**
 - **Policy LUD-5.1: New Complete Neighborhoods.** Require new development to provide multiple amenities, a beautiful public realm, and be consistent with the City's vision for complete neighborhoods.

- **Policy LUD-5.2: Walkability of New Neighborhoods.** Require all new neighborhoods to be pedestrian friendly by including features, such as short blocks, wide sidewalks, shaded streets, buildings that define and are oriented to streets or public spaces, traffic-calming features, convenient pedestrian street crossings, and safe streets designed for pedestrians, cyclists, and vehicles.
- **Policy LUD-5.3: Public Services in New Neighborhoods.** Require new developments to be designed for and provided with adequate public services and infrastructure. Require that these public facilities and services be provided concurrently with development to ensure a high quality of life for residents.
- **Policy LUD-5.4: Access to Retail/Services.** Strive for a high level of connectivity of residents to neighborhood services through site design, open space linkages, and bicycle facilities. Plan for 90 percent of residents (except for in rural residential designations) to be within a fifteen to twenty minute walking distance of retail and neighborhood services.
- **Policy LUD-5.5: Trail Networks.** Provide new trails systems that connect to the regional system.
- **Policy LUD-5.6: Character of New Housing.** Provide a diversity of architectural styles; avoid entire blocks or neighborhoods with identical housing styles.
- **Policy LUD-5.7: Natural Topography.** To the greatest extent feasible, preserve natural topographic features during the planning and development process. Utilize physical advantages of the site to minimize visual impacts.
- **Policy LUD-5.8: Transfer of Development.** Require clustered single family and multifamily development in less constrained areas, transferring density from areas constrained by seismic, drainage, rights-of-way, or other conditions based on technical studies.
- **Goal LUD-10: Growth of a transit-oriented community near high-speed rail that combines high-quality mixed-use development, a Downtown ‘feel’, office employment, affordable housing, and improved mobility.**
 - **Policy LUD-10.1: Mix of Destinations.** Develop mixed-use retail, residential and office buildings in the vicinity of the future multimodal high speed rail station to establish the area as a regional and local destination.
 - **Policy LUD-10.2: Places for the Community.** Develop community gathering spaces including plazas and neighborhood parks near the future multimodal transit station, in order to evolve the relocated Palmdale Transportation Center into an attractive and unique transit gateway.
 - **Policy LUD-10.3: Transit-Supportive Densities.** Support minimum development densities/intensities in the PTASP area to promote sufficient development that allows active placemaking.
 - **Policy LUD-10.4: Station Access.** Enhance transit and pedestrian linkages to surrounding areas to create a multi-modal transit and pedestrian-oriented center.
 - **Policy LUD-10.5: Avenue Q Revitalization.** Reinforce Avenue Q with development patterns that create a “Main Street” environment. Design the buildings facing Avenue Q (and to a lesser extent 6th Street East and 3rd Street East) to reflect the vision for a new “Main Street” – active uses, street-oriented entrances, tall floor-to-ceiling heights, reduced setbacks (unless adjacent to a plaza or park).

- **Goal LUD-22: Neighborhoods with a range of housing opportunities that allow people of all ages, abilities, socio-economic status, and family size to live in Palmdale.**
 - **Policy LUD-22.1: Mixed-Density Residential.** Promote residential infill development, where appropriate, as indicated by the mixed-density Residential Neighborhood land use designations (RN1, RN2, RN3, RN4).
 - **Policy LUD-22.2: Infill Priority.** Maximize opportunities for residential development through infill and redevelopment of vacant parcels by facilitating parcel aggregation and streamlining permit processing for infill applications.
 - **Policy LUD-22.3: Distributed Higher Density.** Permit a range of residential densities and housing types throughout the city rather than concentrating higher densities in limited areas.
 - **Policy LUD-22.4: Transit-Oriented Density.** Direct the location of senior and multifamily housing to areas accessible to public transportation, supportive commercial uses, and community facilities.
 - **Policy LUD-22.5: Varying Housing Types.** Encourage and allow a variety of housing types developed at a range of densities to serve varying household types, including, but not limited to, single-family attached and detached, accessory dwelling units, multifamily apartments, townhomes, duplexes, triplexes, quadplexes, and condominiums.
 - **Policy LUD-22.6: Special Needs Housing.** Facilitate housing for special needs groups, including the developmentally disabled, and non-traditional family groups by allowing a diverse range of housing configurations that are Americans with Disabilities Act (ADA) compliant and flexible.
 - **Policy LUD-22.7 Senior Housing.** Promote development of housing types that support multi-generational households, senior housing, and opportunities for seniors to age in place.

As discussed in Section 4.14.1, Palmdale has a current jobs-housing ratio of 0.8, which means that workers must travel to other communities to find employment. Growth under the proposed project would result in a more balanced jobs-housing ratio in 2045 by increasing jobs available in Palmdale specifically with the new Business Improvement Districts in the Planning Area. Therefore, such growth would not result in substantial adverse effects associated with an increased imbalance of jobs and housing in the City. Thus, even though the community can be considered "jobs poor," one of the Plan's vision themes ("Diverse and high-quality job options," described in Section 2.3.1 of this EIR) is to retain and expand Palmdale's employment base through training for key industries, connecting residents to local jobs, and promoting telecommuting within the City, which would help address this issue.

Secondly, growth carried out under the Plan would be substantial, but would not be "unplanned." As discussed in Section 2.3.1 of this EIR, the Plan's vision for the City was developed with extensive community input and in recognition of the state's planning priorities. The Plan focuses on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. The Plan identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace

business opportunities. These strategies will support existing and future employees, businesses, and residents. The potential environmental impacts of growth carried out under the Plan are analyzed throughout this EIR.

Finally, one purpose of the proposed Plan is to diversify the City's housing stock and provide more housing options, which minimizes pressure to develop on the remaining open space in the City by directing growth and redevelopment into the developed urban core, consistent with Plan Goal LUD-2 listed above. Therefore, because the Plan is designed for planned and orderly growth, as mandated by the State, and the Plan would help improve the City's balance of jobs and housing, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would the Plan displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Impact PH-2 DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD ADD UP TO 22,000 NEW HOUSING UNITS TO THE CITY'S HOUSING STOCK AND 75,756 NEW RESIDENTS BY 2045. THE PLAN WOULD INCREASE THE NUMBER OF HOUSING UNITS, INCLUDING MULTIFAMILY HOUSING UNITS, AND WOULD NOT DIRECTLY REPLACE ANY EXISTING HOUSING. THEREFORE, THE PLAN WOULD NOT DISPLACE SUBSTANTIAL NUMBERS OF EXISTING PEOPLE OR HOUSING, NECESSITATING THE CONSTRUCTION OF REPLACEMENT HOUSING ELSEWHERE, AND THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

According to SCAG's 2020 RTP SCS, there were 43,800 household in Palmdale in 2016 and SCAG projects that there will be 61,800 households in Palmdale in 2045, an increase of 18,000 households. While the number of households reflects only occupied housing units and does not include vacant units, this increased number of households would still create a significant increase in population and housing demand. As explained in Section 2.3.5 of this EIR, development carried out under the Plan is projected to result in approximately 22,000 new homes, which would more than accommodate SCAG's projected 18,000-household increase.

The Plan makes affordable housing a priority in Palmdale and, pursuant to AB 1397 (which was passed in 2017), the City will amend its Zoning Ordinance to require by-right approval of housing development that includes 20 percent of the units as housing affordable to lower income households. The Plan's vision includes the theme of providing housing options for residents at different stages of life and ability. The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the city that support residents of all abilities, and to preserve and improve the existing supply of affordable housing. The following Plan goals and policy address potential impacts from potential displacement:

- **Goal LUD-10 Growth of a transit-oriented community near high-speed rail that combines high-quality mixed-use development, a Downtown 'feel', office employment, affordable housing, and improved mobility.**
- **Goal LUD-22: Neighborhoods with a range of housing opportunities that allow people of all ages, abilities, socio-economic status, and family size to live in Palmdale.**
 - **Policy LUD-22.5: Varying Housing Types.** Encourage and allow a variety of housing types developed at a range of densities to serve varying household types, including, but not limited to, single-family attached and detached, accessory dwelling units, multifamily apartments, townhomes, duplexes, triplexes, quadplexes, and condominiums.

Assuming if there would be any displacement created by development carried out under the Plan, and where and to whom this displacement might occur, would be speculative, since the Plan does not include any specific proposals that would displace people or housing. However, with the Plan's projected net increase in housing of 22,000 units, any future displacement would be more than offset by new construction. The Plan does not propose any large-scale public works projects, such as new roadways, airports, reservoirs, utilities or other infrastructure that would result in the displacement of existing housing. Thus, the Plan would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.14.4 Cumulative Impacts

Cumulative development surrounding the Planning Area in combination with development facilitated by the Plan may result in increased population, job, and housing projections. Implementation of the project would increase density and intensity of existing land uses potentially resulting in increased growth and displacement of existing housing. Although the population facilitated by the Plan would exceed SCAG projections, adherence to applicable Plan goals and policies would ensure that the Plan would not result in cumulative impacts associated with population and housing. Therefore, the Plan would not result in significant cumulative impacts related to displacement of people or housing. Cumulative impacts would be less than significant.

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4.15 Public Services

This section assesses potential impacts to public services, including fire and police protection, public schools, and libraries. Impacts to parks and recreational facilities are discussed in Section 4.16, *Recreation*.

4.15.1 Environmental Setting

a. Fire Protection and Emergency Medical Services

The City of Palmdale (City) contracts fire protection, first response emergency and medical services through the County of Los Angeles Fire Department (LACoFD). The Planning Area contains six fire stations. These emergency facilities are listed in Table 4.15-1 and are categorized under the North Regional Office, Division Five, within the Battalions 11 and 17, which are located at Massari Park (Palmdale LHMP, 2021).

Table 4.15-1 Emergency Fire Facilities

Facility	Address
Los Angeles County Fire Department Station #24	1050 West Avenue P
Los Angeles County Fire Department Station #37	38318 9 th Street East
Los Angeles County Fire Department Station #93	5624 East Ave R
Los Angeles County Fire Department Station #114	39939 170 th St E
Los Angeles County Fire Department Station #131	2629 East Ave S
Los Angeles County Fire Department Station #136	3650 Bolz Ranch Rd

Source: City of Palmdale LHMP, 2021

LACoFD maintains a response time goal of 4-6 minutes. As shown below in Table, although response times have generally decreased across all categories since 2015, response times are within the 4–6 minute goal.

Table 4.15-2 LACoFD Average Incident Response Times for Palmdale

Category	2015	2016	2017	2018
Structure Fire	4.82	4.48	4.66	4.55
Grass Fire	6.09	5.55	5.64	5.91
Mobile Property/Vehicle Fire	5.90	5.62	5.19	4.32
Motor Vehicle Accident	5.15	5.21	5.09	5.26
Heart Attack/Chest Pain	5.73	5.68	5.64	5.45
Difficulty Breathing	5.77	5.72	5.46	5.54

LACoFD also dedicates its manpower and resources to back up the fire stations located in the City. Fire protection needs in the Planning Area will be met by the entire department’s resources as needed, regardless of the number of firefighters and equipment stationed in the Palmdale area (Palmdale LHMP, 2021). The staff from the individual stations within the area also conduct onsite inspections of new construction, as well as annual inspections of existing structures, to ensure compliance with the fire code. The City has several Very High Fire Hazard Zones and High and

Moderate hazard zones throughout the area. The Fire Hazards Zones are generally concentrated on the south and west parts of the City, on the foothills of the nearby mountains (California Department of Forestry and Fire Protection [CAL FIRE] 2017).

b. Police Protection

The City of Palmdale contracts with Los Angeles County for police services (City of Palmdale 2021). The Los Angeles County Sheriff’s Department operates one station located at 750 East Avenue Q which serves the City and surrounding communities including Acton, Agua Dulce, Big Pines / Wrightwood, Green Valley, Juniper Hills, Lake Elizabeth, Lake Hughes, Leona Valley, Littlerock, Llano, Pearblossom, Sun Village, and Valyermo. The Sheriff’s Department patrols 770 square miles and a population of approximately 200,000 people in and around the City (City of Palmdale 2020). Table 4.15-3 and Table 4.15-4 compare the Sherriff station’s total reported incidents and arrests within the City of Palmdale from 2015 to 2018. Crimes are split into two categories: Part 1 Crime – which refers to violent crimes; homicide, rape, robbery, and aggravated assault; and Part 2 Crime refers to property crimes; burglary, motor vehicle theft, and larceny-theft.

Table 4.15-3 Palmdale Sheriff Response Synopsis (2015-2018)

Total Reported Crimes	Calendar Year 2015	Calendar Year 2016	Calendar Year 2017	Calendar Year 2017
Part 1 Crimes	3,915	3,507	3,402	3,087
Part 2 Crimes	5,268	5,349	5,411	4,944
Noncriminal Incidents	6,923	7,314	7,183	8,017
Total Reported Incidents	16,106	16,170	15,996	16,048
Adult Arrests	4,767	4,575	5,726	5,359
Juvenile Arrests	348	356	271	257
Total Arrests	5,115	4,931	5,997	5,616

Source: Palmdale Station Strategic Plan 2020

Table 4.15-4 Crime Rate Comparison

Crime Rate per 10,000 population	2015	2016	2017	2018
Part 1 Crimes	225.65	201.04	200.55	185.46
Part 2 Crimes	297.09	302.09	302.28	277.65

Source: Palmdale Station Strategic Plan 2020

The Palmdale Sheriff’s station is an updated facility constructed in 2006 to replace the previous neighborhood sub-station. The sheriff’s station includes a 47,000 square-foot main building, 7,800 square-foot jail, and 8,400 square-foot motor pool and storage building (Los Angeles County Sheriff’s Department 2022).

c. Public Schools

Three school districts serve the Planning Area. These districts include two elementary school districts, Westside School District and Palmdale School District, and one high school district, Antelope Valley Union High School District. Three charter schools, Antelope Valley Learning Academy, Palmdale Academy Charter School and The Palmdale Aerospace Academy, also operate within the Planning Area.

There are a variety of higher education opportunities in the Planning Area. Antelope Valley Adult Education provides Career Technical Education programs for adults interested in starting a new career in the clerical, medical, dental, and technology fields. Additionally, the Aircraft Fabrication and Assembly (AFAB) program, housed at the Antelope Valley College Palmdale Center, prepares students with entry-level and upgraded skills for the aerospace industry. Table 4.15-5 lists each school serving the Planning Area by district, address, and grade or degree offered.

Table 4.15-5 Schools Serving the Planning Area

School	School District	Address	Grades/Degrees Offered
Highland High School	Antelope Valley Union High School District	39055 25th St West	9-12
Knight High School	Antelope Valley Union High School District	37423 70th St East	9-12
Palmdale High School	Antelope Valley Union High School District	2137 East Avenue R	9-12
R. Rex Parris Alternative High School	Antelope Valley Union High School District	38801 Clock Tower Plaza Dr East	9-12
Barrel Springs Elementary	Palmdale School District	3636 Ponderosa Way	K-5
Buena Vista Elementary	Palmdale School District	37005 Hillcrest Dr	K-5
Cactus Intermediate	Palmdale School District	3243 East Ave R-8	6-8
Chaparral Elementary	Palmdale School District	37500 50th St East	K-5
Cimarron Elementary	Palmdale School District	36940 45th St East	K-5
David G. Millen Intermediate	Palmdale School District	39221 22nd Street West	6-8
Desert Rose Elementary	Palmdale School District	37730 27th St East	K-5
Desert Willow Intermediate	Palmdale School District	36555 Sunny Lane	6-8
Dos Caminos Elementary	Palmdale School District	39147 Palm Tree Way	K-5
Golden Poppy Elementary	Palmdale School District	37802 Rockie Lane	K-5
Joshua Hills Elementary	Palmdale School District	3030 Fairfield Ave	K-5
Los Amigos Elementary	Palmdale School District	6640 East Ave R-8	K-5
Manzanita Elementary	Palmdale School District	38620 33rd St East	K-5
Mesquite Elementary	Palmdale School District	37622 43rd St East	K-5
Oak Tree Learning Center	Palmdale School District	38136 35th St East	
Palm Tree Elementary	Palmdale School District	326 East Avenue R	K-5
Palmdale Learning Plaza	Palmdale School District	38043 Division Street	
Palmdale Academy Charter School	Palmdale School District	3838 East Avenue R	9-12
Quail Valley Elementary	Palmdale School District	37236 58th St East	K-5
Shadow Hills Intermediate	Palmdale School District	37315 60 th Street East	6-8
Summerwind Elementary	Palmdale School District	39360 Summerwind Drive	K-5
Tamarisk Elementary	Palmdale School District	1843 East Ave Q-5	K-5
Tumbleweed Elementary	Palmdale School District	1100 E Avenue R-4	K-5
Yucca Elementary	Palmdale School District	38440 2nd St EAST	K-5
Anaverde Hills Elementary	Westside Union School District	2902 Greenbrier St	K-8

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School	School District	Address	Grades/Degrees Offered
Cottonwood Elementary	Westside Union School District	2740 West Avenue P-8	K-5
Esparanza Elementary	Westside Union School District	40521 35th St West	K-5
Gregg Anderson Academy Elementary	Westside Union School District	5151 West Avenue N-8	K-8
Hillview Intermediate	Westside Union School District	40525 Peonza Lane	6-8
Rancho Vista Elementary	Westside Union School District	40525 Peonza Lane	K-5
Antelope Valley Learning Academy	Private and Charter Schools	37212 47th Street East	K-12
Antelope Valley YouthBuild	Private and Charter Schools	38626 9th Street East	
Berean Fellowship Christian School	Private and Charter Schools	38050 30th Street East	1-12
Empowered Church International/Empowered Learning Academy	Private and Charter Schools	2205 East Palmdale Boulevard, Suite B	K-12
The Palmdale Aerospace Academy (PSD, City of Palmdale, NASA)	Private and Charter Schools	37212 47th Street East	TK-12
Saint Mary School	Private and Charter Schools	1600 East Avenue R-4	K-8
Shepherd Christian School	Private and Charter Schools	1730 High Vista Ave	K-12
Westside Christian	Private and Charter Schools	40027 11th Street West	K-8
A Caring Touch Christian Family Center	Preschool	3035 East Avenue S	Preschool
Adventureland Preschool	Preschool	41337 10th Street West	Preschool
Bright Futures Preschool & Daycare	Preschool	1320 Date Palm Drive	Preschool
Eagle Vision Preschool	Preschool	2121 E Palmdale Blvd	Preschool
Head Start State Preschool	Preschool	975 East Avenue P-8	Preschool
Just Plane Kids	Preschool	2555 East Avenue P	Preschool
Kids World Daycare & Preschool	Preschool	1220 E Avenue R-3	Preschool
Leaps & Bounds Preschool	Preschool	2026 East Avenue Q	Preschool
Antelope Valley Adult Education	Higher Education	1156 East Avenue S	Trade School Certificates
Antelope Valley College Palmdale Center (Community College)	Higher Education	2301 East Palmdale Blvd	Certificates Trade School Associate Degree
Brandman University (Private)	Higher Education	39115 Trade Center Dr, Suite 203	Certificates & Courses Credentials & Authorizations Associate Degree Bachelor's Degree Master's Degrees Doctoral Degrees
DeVry University Keller Graduate School of Management (Private)	Higher Education	39115 Trade Center Dr, Suite 100	Master's Degree

School	School District	Address	Grades/Degrees Offered
Embry-Riddle Aeronautical University High Desert Campus (Private)	Higher Education	40015 North Sierra Hwy, Suite B-200	Certifications Associate Degree Bachelor's Degree Master's Degree

Source: Raimi & Associates 2020

d. Parks

Existing parks and recreational facilities are discussed in Section 4.16, *Recreation*.

e. Public Facilities and Services

The City's main governmental offices are located at the intersection of Palmdale Boulevard and Sierra Highway. Facilities included at this location include City Hall, located at 38300 Sierra Highway. City Hall contains the offices of the City Manager and elected officials, City Council chambers, and government offices includes City Attorney, City Manager Clerk, and Administrative Services. Development Services located at 38250 Sierra Highway and also includes Building and Safety, Planning, Public Works, Business License, Economic Development, and Neighborhood Services; Human Resources & Community Programs located at 823 E. Avenue Q-9, , and Chimbole Cultural Center located at 38350 Sierra Hwy.

The Palmdale City Library is located at 700 East Palmdale Boulevard. The library is currently open Monday through Saturday. The library also offer courses and events for the community.

Other facilities at this location include the Palmdale Playhouse, Recreation & Culture Offices, Legacy Commons, and Courson Park (which features a brand-new recreation pool), are located off 10th Street East. The City's Maintenance Yard is located at 39110 3rd Street East, across from Desert Sands Park. Table 7.9 lists major publicly accessible services and or facilities in the Planning Area.

4.15.2 Regulatory Setting

a. State Regulations

Fire Services

California Fire Code (Title 24, Part 9, California Code of Regulations)

The California Fire Code incorporates the International Fire Code (IFC) with necessary California amendments. This Code prescribes regulations consistent with nationally recognized good practices for the safeguarding, to a reasonable degree, of life and property from the hazards of fire explosion. It also addresses dangerous conditions arising from the storage, handling, and use of hazardous materials and devices; conditions hazardous to life or property in the use or occupancy of buildings or premises; and provisions to assist emergency response personnel.

California Building Code

The 2019 California Building Code (CBC) became effective January 1, 2017, including Part 9 of Title 24, the California Fire Code. Section 701A.3.2 of the CBC requires that new buildings located in any

Fire Hazard Severity Zone in State Responsibility Areas, any Local Agency Very-High Fire Hazard Severity Zone, or any Wildland-Urban Interface Fire Area designated by the enforcing agency for which an application for a building permit is submitted, comply with all sections of the Chapter.

California Health and Safety Code (Sections 13000 et seq.)

This Code establishes State fire regulations, including regulations for building standards (also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

Police Services

California Constitution Article XIII, Section 35

Section 35 of Article XIII of the California Constitution was adopted by the voters in 1993 under Proposition 172. Proposition 172 directed the proceeds of a 0.50-percent sales tax to be expended exclusively for local public safety services. California Government Code Sections 30051-30056 provide rules to implement Proposition 172. Public safety services include police protection. Section 30056 provides that cities are not allowed to spend less of their own financial resources on their combined public safety services in any given year compared to the 1992-93 fiscal year. Therefore, an agency is required to use Proposition 172 to supplement its local funds used on police protection, as well as other public safety services. Section 35 at subdivision (a)(2) provides: "The protection of public safety is the first responsibility of local government and local officials have an obligation to give priority to the provision of adequate public safety services." In *City of Hayward v. Board of Trustees of California State University* (2015) 242 Cal. App. 4th 833, the court found that Section 35 of Article XIII of the California Constitution requires local agencies to provide public safety services, including police protection, and that it is reasonable to conclude that the city will comply with that provision to ensure that public safety services are provided.

School Services

California Government Code Section 65995 (California Government Code, Title 7, Chapter 4.9)

California Government Code Section 65995 authorizes school districts to collect impact fees from developers of new residential, commercial, and industrial building space. Section 65995 was established under the School Facilities Act of 1986 and refined and amended by the Leroy F. Greene School Facilities Act of 1998 (SB 50) to provide further guidance and restrictions on fee limits and fee types. The maximum fees authorized under SB 50 apply to zone changes, general plan amendments, zoning permits and subdivisions. The payment of school impact fees by developers are deemed to provide full and complete mitigation of school facilities impacts, notwithstanding any contrary provisions in CEQA or other State or local laws.

Senate Bill 50

The Leroy F. Greene School Facilities Act of 1998 (known as the Greene Act), enacted in 1998, is a program for funding school facilities largely based on matching funds. For new school construction, grants provide funding on a 50/50 State and local match basis. For school modernization, grants provide funding on a 60/40 State and local match basis. Districts that are unable to provide some, or

all, of the local match requirement and are able to meet the financial hardship provisions may be eligible for additional State funding.

The Greene Act permits the local district to levy a fee, charge, dedication, or other requirement against any development project within its boundaries, for the purpose of funding the construction or reconstruction of school facilities. The Act also sets a maximum level of fees a developer may be required to pay. Pursuant to Government Code Section 65996, the payment of these fees by a developer serves to mitigate all potential impacts on school facilities that may result from implementation of a project to a less-than-significant level.

a. Local Regulations

Palmdale Fire Code

The Palmdale Fire Code was subsequently adopted in 2019 after the State's adoption of the 2019 California Fire Code (CFC). The Palmdale Fire Code incorporates the 2019 CFC as well as local amendments proposed by LACoFD. Local amendments increase street access improvements and requirements for sprinkler installations (Palmdale Municipal Code Section 8.04.400).

Palmdale Municipal Code Chapter 3.45

Palmdale imposes Development Impact Fees (Palmdale Municipal Code Chapter 3.45) for public facilities in order to mitigate environmental impacts that derive from projects. The fees would be imposed on applicable residential and non-residential developments, and funds collected via these fees would be used to construct, expand, or rehabilitate public facilities within the City.

4.15.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to public services would be potentially significant if implementation of the Plan would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
 - a. Fire protection;
 - b. Police protection;
 - c. Schools;
 - d. Parks; and/or
 - e. Other public facilities.

Fire Protection Service

The Plan establishes a goal of maintaining fire response times to six minutes or less. Impacts would be considered significant if development under the Plan would result in unacceptable response times, thus creating the need for new or physically altered governmental facilities, the construction of which would cause significant environmental impacts.

Police Protection Service

The Plan establishes a goal of maintaining police response times to six minutes or less. Therefore, impacts would be potentially significant if development facilitated by the Plan would result in unacceptable response times, thus creating the need for new police protection facilities, the construction of which may create significant secondary environmental effects.

Public Schools

Impacts would be significant if public schools in the City could not accommodate future student growth through the construction of new facilities, or expansion of existing facilities. However, any development within the City would be required to pay state-mandated school impact fees. Pursuant to Section 65995 (3)(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998), the payment of statutory fees "...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization."

Public Facilities

The Plan would result in potentially significant impacts if Plan implementation would result in substantial adverse physical impacts associated with provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

Impacts to parks and recreational facilities are discussed in Chapter 4.16, *Recreation*.

b. Project and Cumulative Impacts

Threshold 1.a: Would the Plan result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

IMPACT PS-1 DEVELOPMENT CARRIED OUT UNDER THE PROPOSED PLAN WOULD INCREASE THE CITY'S POPULATION. THIS WOULD INCREASE THE DEMAND FOR FIRE AND EMERGENCY MEDICAL SERVICES AND POTENTIALLY CREATE THE NEED FOR NEW FIRE SERVICE FACILITIES. HOWEVER, COMPLIANCE WITH POLICIES IN THE PLAN AND THE PALMDALE MUNICIPAL CODE AS WELL AS OTHER CITY PROGRAMS, WOULD REDUCE IMPACTS RELATED TO FIRE PROTECTION FACILITIES TO A LESS THAN SIGNIFICANT LEVEL.

The Plan would not expand Palmdale's city limits or extend development into undeveloped areas, but development could occur in the City that would increase the Planning Area's population by approximately 75,756 residents. While fire and emergency medical service capacity is primarily based on service areas, an increase in population could incrementally increase the number of service calls and could eventually necessitate the need for additional staff and possibly facilities.

Any new development that would occur under the Plan would be required to comply with all applicable federal, state, and local regulations governing the provision of fire protection services, including adequate fire access, fire flows, and number of hydrants. This includes the 2019 California Fire Code, which contains project-specific requirements such as construction standards in new

structures and remodels, road widths and configurations designed to accommodate the passage of fire trucks and engines, and requirements for minimum fire flow rates for water mains.

The following Plan goals and policies address fire and emergency medical service:

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PSFI-2 Maintain superior public safety services to protect the community and meet the need of residents, businesses, and visitors.**
 - **Policy PFSI- 2.1: Response Times.** Maintain existing or superior average response times for fire and police services as the City’s population expands.
 - **Policy PFSI-2.2: Fire Protection.** Coordinate with and assist the Los Angeles County Fire Department in planning for future fire station sites in Palmdale and facilitate location and construction of fire stations in conjunction with other City facilities (such as parks or municipal buildings) where feasible.
 - **Policy PFSI-2.3: Service Level Expansion.** Regularly assess the need for service level expansion for fire and police services as the City’s population expands.
 - **Policy PFSI-2.5: County Fire Coordination.** Coordinate with the Los Angeles County Fire Department to ensure that service availability, resources, and staffing are appropriate for the community need.
- **Goal PSFI-5 Ensure that adequate public utilities are available to support development in an efficient and orderly manner.**
 - **Policy PFSI-5.3: Off-Site Fair Share Contribution.** Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.

SAFETY

- **Goal SE-1: A city with minimal public health, safety, and welfare impacts resulting from seismic hazards.**
 - **Policy SE-1.4: Essential Service Buildings Location.** As feasible, ensure that essential services buildings are not located in geologic hazard zones.
- **Goal SE-2 Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
 - **Policy SE-2.5: Maintain Firesafe Zones.** Require property owners to clear brush and high fuel vegetation and maintain firesafe zones (a minimum distance of 30 feet from the structure or to the property line, whichever is closer) to reduce the risk of fires. For structures located within a Very High Fire Hazard Severity Zone, the required brush clearance distance is 200 feet from structures to the property line.
 - **Policy SE-2.7: Emergency Access Routes for Wildfire Hazard Zones.** Require all new development in or near designated wildfire hazard zones to identify multiple evacuation/emergency access routes and file with City.

- **Policy SE-2.8: Los Angeles County Fire Department Coordination.** Continue to coordinate with the Los Angeles County Fire Department to provide emergency evacuation support and address fire hazards.
- **Policy SE-2.9: Development Requirements.** Ensure that the requirements of the Los Angeles County Fire Department are incorporated into new development through the development review process.

According to Chapter 3.45 of Palmdale’s municipal code, the projected increase in population is reasonably expected to create a substantial increase in the demand placed upon public facilities, including fire protection facilities. The City’s existing fire protection facilities will soon be inadequate to handle the projected population growth at existing levels of service. To counter this growth, fire protection facilities must be expanded.

Palmdale Municipal Code requires development applicants to pay development impact fees to mitigate the impacts of that development on the City’s existing fire protection facilities. The amount of the fire facilities impact fees collected in accordance with Chapter 3.45 of Palmdale Municipal Code will be limited to the cost of the facilities attributable to new development. The amount of the fire facilities impact fees collected will not include the cost of fire facilities that serve existing development. Fire facility impact fees for residential buildings will be established by resolutions of the City Council, upon the date of final inspection, or the date the certificate of occupancy is issued.

Any new development under the Plan, including the development of fire protection facilities, would also be required to undergo the City’s plan review process. The Fire Facilities Impact Fee Requirements and the goals and policies listed would reduce the environmental impacts of future projects to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 1.b: Would the Plan result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

IMPACT PS-2 DEVELOPMENT CARRIED OUT UNDER THE PROPOSED PLAN WOULD INCREASE THE CITY’S POPULATION. THIS WOULD INCREASE DEMAND FOR POLICE SERVICES AND POTENTIALLY CREATE THE NEED FOR NEW POLICE SERVICE FACILITIES. HOWEVER, COMPLIANCE WITH POLICIES IN THE PLAN WOULD REDUCE IMPACTS RELATED TO POLICE PROTECTION SERVICES TO A LESS THAN SIGNIFICANT LEVEL.

Police protection services are not “facility-driven,” meaning such services are not as reliant on facilities in order to effectively patrol a beat. An expansion of, or intensification of development within, a beat does not necessarily result in the need for additional facilities if police officers and patrol vehicles are equipped with adequate telecommunications equipment in order to communicate with police headquarters. However, if the geographical area of a beat is expanded, population increases, or intensification/redevelopment of an existing beat results in the need for new police officers, new or expanded facilities could be needed.

As described in Section 2, *Project Description*, the Plan would facilitate the development of approximately 22,000 housing units and the development of over 10 million square feet of commercial and industrial space in the Planning Area by 2045. The additional housing units would result in approximately 75,756 additional persons to the Planning Area and to the LACoSD service district (see Section 4.14, *Population and Housing*, for population estimation methodology). New structures facilitated by the Plan would be in the existing service area of LACoSD and would not require expansion of the service area or for the LACoSD to respond to calls in a new or more distant area.

Development of the Plan would not result in the need to construct new police facilities. Impacts to police protection service would be less than significant. In addition, implementation of the following Plan goals and policies would further ensure that impacts related to police protection services would be less than significant.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PSFI-2 Maintain superior public safety services to protect the community and meet the need of residents, businesses, and visitors.**
 - **Policy PFSI- 2.1: Response Times.** Maintain existing or superior average response times for fire and police services as the City’s population expands.
 - **Policy PFSI-2.4: County Sheriff Coordination.** Coordinate with the Los Angeles County Sheriff’s Department to ensure that service availability, resources, and staffing are appropriate for the community need.
 - **Policy PFSI-2.6: Community Policing.** Strengthen the relationship between law enforcement and the community by developing programs and initiatives focused on community policing.

SAFETY

- **Goal SE-1: A city with minimal public health, safety, and welfare impacts resulting from seismic hazards.**
 - **Policy SE-1.4: Essential Service Buildings Location.** As feasible, ensure that essential services buildings are not located in geologic hazard zones.
- **Goal SE-10: Reduce crime activity.**
 - **Policy SE-10.1: Crime Rate.** Track the rates of crime in the community on an ongoing basis and reallocate resources as necessary to address crime-related issues of concern.
 - **Policy SE-10.2: Crime Statistics.** Make up-to-date crime statistics readily available to the community via the City’s website or other media.
 - **Policy SE-10.3: Maximize Safety and Security.** Through the development review process, ensure that sites are designed in order to maximize safety and security, considering such factors as visibility, lighting, emergency access, legibility of street numbers, and fencing.
 - **Policy SE-10.4: Adequate Lighting.** Require all commercial and industrial developments to provide adequate lighting for buildings and parking areas as well as sufficient visibility for patrol vehicles to assist in law enforcement surveillance.
 - **Policy SE-10.5: Watch Group Education.** Encourage the formation and continued education of neighborhood and business watch groups to assist in crime prevention and detection.
 - **Policy SE-10.6: Crime Prevention Efforts.** Coordinate with local partners to encourage community-based crime prevention efforts.

- **Policy SE-10.7: Safe Environment Programs.** Promote after school, volunteer, and Business and Neighborhood Watch programs, and other innovative programs to help maintain a safe environment.
- **Policy SE-10.8: Law Enforcement and Youth Interaction.** Expand opportunities for positive law enforcement and youth interaction.

Mitigation Measures

No mitigation measures are required.

Threshold 1.c: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

IMPACT PS-3 THE PLAN WOULD NOT RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF NEW OR PHYSICALLY ALTERED SCHOOLS, OR THE NEED FOR NEW OR PHYSICALLY ALTERED SCHOOLS, IN ORDER TO MAINTAIN ACCEPTABLE SERVICE RATIOS OR OTHER PERFORMANCE OBJECTIVES. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The development facilitated by the Plan would increase the residential population and thus the need for new or physically altered schools might occur. As described in Section 2, *Project Description*, the Plan would facilitate the development of approximately 22,000 housing units by 2045 and development and redevelopment of commercial space in the Plan Area. The following Plan goals and policies would apply to the provision of public schools in the Plan Area:

LAND USE AND COMMUNITY DESIGN

- **Goal LUD-3 A City with high-quality services and facilities in all neighborhoods.**
 - **Policy LUD-3.4: Expansion of Public Facilities.** Maintain and expand public facilities and services to better support the community, including schools, libraries, utilities, and recreational spaces.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PSFI-5: Ensure that adequate public utilities are available to support development in an efficient and orderly manner**
 - **Policy PFSI 5.3 Off-Site Fair Share Contribution.** Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.

Any project associated with expanding school facilities, whether related to the construction of new facilities or modernization of existing facilities, would be subject to project-specific environmental review and mitigation pursuant to CEQA. It is the responsibility of the school districts to comply with CEQA requirements. Compliance with federal, State, and local regulations would be required prior to the construction of the new facilities. Further, individual projects facilitated by the Plan would be

subject to development impact fees, which pursuant to California Government Code Section 65995, payment of these fees by a developer serves to mitigate all potential impacts on school facilities that may result from implementation of a project to a less-than-significant level.

Therefore, the Plan would not result in significant environmental impacts associated with the need for the provision of new or physically altered schools, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.15.4 Cumulative Impacts

The environmental analysis above discusses all future public service facilities developed under the Plan. Therefore, the impacts discussed in this section are cumulative in nature. Policies contained in the Plan would reduce cumulative impacts to public services to a less than significant level, and the Plan would not make a substantial contribution to any cumulative public services impacts.

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4.16 Recreation

This section assesses potential impacts to recreational facilities including parks.

4.16.1 Environmental Setting

The City of Palmdale’s Public Works Department maintains 20 parks totaling 371 acres throughout the Planning Area, as well as recreation centers, pools, and a skate park. Public recreational facilities include Legacy Commons, Best of the West Softball Complex, Palmdale Amphitheater, and Dry Town Water Park. The 38-acre Domenic Massari Park, in the eastern portion of the City, provides residents with multiple playgrounds, lighted basketball courts, tennis courts, and skatepark, as well as walking paths, softball fields, sand volleyball courts, picnic tables, and a community room. The largest of the four parks in the western region of Palmdale is Marie Kerr Park, which has various lighted sports facilities, including the Best of West softball fields and a skatepark, as well as a picnic pavilion, barbecues, walking paths and a pool. Yellen Park, opened in 2017, also in the eastern region of Palmdale, provides the City’s off-leash, enclosed dog park. The central region of Palmdale has numerous parks, providing easy access to recreational facilities and amenities for a majority of residents.

The City of Palmdale Parks and Recreation Department offers a variety of recreational activities for all ages at community facilities. Services include community events, performing arts classes and events, youth and adult sports, senior citizen services, hobbies and special interest classes, mind and body classes, educational and library services, aquatic programming, and free community building services at select park locations.

Table 4.16-1 lists parks within the Planning Area and their size in acres. Figure 4.16-1 shows the locations of these parks throughout the Planning Area.

Table 4.16-1 Planning Area Park Areas

Park	Park Area (Acres)
American Indian Little League Fields	5
Anaverde Hills Park	6
Arnie Quinones Park	10 (3 developed)
Domenic Massari Park	38
Desert Sands Park	20
Dr. Robert C. St. Claire Parkway	9
Foothill Park	12
Joshua Hills Park	4
Legacy Commons Park	1
Manzanita Heights Park	4
Marie Kerr Park	77
William J. McAdam Park	19
Melville J. Courson Park	5
Palmdale Oasis Park	29
Palmdale Youth Pony League Fields*	5

Park	Park Area (Acres)
Pelona Vista Park	76
Poncitlan Square	2
Rancho Vista Neighborhood Park**	4
Sam Yellen Community Park	25 (12 developed)
Tejon Equestrian Park	20
Total	371 (351 developed)

Source: Raimi & Associates 2020

* Property not owned by the City of Palmdale and not operational

**Property not owned by the City of Palmdale

The City of Palmdale has an established parkland-to-population requirement of 5.0 acres of parkland per 1,000 persons. The City has a current population of 167,398 and maintains approximately 371 acres of parkland; therefore, the current parkland-to-population ratio is approximately 2.2 acres of parkland per 1,000 persons. Based on the current population, the City would need to add approximately 470 acres of parkland to meet the targeted parkland ratio.

4.16.2 Regulatory Setting

There are no federal regulations pertaining to parks and recreation that are applicable to this analysis. Applicable State and local regulations are described below.

a. State

State Public Park Preservation Act (California Public Resource Code Section 5400 – 5409)

The State Public Park Preservation Act is the primary instrument for protecting and preserving parkland in California. Under the Act, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, are provided to replace the parkland acquired. This ensures a no net loss of parkland and facilities.

Quimby Act (California Government Code Section 66477)

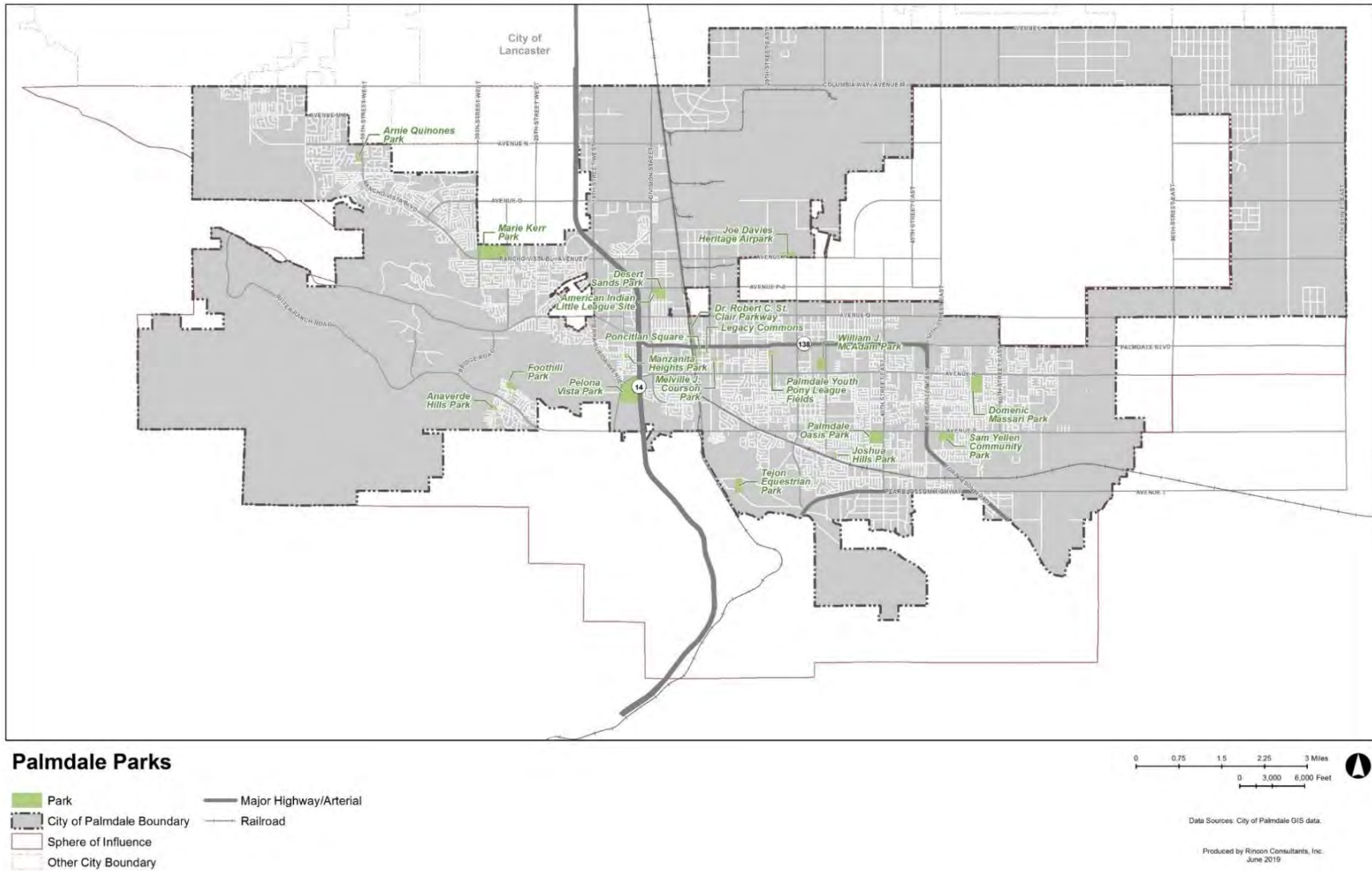
The Quimby Act allows cities and counties to adopt park dedication standards/ordinances requiring developers to set aside land, donate conservation easements, or pay fees towards parkland when property is subdivided.

b. Local

Palmdale Municipal Code (PMC)

Pursuant to PMC Chapter 3, Section 3.34.020, developers of most residential development projects requesting a subdivision or a zone change are required to either dedicate land for recreation and park purposes, pay an in-lieu fee as designated in the Palmdale Fee Resolution, or both. The in-lieu fees shall be spent on parks and recreation facilities to serve the development subject to the fee. These fees could be in the f

Figure 4.16-1 Planning Area Parks



orm of park dedication fees or development impact fees for new development projects.

4.16.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to recreation would be potentially significant if implementation of the Plan would:

1. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; and/or
2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment; and
3. Result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives.

Impacts are considered significant if Plan implementation would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or if Plan implementation would include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
Threshold 2:	Would the Plan include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?
Threshold 3:	Would the Plan result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Impact REC-1 DEVELOPMENT FACILITATED BY THE PLAN MAY INCREASE THE USE OF EXISTING PARKS AND OPEN SPACE, BUT POLICIES IN THE PLAN FOR PROVIDING ADDITIONAL RECREATIONAL FACILITIES, AS WELL AS CITY PARK DEDICATION FEES AND DEVELOPMENT IMPACT FEES, WOULD HELP OFFSET THESE IMPACTS, AND SUBSTANTIAL PHYSICAL DETERIORATION OF RECREATIONAL FACILITIES WOULD NOT OCCUR. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.14, *Population and Housing*, the Plan would accommodate the addition of approximately 75,756 residents to the Planning Area for a total population of 243,154 by 2045. Without additional parks, these residents would increase use of existing parks. Increases in the Planning Area's future population could therefore increase the use of existing neighborhood and regional parks and recreational facilities and result in eventual deterioration of such existing

facilities. In order to meet the 5.0 acres/1,000-person standard, the City would need to add approximately 850 acres of parkland, to achieve 1,215 acres of parkland overall to accommodate the anticipated population in the year 2045.

While the City has adequate acreage to fill this demand, however, half of the available park space has yet to be developed, and some sites are not approximate to current or future residents. The City's 2019 10-Year Capital Improvement Plan includes the development of sports fields in the drainage basin at Oasis Park, and 76 acres of new neighborhood parks. The City is also interested in potentially using natural stormwater drainage basins for recreation purposes.

The PMC requires the payment of in-lieu park fees and development impact fees, which would generate funds for additional parkland. Additionally, goals and policies of the Plan would facilitate the addition of parkland to comply with the target parkland-to-population ratio. Plan goals and policies related to parks and recreational facilities include:

LAND USE AND COMMUNITY DESIGN

- **Goal LUD-1: Complete Neighborhoods where residents can reach daily amenities, local retail, services, parks, and public facilities within a short 20-minute walk.**
 - **Policy LUD-1.3: Access to Amenities.** Strive to create development patterns such that the majority of residents are within twenty minutes or less walking distance of a variety of neighborhood-serving uses in Village Centers, such as parks, grocery stores, restaurants, places of worship, cafes, dry cleaners, laundromats, banks, hair care, pharmacies, civic uses, and similar uses.
 - **Policy LUD-1.4: Specific Plan Facilities.** Ensure Specific Plans are implemented with timely construction of supportive commercial uses and parks to support new residential uses.
- **Goal LUD-3: A City with high-quality services and facilities in all neighborhoods.**
 - **Policy LUD-3.4: Expansion of Public Facilities.** Maintain and expand public facilities and services to better support the community, including schools, libraries, utilities, and recreational spaces.
- **Goal LUD-5: All new major development in the city is designed to support high-quality neighborhoods.**
 - **Policy LUD-5.5: Trail Networks.** Provide new trails systems that connect to the regional system.
 - **Policy LUD-6.4: Recreational Spaces.** Improve existing parks and public spaces throughout the city to provide beautiful, comfortable, and inviting gathering spaces.
 - **Policy LUD-6.5: Amenities and Gathering Spaces.** Encourage new development to incorporate public plazas, seating, drinking fountains, and gathering places, especially in prominent locations and areas of pedestrian activity.
 - **Policy LUD-6.6: Ongoing Maintenance.** Require project developers to establish mechanisms, such as a Community Facilities District, to adequately maintain new parks, recreational facilities, and infrastructure.
- **Goal LUD-8: A place that encourages and supports its local arts and community culture.**
 - **Policy LUD-8.1: Arts and Cultural Programming.** Expand arts and cultural programming in public spaces, building off the existing Public Art Master Plan.

- **Policy LUD-8.2: Arts and Gathering Spaces.** Encourage new development, especially along Palmdale Boulevard and Avenue Q to incorporate public art in public plazas, seating, and gathering spaces along or near these corridors.
- **Goal LUD-9: Thriving, active Village Centers and Multi-Use Centers at regular intervals outside of the city core.**
 - **Policy LUD-9.1: Activity Centers.** Support a network of vibrant Village Centers that are mixed-use activity centers located throughout the City’s residential areas to create 20-minute neighborhoods, implemented through new mixed-use land use designations, which provide a mix of residential uses and daily goods/services.
- **Goal LUD-23: Improve walkability and connectivity in existing neighborhoods, through increased permeability and access through large blocks.**
 - **Policy LUD-23.3: Connectivity Enhancements.** Introduce new public trail systems that connect to the regional system through Capital Improvement Projects and city/regional parks improvements.
 - **Policy LUD-23.4: Quarter-Mile Radius.** Work toward a goal of having 90 percent of residents living within twenty minutes walking distance of a dedicated park, school, or multi-use trail.

CIRCULATION AND MOBILITY

- **Goal TM-4: Build and maintain a transportation system that enhances quality of life and public health.**
 - **Policy TM-4.3: Access to parks and open space.** Prioritize investments that expand access to Palmdale’s parks and trails and support physical activity.
 - **Policy TM-4.6: Lighting.** Provide human scale lighting along pedestrian thoroughfares, in commercial districts, on trails, and at transit stops.

PARKS, RECREATION, AND OPEN SPACE

- **Goal PR-1: Provision of adequate park and recreation facilities to meet the needs of all existing and future residents.**
 - **Policy PR-1.1: Parks and Recreation Master Plan.** Prepare a Parks and Recreation Master Plan to address park conditions and needs, recreation programming, facilities, and funding opportunities. As a part of a Parks Master Plan, evaluate adopted park standards, including designations for type of parks and guidelines for the facilities to be developed in future parks.
 - **Policy PR-1.2: Park location.** Ensure that park sites are located equitably, throughout the city, to maximize access to parks for residents within a 20-minute walking distance.
 - **Policy PR-1.3: Parks accessibility.** Provide a variety of parks and recreational facilities accessible to all residents throughout the city, including community and neighborhood parks, to meet the needs of youth, adults, and senior citizens.
 - **Policy PR-1.4: Future parks priority areas.** As feasible, work with the private development community to facilitate creation of parks in the future parks priority areas as indicated in Figure 10.3.
 - **Policy PR-1.5: Prioritize underserved areas.** Prioritize development of new parks and recreation facilities in underserved areas of the city, encouraging access to free or low-cost recreation for all Palmdale residents.

- **Policy PR-1.6: Expand park amenities.** Encourage expansion of amenities at existing public parks.
- **Policy PR-1.7: ADA Design.** Incorporate all design features, required by the Americans with Disabilities Act, which improve access to parks and park facilities for citizens with different abilities and needs.
- **Policy PR-1.8: School and park synergy.** Co-locate schools and parks and partner with non-profit organizations to provide recreational opportunities that benefit both students and the public.
- **Policy PR-1.9: Parkland incentives.** Work with the private development community to incentivize creation of publicly accessible parkland either on-or-off-site.
- **Goal PR-3: Provide a broad range of recreational programs for all ages and activity levels to enrich the lives of residents.**
 - **Policy PR-3.1: Recreation education.** Collaborate with community partners to expand healthy, and educational recreation programs and services for youth and families.
 - **Policy PR-3.2: Culturally sensitive programming.** Provide culturally sensitive programming at various recreation facilities to serve the city's diverse population.
 - **Policy PR-3.3: Shared school amenities.** Work with local school districts to make campus recreation amenities (such as open grassy areas, basketball courts, baseball fields, gymnasiums, among others) available to surrounding neighborhoods and local sports leagues or organizations during off-school hours.
 - **Policy PR-3.4: Arts and culture programming.** Work with local schools, non-profits, local organizations, and artists to increase arts and culture programming (such as performing arts and theater, visual arts, youth, and senior programs) throughout Palmdale.
- **Goal PR-4: Explore various means of acquiring parkland and seek creative and flexible techniques to accomplish park goals.**
 - **Policy PR-4.1: Incorporate parkland.** Wherever feasible, incorporate uses that increase the public benefit of park land, and are compatible with the goal of providing active recreation opportunities.
 - **Policy PR-4.2: Non-traditional parks.** Consider non-traditional types of parks to extend the range of recreational opportunities available within the city, including linear parks, neighborhood parks, and remodeling vacant buildings for indoor activities, among others.
 - **Policy PR-4.3: Public input.** Seek public input on locations for and amenities in new neighborhood and community parks.
 - **Policy PR-4.4: Recreation, cultural and artistic opportunities.** Continue to work with public and private entities to provide opportunities for recreational, cultural, and artistic activities within the community.
 - **Policy PR-4.5: Park site considerations.** Account for physical, land use, and cost considerations when evaluating future park sites for acquisition or dedication.
 - **Policy PR-4.6: Dual purpose recreation.** Explore options to provide public recreation access (i.e., walking or picnicking) to utility and or drainage basin areas as safety permits.
- **Goal PR-5: Evaluate the need for establishing a funding mechanism for parks development and the need for satellite services.**

- **Policy PR-5.1: Park maintenance and improvements funding.** Provide sufficient funding for maintenance and improvements for all parks.
- **Policy PR-5.2: Park fees.** Collect park fees and review this fee annually, to provide financing for improvement of parkland.
- **Policy PR-5.3: Parks financing.** Consider formation of a citywide public financing district to provide funding for design, acquisition, construction, and maintenance of parks throughout Palmdale.
- **Policy PR-5.4: Parks planning.** Continue to use the City’s Capital Improvement Program as the mechanism for short-term planning for acquisition of park land and construction of park and upgrades to existing facilities.
- **Policy PR-5.5: Grant funding opportunities.** Identify and pursue Quimby grant funding and other opportunities to finance future park development to meet parkland goals.
- **Goal PR-6: Provide a network of open space areas to provide for passive and active recreation opportunities, enhance the integrity of biological systems, and provide visual relief from the developed portions of the city.**
 - **Policy PR-6.1: Open Space network.** Develop an open space network through preservation of corridors along fault zones, natural drainage courses and in hillside areas to connect with the large areas of open space designated on the General Plan Land Use Map.
 - **Policy PR-6.2: Acquire natural open spaces.** Work with private property owners, conservation agencies, and Los Angeles County to expand and acquire natural open spaces and hillsides on the periphery of the city.
 - **Policy PR-6.3: Passive recreation use.** Encourage the use of open space areas for passive recreation with access points, multi-use trails, and interpretive information.
 - **Policy PR-6.4: Incentivize open space.** Work with the private development community to incentivize new publicly accessible open space through land dedications, land swaps, or other means.
- **Goal PR-7: Maintain a system of multi-use trails that provide connections to regional trails systems and residential neighborhoods.**
 - **Policy PR-7.1: Multi-use trails.** Provide and maintain multi-use trails, for use by pedestrians, bicyclists, and equestrians, connecting to existing or currently planned multi-use trails.
 - **Policy PR-7.2: Multi-use trail connections.** Prioritize multi-use trail connections to existing neighborhoods, public parks, and public facilities based on the modal priority network in the Mobility Element.
 - **Policy PR-7.3: Promote new multi-use trails.** When feasible, consider adding multi-use paths near or within areas used for water retention, like the aqueduct, or below transmission lines, to increase local walking and biking routes.
 - **Policy PR-7.4: Trail accessibility.** To the extent feasible, ensure that trails are accessible to all residents and incorporate ADA design features.
 - **Policy PR-7.5: Trail amenities and facilities.** Provide trail support facilities, such as benches, trash cans and trail heads/staging areas, as needed throughout the multi-use trails network.
 - **Policy PR-7.6: Trails acquisition.** Explore various means of acquiring trail easements or rights-of-way and pursue all available funding sources to provide trail acquisition and construction.

- **Policy PR-7.7: Trail financing.** To the extent feasible, use grant funding and private donations to finance trail construction.
- **Policy PR-7.8: Trails network adoption.** Incorporate the citywide multi-purpose trail network adopted under the General Plan into the regional trail system.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PFSI-1: Maintain superior public facilities to support the Palmdale community.**
 - **Policy PFSI-1.4: Access to Library Services.** Consider expanding library services to include branch locations in Village Centers (including retail centers), Education Districts, near public parks, and other similar settings to provide access to residents across Palmdale.
- **Goal PSFI-5: Ensure that adequate public utilities are available to support development in an efficient and orderly manner.**
 - **PFSI 5.3: Off-Site Fair Share Contribution.** Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.

While the Plan itself would not include the construction of specific parks or recreational facilities, impacts from the construction of new or expanded parks facilitated by the Plan would be similar to those identified in this EIR for construction or operations. Similar to other types of development, the construction of new or expanded park and recreation facilities could potentially contribute to the significant impacts including but not limited to biological resources, cultural resources, and construction noise impacts, as identified in Sections 4.4, *Biological Resources*, 4.5, *Cultural Resources*, and 4.13, *Noise*, of this EIR. Construction for any new parks or recreation facilities would be required to adhere to the policies contained in the proposed Plan and PMC. Policies include noise control during construction and operation of the project, air pollutant reduction by incorporating best available air quality and greenhouse gas mitigation in project design, and the prohibition of development that jeopardizes the integrity of sensitive or protected plant and animal communities. Based on the Planning Area's urban location and the limited land available, the construction or expansion of park facilities would result in less than significant impacts with adherence to the Plan policies and development review process.

Creating new parks and open space in the Planning Area would increase the ratio of park space per 1,000 residents (compared to conditions without such additional parks and open space), thus minimizing impacts on recreational facilities from increased use of existing parks from new development carried out under the Plan. Therefore, impacts on existing recreational facilities from the potentially increased use would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.16.4 Cumulative Impacts

The environmental analysis above discusses all future parks and recreation facilities developed under the Plan. Therefore, the impacts discussed in this section are cumulative in nature. Policies contained in the Plan would reduce cumulative impacts to recreation to a less than significant level, and the Plan would not make a substantial contribution to any cumulative recreation impacts.

4.17 Transportation

This section evaluates the Plan's potential impact on the local and regional transportation and circulation system, including its impact on vehicle miles traveled (VMT). The analysis is based on the information included in the Traffic Report prepared by Parsons Engineering in February 2022 and included in Appendix D of this EIR.

4.17.1 Environmental Setting

a. Existing Street Network

The scope of the Traffic Report was developed by Parsons Engineering in coordination with Raimi and Associates, Rincon Consultants, and the City of Palmdale. The Traffic Report analyzed regional, major arterials, secondary arterials, and different roadway classifications for Planning Area roadways in the City of Palmdale and County of Los Angeles. The major East-West and major North-South roads in and in the vicinity of the Planning Area include:

1. State Route 14
2. State Route 138
3. Avenue L
4. Columbia Way/Avenue M
5. Avenue P/Rancho Vista Boulevard
6. Technology Drive/East Avenue P-8
7. Avenue P-8/Bulldog
8. Avenue Q
9. Palmdale Boulevard/SR 138
10. East Avenue R/Rayburn Road
11. Avenue S
12. 10th Street West/Tierra Subida
13. Division Street
14. Fifth Street East
15. Sierra Highway
16. Elizabeth Lake Road
17. Town Center Drive/Avenue O
18. 10th Street East
19. 15th Street East
20. 15th Street West/Summer Wind
21. 20th Street East
22. 20th Street West
23. 25th Street East
24. 25th Street West/Highland Street
25. 30th Street East

26. 30th Street West
27. 40th Street East
28. 50th Street East/47th Street East
29. 60th Street West/Goddee Hill Road
30. 70th Street East
31. 90th Street East/87th Street East

b. Methodology

The following discussion summarizes the key points related to the traffic analysis carried out in the Traffic Report. For a more detailed description of this methodology please refer to the Traffic Report (Appendix D).

The Southern California Association of Governments (SCAG) develops long-range regional transportation plans including sustainable community strategies and growth forecast components, regional transportation improvement programs, and regional housing needs allocations.

The SCAG region utilizes the SCAG 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Travel Demand Model (SCAG model) to produce forecasts for the region. The SCAG model used for the Palmdale General Plan Update (Plan) is consistent with the RTP assumptions for existing year and future year conditions because all projects in the RTP are included. The 2040 future year model datasets were used to produce the future conditions for the Plan scenarios analyzed in the Traffic Report. The external-to-internal (XI) and internal-to-external (IX) trips forecast by the SCAG model are terminated at the external zones known as gateways. For Palmdale, the nearest gateway is State Route (SR) 14 at the Kern County line. These external trips with one end in the SCAG region are fixed for each horizon year and do not vary with changes in socioeconomic data. The SCAG model roadway classifications are consistent with the Federal Highway Administration (FHWA) roadway classifications, which are more detailed and do not necessarily align with the City of Palmdale classifications but are generally similar in nature. The main roadway classifications for the SCAG model are listed below, where each of these roadway types are further sub-divided.

- Freeways
- HOV and express lanes
- Expressways/parkways
- Principal arterials
- Minor arterials
- Major collectors
- Minor collectors
- Ramps
- Centroid connectors

The SCAG model currently has the last horizon year as 2040, with a calibration year of 2012, and is used for the SCAG region outside of the Planning Area. It is always best to maintain consistency with the regional model to the extent possible. In addition, there is no basis for altering the land use for rest of the region, which comprises 99 percent of the population of the region. The SCAG model was run for the following scenarios with updated land use within the Planning Area:

- **Existing Year (2017) Conditions.** The Planning Area land use was updated based on input from the City, the four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions.
- **2045 Base.** The Planning Area land use was updated based on input from the City, the four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions.
- **2045 Base with High Desert Corridor Freeway (HDC).** The highway network was updated to include a proposed facility beginning at SR 14 and joining SR138/SR18 east of Longview Road. Traffic assignments were performed utilizing 2045 Base scenario trip tables. This scenario was run to illustrate the effects of the HDC facility on the Palmdale street system because the proposed HDC facility would be a major east–west freeway connecting Palmdale and Victorville. The HDC may not be built before 2050 or beyond as no funding sources are identified.
- **2045 Preferred Plan.** The Planning Area land use was updated based on the 2045 Preferred Plan scenario assumptions. The four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. This scenario also included the addition of High-Speed Rail (HSR) trips at the Palmdale Station prior to performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions. In addition, the network was updated based on review and recommendations by the City of Palmdale.

Level of Service

Consistent with the requirements of SB 743 (described in Section 4.17.2b), LOS is no longer considered as the basis for determining environmental impacts under CEQA. The Traffic Report gives LOS information for the purpose of assessing roadway and intersection impacts associated with project-generated traffic, but for informational purposes only, not for CEQA impact analysis. This information is therefore not presented in this chapter of the EIR but is available in the Traffic Report (Appendix D).

Existing VMT

The Traffic Report defines daily trips as having an origin, destination, or both within the Planning Area, not including pass-through trips. As shown in Table 4.17-1, Palmdale trips generate a VMT of 8,028,726 and a Vehicle Hours Travelled (VHT) of 272,454 on all the roadway facilities within the SCAG region. The Planning Area only accounts for 25.1 percent of the total VMT generated, Lancaster accounts for 12.9 percent, the High Desert region accounts for 3.8 percent, and the rest of Los Angeles County accounts for 36.4 percent.

The Palmdale transportation network as a “system,” which includes all roadway facilities within the Planning Area, generates 4,275,533 VMT, 100,085 VHT, and 6,783 VHD daily. This accounts for all trips, including pass through trips, using the highway network within the Planning Area.

Existing Transit Network

The Antelope Valley Transit Authority (AVTA) serves a population of over 450,000 residents of Palmdale, Lancaster, and the unincorporated portions of northern Los Angeles County. The AVTA’s total service area covers 1,200 square miles and is bound by the Kern County line to the north, the San Bernardino County line to the east, the Angeles National Forest to the south, and Interstate 5 to

the west. The fixed route service area consists of approximately 100 square miles. The AVTA is the City of Palmdale’s primary transit provider, operating:

- 13 local transit routes
- 5 supplemental routes serving local schools or key employment destinations, such as Edwards Air Force Base
- 3 commuter services to regional job centers such as UCLA, CSUN, Downtown Los Angeles, Mojave, and Edwards Air Force Base.
- 1 TRANsporter service (Route 790), providing midday service to regional Metrolink service

The AVTA manages a total fleet of 75 transit buses, with 45 buses for local service and 30 buses for commuter service, surpassing the current peak requirements of 38 vehicles for local service and 25 vehicles for commuter service.

Table 4.17-2 shows all AVTA routes and key characteristics, including service type, span of service hours for weekdays and weekends, bus frequency, and key stops along each route. AVTA Routes include local services that operate daily, supplemental services that alleviate overcrowding on local routes during peak ridership times, and commuter routes meant to serve major commute patterns in the region. Additionally, special routes serve specific destinations, such as schools, or major employers. Most routes serve Palmdale directly, except for routes 4, 8, and 748. However, transfer opportunities make those routes accessible from other AVTA services.

Table 4.17-1 2017 Existing Planning Area (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	2,893,868	110,892	47.5
HOT facilities	11,431	364	54.4
HOV facilities	284,701	12,647	54.0
Expressways/parkways	4,381	145	53.9
Principal arterials	1,484,072	40,118	30.6
Minor arterials	1,631,560	42,584	31.7
Major collectors	1,067,379	29,211	25.1
Minor connectors	41,916	1,279	31.4
Freeway ramps	152,550	17,266	21.1
Truck lanes only	6,323	245	51.1
Centroid connectors	450,545	17,702	24.2
Total without centroid connectors	7,578,181	254,752	37.1
Total of All Links	8,028,726	272,454	35.9

*II = Internal-to-internal trips, where both ends of the trips are within the Planning Area

IX = Internal-to-external trips, where the origin of the trips is within the Planning Area and the destination of the trips could be anywhere in the SCAG region

XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Planning Area

Table 4.17-2 AVTA Route Characteristics

Route	Service Type	Weekday/Saturday/Sunday Span	Weekday/Saturday/Sunday Headways (min)	Key Destinations
1	Local	5:00am – 12:00am 6:00am – 11:30pm 7:00am – 8:31pm	15/30/60	Owen Memorial Park Palmdale Transportation Center Amargosa Commons
2	Local	5:55am – 10:43pm 6:30am – 8:13pm 6:30am – 7:18pm	30/60/60	Antelope Valley Mall Amargosa Commons
3	Local	5:55am – 10:44pm 6:30am – 8:14pm 6:30am – 7:18pm	30/60/60	Antelope Valley Mall Palmdale Transportation Center
4	Local	6:40am – 9:20pm 7:40am – 9:17pm Sat + Sun are the same	60/120	Owen Memorial Park
5	Local	6:05am – 9:23pm 7:05am – 7:03pm Sat + Sun are the same	60/60	Mayflower Gardens Owen Memorial Park
7	Local	5:00am – 10:29pm 6:55am – 8:50pm 6:55am – 6:53pm	60/60/60	AV Mall Palmdale Transportation Center Amargosa Commons
8 (express)	Local	6:35am – 6:05pm No weekend service	90	AV College Palmdale Transportation Center AVC Palmdale Center
9	Local	6:15am – 8:05pm 8:15am – 5:31pm Sat + Sun are the same	100/90	Quartz Hill High School AV Fairgrounds Owen Memorial Park
11	Local	5:15am – 11:55pm 5:45am – 7:57pm 6:45am – 6:57pm	30/60/60	AV Hospital Owen Memorial Park
12	Local	5:00am – 11:38pm 6:02am – 7:44pm 7:00am – 6:44pm	30/60/60	Owen Memorial Park

Route	Service Type	Weekday/Saturday/Sunday Span	Weekday/Saturday/Sunday Headways (min)	Key Destinations
50	Local	5:20am – 11:12pm 7:20am – 8:29pm 7:20am – 8:06pm	130/130/130	Owen Memorial Park Town Center Plaza
51	Local	5:30am – 10:33pm 7:25am – 8:16pm 7:25am – 7:48pm	130/130/130	Palmdale Transportation Center Town Center Plaza Littlerock High School
52	Local	5:30am – 11:24pm 7:30am – 7:26pm Sat + Sun are the same	120/120	Pete Knight High School
94 Special	Supplemental	M-F Eastbound 6:40am – 3:55pm M-F Westbound 2:27pm – 3:55pm W Westbound 1:12pm – 2:12pm	Only one run per day	Owen Memorial Park Eastside High School Antelope Valley High School
97 Special	Supplemental	M-F Westbound 6:35am – 7:10am M-F Eastbound 3:15pm – 3:45pm W Eastbound 1:20pm – 1:50pm	Only one run per day	Rancho Vista Blvd. & Town Center Drive AV Mall Palmdale Transportation Center Highland High School
98 Special	Supplemental	M-F Eastbound 6:30am – 7:15am M-F Westbound 2:52pm – 3:22pm W Westbound 1:04pm – 1:39pm	Only one run per day	Palmdale Transportation Center Pete Knight High School
747 Special	Supplemental	AM run 5:15am – 9:29am PM run 2:25pm – 6:45pm No weekend service	60	Palmdale Transportation Center Edwards Air Force Base
748 Special	Supplemental	AM run 4:50am – 7:00am PM run 4:45pm – 6:25pm No weekend service	AM 60/ PM 30	The Spaceship Company -79 The Spaceship Company – Faith Mojave Air & Space Port

Route	Service Type	Weekday/Saturday/Sunday Span	Weekday/Saturday/Sunday Headways (min)	Key Destinations
785	Commuter	AM run 3:50 am – 8:55 pm PM run 2:50 pm – 7:47 pm No weekend service	AM 15-20/ PM 20-25	Owen Memorial Park Palmdale Transportation Center LA Union Station Downtown LA
786	Commuter	AM run 4:00 am – 8:26 pm PM run 2:50 pm – 7:28 pm No weekend service	AM 20-30/ PM 30-40	Owen Memorial Park Palmdale Transportation Center UCLA/Westwood Century City
787	Commuter	AM run 4:00 am – 8:55 pm PM run 2:50 pm – 7:54 pm No weekend service	AM 10-20/ PM 20-30	Owen Memorial Park Palmdale Transportation Center CSUN Transit Center Warner Center Tarzana
790	Rail Connector	7:50 am – 5:50 pm No weekend service	80-210	Palmdale Transportation Center College of the Canyons Henry Mayo Memorial Hospital Newhall Metrolink Station McBean Regional Transit Center

Source: City of Palmdale 2020

According to data provided by AVTA for October 2018, on average AVTA sees over 51,300 boardings on weekdays and 8,240 boardings on weekends. Much of this ridership originates from Palmdale and Lancaster.

The highest AVTA ridership within Palmdale is observed along the following streets:

- 10th Street, providing connectivity to and from Lancaster
- Palmdale Boulevard, which has the highest activity along east/west corridors
- Avenue R and Avenue S

Four of the eight busiest bus stops within the AVTA system are in Palmdale. These stops are Palmdale Transportation Center, Antelope Valley Mall, Walmart at Avenue S/47th Street East, and Avenue R/47th Street East. While the Palmdale Transportation Center is the busiest of these stops, accounting for an average of 3,756 weekday boardings, the other stops listed serve a range of 470 to 650 weekday boardings each. Owens Memorial Park, located 1.5 miles north of Palmdale, is a key hub for commuter services—accounting for the most daily boardings on average (4,588).

Understanding where transit activity is highest helps inform how different modes of transportation should be prioritized along arterials in Palmdale.

Palmdale Transportation Center

The Palmdale Transportation Center (PTC), located at 39000 Clock Tower Plaza Drive, opened in April 2005. The PTC is a regional multi-modal hub including connections between Antelope Valley Transit Authority (AVTA) buses, Metrolink commuter rail service, Santa Clarita Transit service, Greyhound bus Service, and Amtrak Throughway bus service. Hours of operation for the PTC are from 3 a.m. to 10:30 p.m. Monday through Friday, and from 6 a.m. to 8 p.m. Saturday and Sunday. Eight centrally located bus stops connect regional service providers and local bus routes. The PTC has an indoor passenger waiting area with concessions, public telephones, seating, restrooms, and a security service. The PTC also provides parking for passengers using bus transit or commuter rail service; however, it is not designated as a Park-and-Ride facility. Metrolink passengers may also use a partially enclosed outdoor waiting area on the rail platform.

Park-and-Ride

The City of Palmdale has three designated Park-and-Ride facilities. They include the following:

- East Avenue S Park-and-Ride (210 East Avenue S)
- West Avenue S Park-and-Ride (434 West Avenue S)
- Pelona Vista Park-and-Ride (445 West Avenue R-8)

Dial-a-Ride Service

Dial-a-Ride provides curb-to-curb van service for seniors over the age of 65 and disabled residents of the Antelope Valley. Dial-a-ride is intended to fill transportation gaps between local, fixed route transit and ADA-mandated paratransit services, which are provided by Access Paratransit Services.

Paratransit Service

Paratransit is an alternative mode of flexible passenger transportation that does not follow fixed routes or schedules. Typically, vans or minibuses are used to provide paratransit service, but shared

taxis and jitneys are also important providers as a form of transportation. Complementary ADA paratransit is a federally mandated civil right of persons with disabilities who cannot ride the accessible public fixed route buses and trains.

Access Paratransit Services (Access Paratransit) is the name of the Los Angeles County Consolidated Transportation Services Agency administering the Los Angeles County Coordinated Paratransit Plan on behalf of the County’s 45 public fixed route operators (i.e., bus and rail).

Access Paratransit must be available for any eligible person for any purpose and to or from any location within three-quarters of a mile of any fixed route bus, and within three-quarters of a mile around Metro rail stations during the hours that the systems are operational. The service area is divided into regions and extends into portions of the surrounding counties of San Bernardino, Orange, and Ventura that are served by Los Angeles County fixed-route bus lines.

Access Paratransit operates seven days a week, 24 hours of the day in most areas of Los Angeles County. It is a shared ride service that is curb-to-curb and utilizes a fleet of small buses, minivans and taxis. Personal care attendants may ride with the qualified rider free of charge.

Metrolink

Metrolink is operated by the Southern California Regional Rail Authority (SCRRA) on behalf of the five counties in the greater Los Angeles Metropolitan region.

Metrolink offers commuter rail service from the Antelope Valley to Santa Clarita, the San Fernando Valley, and Los Angeles Basin cities Monday through Saturday. Table 4.17-3 shows the weekday timetable for this service.

Individual fares are calculated with a distance-based formula using the shortest driving distance between stations, with substantial discounts available for weekly and monthly passes. The one-way fare from Palmdale to Los Angeles Union Station is \$10.75. A seven-day pass is \$75.25, while a monthly pass is \$301.00. Assuming a commuter schedule of 22 working days per month, the monthly pass calculates to \$6.84 per one-way trip to Union Station. Metrolink also offers a popular \$10 weekend pass, featuring unlimited system-wide travel between 7 p.m. Friday and 11:59 p.m. Sunday.

Table 4.17-3 Metrolink Train Schedule: Palmdale to and from Union Station

Train No.	Southbound		Train No.	Northbound	
	Depart	Arrive		Depart	Arrive
200	3:54 a.m.	5:53 a.m.	201	6:19 a.m.	8:22 a.m.
202	4:56 a.m.	6:55 a.m.	205	8:29 a.m.	10:35 a.m.
204	5:26 a.m.	7:25 a.m.	209	11:06 a.m.	1:10 p.m.
282	5:58 a.m.	7:40 a.m.	215	3:28 p.m.	5:28 p.m.
206	6:08 a.m.	8:06 a.m.	219	4:44 p.m.	6:50 p.m.
208	6:58 a.m.	8:57 a.m.	285	5:34 p.m.	7:21 p.m.
212	9:11 a.m.	11:08 a.m.	221	5:58 p.m.	8:00 p.m.
216	11:45 a.m.	1:43 p.m.	223	6:38 p.m.	8:39 p.m.
220	1:55 p.m.	3:55 p.m.	225	7:36 p.m.	9:34 p.m.
226	6:26 p.m.	8:42 p.m.	227	9:25 p.m.	11:22 p.m.

Source: City of Palmdale 2020

Bicycle Network

The City of Palmdale bicycle network is anchored by a 4.7-mile Class 1 bicycle path along Sierra Highway from Technology Drive, continuing north into Lancaster. This facility provides regional connectivity and may benefit from improvements, such as shade trees to assist people on bicycles on warm days. The Sierra Highway bike path, which is made up of approximately 4 miles of combined Class 1 bicycle paths, Class 2 bicycle lanes, and Class 3 bicycle paths, serves communities in central Palmdale. Few multi-use paths across the city provide recreational amenities. The Avenue S bike path runs from SR-14 to 45th Street East.

Bicycle network connectivity is limited outside of a few neighborhoods within central Palmdale. The Bicycle Transportation Plan (2018 Draft) provides recommendations for an extensive network of bicycle facilities, ranging from bicycle paths to colored and/or buffered bicycle lanes. The Bicycle Transportation Plan (2018 Draft) includes maps of corridors for bicycle facilities and a design toolkit to inform detailed designs and implementation.

4.17.2 Regulatory Setting

a. Federal

The US Department of Transportation (US DOT) provides a number of grant programs, primarily for the construction and upgrading of major highways and transit facilities. Many of these grants are administered by the state and regional governments. Use of federal grant funding also invokes the National Environmental Protection Act (NEPA) in some cases. The Federal Highway Administration (FHWA) sets design standards (such as interchange spacing) for interstate highways such as the I-5 and I-210 freeways. The Federal Railroad Administration (FRA) within the US DOT establishes safety rules regarding the operation of railroads (e.g., maximum train speeds, maximum allowed highway crossing blockage time).

b. State

Senate Bill 743 – Transportation Impacts

Adopted in 2013, Senate Bill (SB) 743 required the Governor’s Office of Planning and Research (OPR) to develop new CEQA Guidelines that address transportation impact metrics under CEQA. Section 15064.3 was added to the State CEQA Guidelines requiring transportation impact analysis be based on VMT, instead of a congestion metric (such as LOS) and stating that a project’s effect on automobile delay shall not constitute a significant environmental impact, as previously required. In December 2018, OPR published a Technical Advisory on Evaluating Transportation Impacts, including guidance for VMT analysis (OPR 2018). The Office of Administrative Law approved the updated CEQA Guidelines and lead agencies were given until July 1, 2020, to implement the updated guidelines for VMT analysis.

Assembly Bill 1266 – Traffic Control Devices: Bicycles (2019)

Assembly Bill (AB) 1266 requires Caltrans to provide guidance on the ways in which to notify bicyclists that they are allowed to traverse straight through an intersection when a right-turn-only lane requires vehicles to turn. Caltrans will be required to develop standards on lane striping, regulatory signage, and pavement markings in these scenarios.

c. Local

Palmdale Municipal Code

Chapter 17.191 Transportation Demand Management

This section discusses the development standards for any development project. Prior to approval of any development project, the applicant must make provisions for all applicable transportation demand management and trip reduction measures. All facilities and improvements constructed or otherwise shall be maintained in a state of good repair. The property owner shall be responsible for complying with the provisions of this Chapter either directly or by delegating such responsibility as may be appropriate to a tenant or to an agent.

Chapter 17.87 Off-Street Parking

Chapter 17 discusses the amount, location, and design of parking and loading access for motor vehicles and bicycles. It also serves to ensure the provision of adequate, accessible, secure, properly lighted, and well maintained and screened off-street parking facilities. Properly provided and designed parking will facilitate the intended use of the property; reduce traffic congestion and safety concerns; protect the neighborhoods from the effects of vehicular noise and traffic generated by adjacent nonresidential land use district; assure maneuverability of emergency vehicles; and provide a positive visual experience.

4.17.3 Impact Analysis

a. Methodology and Significance Thresholds

Future Conditions Analysis

The future highway network analyzed in the Traffic Report is consistent with the SCAG model assumptions for the forecast year 2040, which is the farthest out horizon year available with the SCAG regional model. The 2040 horizon year is the basis for the future year 2045 forecasts for the Palmdale General Plan scenarios, with several roadway improvements additionally assumed for the 2045 horizon year. These include (noting some of them may have already been upgraded):

- Avenue P/Rancho Vista Boulevard
 - Three lanes per direction between west of 30th Street West and Division Street
 - Two lanes per direction between Division Street and 30th Street East
 - One lane per direction between 30th Street East and 50th Street East
- Technology Drive/East Avenue P-8
 - Two lanes per direction between Sierra Highway and 70th Street East
- East Avenue S
 - Three lanes per direction between 30th Street and 47th Street East
- East Avenue Q Corridor between 6th Street and Sierra Highway to facilitate better access to the proposed Palmdale High-Speed Rail Station

The 2045 Preferred Plan scenario also included the Palmdale High-Speed Rail Station boardings, which are integrated into the traffic assignment procedures. Daily boarding for the 2045 scenarios are reported to be 5,600 riders one way, per the Transportation Technical Report published by the California High-Speed Rail Authority Palmdale to Burbank Project Section and dated March 2019.

2045 Base

The 2045 Base scenario used the SCAG model forecast year 2040 dataset, and the network assumptions are consistent with the RTP assumptions. The 2045 socio-economic data for the Planning Area was updated with inputs from the City of Palmdale. The socio-economic data outside the Planning Area is consistent with the SCAG assumptions for the region for the year 2040. The SCAG four-step model procedures were run with the updated land use in the Planning Area.

The daily link-based VMT, VHT and the average speeds by facility types are shown in Table 4.17-4 for the Palmdale only trips. Table 4.17-4 shows the link-based VMT, VHT, VHD, and average speeds by facility for the Planning Area for all trips regardless of trip origin or destination. As shown in Table 4.17-4, the Palmdale trips generate a VMT of 8,862,268 and a VHT of 338,264 on all the roadway facilities within the SCAG region.

As shown in Table 4.17-5, the Palmdale transportation network as a system, which includes all roadway facilities within the Planning Area, generates 5,029,773 VMT, 123,190 VHT and 12,590 VHD daily under this scenario. This accounts for all trips, including pass through trips, using the highway network within the Planning Area.

Table 4.17-4 2045 Base Planning Area (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	2,945,756	129,261	44.7
HOT facilities	9,285	271	63.3
HOV facilities	284,422	17,684	47.7
Expressways/parkways	5,650	213	51.2
Principal arterials	1,671,644	47,215	29.8
Minor arterials	1,897,218	58,807	30.3
Major collectors	1,321,027	39,778	23.6
Minor connectors	43,307	1,357	29.0
Freeway ramps	156,041	22,220	20.1
Truck lanes only	7,485	730	22.2
Centroid connectors	520,432	20,729	24.4
Total without centroid connectors	8,341,835	317,535	35.2
Total of All Links	8,862,268	338,264	34.2

*II = Internal-to-internal trips, where both ends of the trips are within the Planning Area

*IX = Internal-to-external trips, where the origin of the trips is within the Planning Area and the destination of the trips could be anywhere in the SCAG region

*XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Planning Area

Source: Traffic Report, 2022

Table 4.17-5 2045 Base Planning Area VMT/VHT by Facility Type for All Trips

Facility	AM Peak				PM Peak				Daily			
	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay	VMT	VH	Speed	Delay
Freeways	270,601	5,517	49.1	1,651	305,078	5,068	60.2	710	1,181,686	19,501	60.6	2,620
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	69,103	1,239	55.8	252	68,108	1,040	65.5	67	145,399	2,395	60.7	318
Expressways/parkways	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Principal arterials	226,065	6,363	35.5	1,382	338,346	9,459	35.8	1,972	1,257,146	32,740	38.4	5,022
Minor arterials	262,555	6,673	39.3	658	419,648	10,697	39.2	1,065	1,401,721	34,643	40.5	2,427
Major collectors	123,229	3,449	35.7	489	180,141	4,873	37.0	519	568,232	14,924	38.1	1,182
Minor collectors	2,741	73	37.7	2	3,415	113	30.2	19	11,491	349	32.9	32
Freeway ramps	11,492	582	19.8	232	17,115	871	19.6	363	61,651	2,836	21.7	990
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	73,459	2,881	25.5	0	121,957	4,786	25.5	0	402,448	15,803	25.5	0
Total—All Links	1,039,246	26,775	38.8	4,666	1,453,807	36,907	39.4	4,714	5,029,773	123,190	40.8	12,590

2045 Base with High Desert Corridor Freeway

The 2045 Base with High Desert Corridor freeway used the 2045 Base year dataset and the network assumptions are consistent with the RTP except for the HDC facility. The 2045 socio-economic data for the Planning Area was updated with inputs from the City of Palmdale. The socio-economic data outside the Planning Area is consistent with the SCAG assumptions for the region for the year 2040. The High Desert Corridor Freeway was coded from SR 14 to SR 138. The 2045 Base scenario trip tables were used to perform traffic assignments only. This scenario was performed to illustrate the effects of the HDC on the Palmdale street system because the HDC would be a major east–west freeway connecting Palmdale and Victorville. The HDC may not be built before 2050 or beyond as no funding sources are identified.

Table 4.17-6 shows the link-based VMT, VHT, VHD, and average speeds by facility for the Planning Area for all trips regardless of the trip origin or destination under this scenario. As shown in Table 4.17-6, Palmdale trips generate a VMT of 8,868,517 and a VHT of 335,887 on all the roadway facilities within the SCAG region under this scenario. The Palmdale Planning Area only accounts for 27.5 percent of the total VMT generated, Lancaster accounts for 12.6 percent, and the High Desert region accounts for 3.3 percent. The rest of Los Angeles County accounts for 32.5 percent.

As shown in Table 4.17-7, the Palmdale transportation network as a system, which includes all roadway facilities within the Planning Area, generates 5,223,759 VMT, 120,023 VHT and 10,388 VHD daily under this scenario. This accounts for all trips, including pass through trips, using the highway network within the Planning Area.

Table 4.17-6 2045 Base with High Desert Corridor Planning Area (II,IX, and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	3,068,071	131,896	44.8
HOT facilities	10,024	292	63.2
HOV facilities	282,077	17,774	47.7
Expressways/parkways	192,155	3,645	51.7
Principal arterials	1,579,551	44,131	29.8
Minor arterials ¹	1,696,186	53,626	30.2
Major collectors	1,301,285	39,251	23.6
Minor connectors	48,311	1,537	29.0
Freeway ramps	166,282	22,421	20.2
Truck lanes only	7,516	710	23.0
Centroid connectors	517,058	20,595	24.4
Total without centroid connectors	8,351,459	315,282	35.2
Total of All Links	8,868,517	335,877	34.2

*II = Internal-to-internal trips, where both ends of the trips are within the Planning Area

*IX = Internal-to-external trips, where the origin of the trips is within the Planning Area and the destination of the trips could be anywhere in the SCAG region.

Source: Traffic Report, 2022

Table 4.17-7 2045 Base with High Desert Corridor Planning Area VMT/VHT by Facility Type for All Trips

Facility	AM Peak				PM Peak				Daily			
	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay
Freeways	312,614	6,131	51.0	1,665	373,363	6,101	61.2	768	1,403,737	22,764	61.7	2,711
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	72,021	1,328	54.2	299	72,002	1,122	64.2	94	149,952	2,535	59.2	393
Expressways/parkways	81,889	1,455	56.3	218	115,712	2,056	56.3	309	398,295	6,736	59.1	731
Principal arterials	205,935	5,348	38.5	922	306,588	7,915	38.7	1,282	1,144,438	27,929	41.0	3,315
Minor arterials	211,775	5,217	40.6	314	344,683	8,536	40.4	551	1,128,747	27,502	41.0	1,233
Major collectors	105,296	3,013	34.9	460	161,020	4,418	36.4	490	511,576	13,631	37.5	1,108
Minor collectors	2,094	58	36.0	2	3,219	109	29.5	19	10,866	335	32.4	32
Freeway ramps	15,259	592	25.8	194	22,687	930	24.4	331	77,100	2,927	26.3	865
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	72,075	2,827	25.5	0	119,703	4,696	25.5	0	399,047	15,663	25.5	0
Total—All Links	1,078,958	25,970	41.5	4,074	1,518,977	35,883	42.3	3,843	5,223,759	120,023	43.5	10,388

2045 Preferred Plan

The 2045 Base dataset was used for 2045 Preferred Plan scenario (the Plan, as described in this EIR) and the network assumptions are consistent with the RTP. The 2045 socio-economic data for the Planning Area was updated based on the 2045 Preferred Plan scenario. The socio-economic data outside the Planning Area is consistent with the SCAG assumptions for the region in the year 2040.

The 2045 Base Highway network was reviewed by the City of Palmdale for the 2045 Preferred Plan and based on their recommendations, the highway network was updated. In addition, High-Speed Rail ridership at the Palmdale station was incorporated into the highway assignment procedures.

The daily link-based VMT, VHT, and the average speeds by facility types are shown in Table 4.17-8 for Planning Area only trips. This table shows the link-based VMT, VHT, VHD, and average speeds by facility for the Planning Area for all trips, regardless of trip origin or destination, under this scenario.

As shown in Table 4.17-9, under this scenario Palmdale trips generate a VMT of 7,727,110 and a VHT of 261,367 on all the roadway facilities within the SCAG region. The Planning Area only accounts for 28.9 percent of the total VMT generated, Lancaster accounts for 14.2 percent, and the High Desert region accounts for 4.1 percent. The rest of Los Angeles County accounts for 27.4 percent.

As shown in Table 4.17-9, the Palmdale transportation network as a system, which includes all roadway facilities within the Planning Area, generates 4,685,219 VMT, 111,241 VHT and 8,259 VHD daily under this scenario. This accounts for all trips, including pass through trips, using the highway network within the Planning Area.

Table 4.17-8 Preferred Plan Planning Area (II and IX) Average VMT, VHT, and Speed

From/To	VMT	VHT	Average Speed (mph)
Freeways	2,395,390	92,084	45.2
HOT facilities	7,911	230	63.4
HOV facilities	184,453	9,425	49.0
Expressways/parkways	5,083	184	51.2
Principal arterials	1,571,929	42,699	29.9
Minor arterials	1,821,834	50,209	30.5
Major collectors	1,075,565	30,851	23.7
Minor connectors	53,726	1,575	29.1
Freeway ramps	122,764	14,415	20.4
Truck lanes only	8,130	646	24.9
Centroid connectors	480,325	19,048	24.4
Total without centroid connectors	7,246,785	242,319	35.5
Total of All Links	7,727,110	261,367	34.5

Table 4.17-9 2045 Preferred Plan Planning Area VMT/VHT by Facility Type for All Trips

Facility	AM Peak				PM Peak				Daily			
	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay
Freeways	243,132	4,149	58.6	675	294,514	4,620	63.7	413	1,063,365	16,410	64.8	1,219
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	50,509	776	65.1	55	41,547	598	69.5	4	99,507	1,480	67.2	59
Expressways/parkways	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Principal arterials	225,647	6,006	37.6	1,038	330,852	8,917	37.1	1,601	1,208,274	30,538	39.6	3,914
Minor arterials	262,849	6,443	40.8	449	420,218	10,415	40.3	824	1,382,559	33,333	41.5	1,738
Major collectors	110,627	2,819	39.2	212	157,278	3,986	39.5	250	492,059	12,273	40.1	563
Minor collectors	5,977	144	41.5	2	7,070	178	39.6	6	19,576	497	39.4	12
Freeway ramps	11,299	537	21.1	197	15,858	759	20.9	286	55,388	2,412	23.0	754
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	67,697	2,650	25.5	0	109,639	4,293	25.5	0	364,492	14,297	25.5	0
Total—All Links	977,736	23,524	41.6	2,628	1,376,977	33,764	40.8	3,384	4,685,219	111,241	42.1	8,259

Table 4.17-10 shows various statistics for the home-based and all trip purposes for the Planning Area under all scenarios. The average trip lengths for home-based work, home-based trips and all trip purposes decrease in the future Plan scenarios, which in turn reduces the VMT generated. The VMT per capita and the VMT per employee also decrease. In addition, the average trip lengths for the 2045 Preferred Plan scenario decreases. All these reductions effectively contribute toward the overall reduction in VMT, thereby improving air quality and reducing greenhouse gas (GHG) emissions and carbon dioxide (CO₂) emissions.

Table 4.17-10 Trip Purpose Statistics

Palmdale Sphere—Statistics	2017 Existing	2045 Base	2045 Preferred Plan
Home-based work trips—VMT per capita	16.43	14.54	8.85
Home-based work trips—average trip length	31.57	31.10	21.59
Home-based all trips—VMT per capita	26.19	23.20	16.57
Home-based all trips—average trip length	16.49	15.63	12.62
All trips—VMT per service population	34.30	30.60	27.00
All trips—average trip length	11.87	11.56	10.86

The link-based performance statistics for the roadway facilities within the Planning Area are shown in Table 4.17-11. The VMT, VHT, and VHD (vehicle hours of delay) are reported for daily and AM and PM peak periods for all the scenarios. These metrics are lower in the 2045 Preferred Plan than in the 2045 base scenario.

Table 4.17-11 Performance Statistics by Facility Type within the Planning Area

Performance Measurement	Facility Type	Planning Area Analysis		
		2017 Existing	2045 Base	2045 Preferred Plan
Daily VMT (thousands)	Freeways	1,203.1	1,327.1	1,162.9
	Arterials	2,197.7	2,658.9	2,590.8
	Other	874.8	1,043.8	931.5
	All Facilities	4,275.6	5,029.8	4,685.2
AM and PM peak period VMT (thousands)	Freeways	646.4	712.9	629.7
	Arterials	1,049.5	1,246.6	1,239.6
	Other	445.4	533.5	485.4
	All Facilities	2,141.3	2,493.1	2,354.7
Daily VHT (thousands)	Freeways	18.8	21.9	17.9
	Arterials	53.3	67.4	63.9
	Other	28.0	33.9	29.5
	All Facilities	100.1	123.2	111.2
AM and PM peak period VHT (thousands)	Freeways	10.7	12.9	10.1
	Arterials	26.4	33.2	31.8
	Other	14.5	17.6	15.4
	All Facilities	51.6	63.7	57.3

Performance Measurement	Facility Type	Planning Area Analysis		
		2017 Existing	2045 Base	2045 Preferred Plan
Daily VHD (thousands)	Freeways	1.6	2.9	1.3
	Arterials	3.6	7.4	5.7
	Other	1.5	2.2	1.3
	All Facilities	6.8	12.6	8.3
AM and PM peak period VHD (thousands)	Freeways	1.5	2.7	1.1
	Arterials	2.7	5.1	3.9
	Other	1.1	1.6	1.0
	All Facilities	5.3	9.4	6.0

Vehicle Miles Traveled

Section 15064.3 of the CEQA Guidelines states that a project’s effect on automobile delay shall not constitute a significant environmental impact, as previously required under CEQA, and VMT is now the required metric to be used for identifying CEQA impacts and mitigation, instead of a congestion metric (such as LOS). Section 15064.3 of the CEQA Guidelines refers to VMT as the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) below (regarding roadway capacity), a project’s effect on automobile delay shall not constitute a significant environmental impact. Criteria for analyzing transportation impacts includes the following:

- **Land Use Projects.** Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.
- **Transportation Projects.** Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.
- **Qualitative Analysis.** If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project’s vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
- **Methodology.** A lead agency has discretion to choose the most appropriate methodology to evaluate a project’s vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project’s vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the

environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

While some jurisdictions may choose to retain LOS standards as one of a project's condition of approval, CEQA impacts and/or mitigation measures are no longer based on changes to LOS.

VMT was chosen as the primary metric to better integrate land use and multimodal transportation choices and encourage alternative transportation, greater efficiency, and reduced GHG emissions. OPR's Technical Advisory on Evaluating Transportation Impacts provides technical recommendations regarding the assessment of VMT, thresholds of significance, and mitigation measures (OPR 2018). OPR offers a generalized recommendation of a 15 percent reduction below existing VMT as a threshold of CEQA significance. County of Los Angeles VMT thresholds are used as CEQA significance thresholds in this analysis, however, for the reasons discussed below.

Trip- or tour-based VMT analysis is recommended over boundary-based VMT analysis as the most appropriate methodology for analyzing VMT impacts under CEQA. Trip-based assessment of VMT captures the full extent of the vehicle trip length, including the portion that extends beyond the jurisdictional boundary. VMT impacts are assessed by quantifying trips to or from a jurisdiction, starting or ending within the jurisdiction. Conversely, a boundary-based assessment of VMT impacts is quantified by the length of the vehicle trips within a jurisdiction's boundaries.

As noted in the current CEQA Guidelines, agencies are directed to choose metrics appropriate for their jurisdiction to evaluate the potential impacts of a project in terms of VMT. The guidance provided thus far relative to VMT significance criteria is focused on residential, office, and retail uses. For rural land uses, OPR guidance states that fewer options may be available for reducing VMT for projects in rural areas outside of a metropolitan planning organization and significance thresholds may be best determined on a case-by-case basis. In lieu of formally adopted thresholds of significance, VMT thresholds consistent with OPR's final technical guidance for analyzing transportation impacts under CEQA were applied in the analysis presented in this EIR.

The SCAG model was the best available tool to estimate VMT in Los Angeles County. The most current version of the SCAG model, with a base year of 2012 and future year of 2040, was developed for the *2016 SCAG Regional Transportation Plan/ Sustainable Communities Strategy*, April 2016. The model utilizes traffic analysis zones (TAZs) containing socio-economic data reflecting the region's population, employment, and land use development characteristics.

Baseline VMT

Given the differences in VMT trends between the northern and southern planning areas in Los Angeles County, the County has adopted separate North County and South County Baseline VMT benchmarks. The North County Baseline VMT contains the Antelope Valley, Santa Clarita Valley, and Santa Monica Mountains planning areas in the more rural portion of the County. The South County Baseline VMT contains the remaining planning areas in the more urban portion of the County. By establishing a North County and South County Baseline VMT, the County acknowledges the differences in travel behavior in these areas given the land use context and transportation network to represent a more realistic and reasonable picture of VMT activity levels and thus a more appropriate and feasible baseline for VMT analysis. As shown in Table 4.17-12, baseline VMT is higher in the North County (in which Palmdale is located) than in the South County. More details of about this methodology are available in the Traffic Report (Appendix D).

While the baseline VMT trends included in Table 4.17-12 reflect the base year of the SCAG model, baseline conditions for CEQA purposes will be specific to the release date of a project’s notice of preparation. The County’s Total VMT per Service Population threshold is independent of (and not necessarily a total of) Residential VMT per Capita and Employment per Employee.

Table 4.17-12 Cumulative Vehicle Miles Traveled Thresholds

Baseline Area	Total VMT Thresholds for North and South County	Residential VMT per Capita	Employment VMT per Employee
North County	43.1	22.3	19.0
South County	31.1	12.7	18.4

Source: Transportation Impact Analysis Guidelines, Los Angeles County Public Works, July 23,2020

VMT Analysis Travel Demand Model Scenario Descriptions

The Palmdale General Plan (Plan) anticipates that the Planning Area will grow in population, households and employment, and work toward a goal of being a self-contained community in the Antelope Valley region of northern Los Angeles County. For the Traffic Report, the SCAG RTP/SCS Travel Demand Model (SCAG model) was run through all four steps of the SCAG model for the following scenarios:

- **2017 SCAG:** This model run is based on the 2017 model forecast year assumptions using the 2016 RTP/SCS model directly without any modifications.
- **2017 Existing:** The 2017 SCAG model forecast year is used and the land use in the Palmdale SOI (Planning Area) is modified with land use obtained from the City of Palmdale. The employment is updated for several zones to account for Plant 42, which is not in the employment forecasts.
- **2040 SCAG:** This model run is based on the 2040 model forecast year assumptions using the 2016 RTP/SCS model directly without any modifications.
- **2045 Base:** The 2040 SCAG model forecast year is used and the land use in the Palmdale City limits were modified to reflect updated assumptions. The 2045 Base scenario is developed by updating the 2040 SCAG land use within the Planning Area with land use obtained from the City of Palmdale. The employment is updated for a few zones to account for Plant 42, which was not in the employment forecasts. The land use updates are made to all the zones within the Planning Area to reflect updated socioeconomic data forecasts.
- **2045 Preferred Plan:** The 2040 SCAG model forecast year is used and the land use in the Palmdale City limits are modified to reflect the final 2045 Preferred Plan scenario assumptions. The 2045 Preferred Plan scenario are updated with revised socioeconomic data forecasts which are conservative in nature. Land use updates are made to all the zones within the Planning Area to reflect updated socioeconomic data forecasts.

Project and Cumulative Impacts

Threshold 1: Would the Plan conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Impact T-1 THE PLAN WOULD NOT CONFLICT WITH A PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING THE CIRCULATION SYSTEM, INCLUDING TRANSIT, ROADWAY, BICYCLE, AND PEDESTRIAN FACILITIES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Mobility Element of the Plan provides a comprehensive system of bicycle lanes, trails, and pathways to enhance pedestrian, transit, and bicycle and pedestrian connectivity in the Planning Area. Additionally, the Mobility Element identifies a series of Goals and Policies to ensure these facilities' integrity and service levels are maintained.

The following Plan policies and actions relate to pedestrian, transit, and bicycle infrastructure:

- **Goal TM-1: Build and maintain a transportation system that is safe and comfortable for travelers of all modes regardless of age or ability.**
 - **Policy TM-1.1: Roadway design.** Design and maintain the public right-of-way through a complete streets approach that facilitates safe, comfortable, and efficient travel for all roadway users.
 - **Policy TM-1.2: Modal conflicts.** Use a systemic safety approach to proactively identify opportunities to improve safety where conflicts between users exist.
 - **Policy TM-1.3: Network gaps.** Identify and program mitigation measures for gaps and deficiencies in the transportation system to accommodate each major transportation mode.
- **Goal TM-2: Build and maintain a transportation system that accommodates future growth and maintains transportation networks for all modes.**
 - **Policy TM-2.1: Roadway classification.** Classify streets based on their modal purpose and land use context.
 - **Policy TM-2.2: Multimodal travel.** Prioritize safety, operations, and comfort for active and transit modes on streets that have been identified as part of the multimodal network.
 - **Policy TM-2.3: Intersection Design.** Prioritize safety and mobility for non-motorized modes in all intersection designs.
 - **Policy TM-2.4: Network connectivity.** Prioritize multimodal infrastructure that connects existing development with future infill development areas (i.e., gap closure projects).
 - **Policy TM-2.5: Multimodal comfort.** Prioritize quality of multimodal facilities with respect to a user's experience of stress, connectivity, and safety for streets with a non-automobile priority, and ensure the appropriate balance with vehicular operations.
- **Goal TM-3: Build and maintain a transportation system that provides affordable, equitable, and efficient access to employment centers and essential services.**
 - **Policy TM-3.1: Transit reliability.** Make public transit a convenient and reliable option for daily trip making on a local and regional basis.
 - **Policy TM-3.2: Transit access.** Encourage investments and Capital Projects that reduce first/last-mile barriers to transit stops.

- **Policy TM-3.4: Transit coordination.** Work with AVTA to enhance the deployment of fixed-route and flex-route transit services, including increased frequency and service spans.
- **Policy TM-3.5: Regional rail.** Work with Metrolink to increase the frequency of on-peak services and later service hours.
- **Policy TM-3.6: Transit information.** Work with transit providers to improve the delivery of transit service availability and real-time information in an easy, dependable, and accessible means.
- **Policy TM-3.7: Commute trip reduction.** Work with large employers to implement programs that expand access to non-drive alone commute options for all commuters, including hourly staff and contract workers.
- **Policy TM-3.8: Multimodal Station.** Maximize access to downtown via transit and other modes through the Palmdale Transportation Center and future relocation to accommodate a station for high-speed rail.
- **Goal TM-5: Build and maintain a transportation system that fosters a more active and vibrant downtown.**
 - **Policy TM-5.1: Public space.** Encourage wider sidewalks and plazas on downtown streets to enhance placemaking, improve public safety, and support local businesses.
 - **Policy TM-5.2: Parking supply.** Promote and support creative and flexible approaches to parking, including maximizing use of existing public supply and sharing between uses to create a “park once environment.”
 - **Policy TM-5.3: Walkability.** Enhance the safety and comfort of existing pedestrian street crossings and reduce the distance between crossings.
 - **Policy TM-5.4: Streetscaping.** Implement streetscape design that improves the pedestrian environment and appearance of downtown corridors.
 - **Policy TM-5.5: Secure bicycle parking.** Install secure short- and long-term bicycle parking near key destinations, civic buildings, and transit facilities.
- **Goal TM-6: Build and maintain a transportation system that leverages the City’s natural setting and reduces impacts to the environment.**
 - **Policy TM-6.2: Multimodal development.** Encourage the development of dense, mixed-use, pedestrian-oriented land uses that link affordable housing options to daily needs.
 - **Policy TM-6.3: Transportation demand management.** Promote trip reduction strategies, including telecommuting, through land-use decisions and TDM programming strategies.
- **Goal TM-7: Proactively prepare for the future, ensuring that implementation of transportation innovations and regional projects align with the City’s vision.**
 - **Policy TM-7.7: High-speed rail.** Consider the location of a future California High Speed Rail station and right-of-way in long term planning efforts and investment prioritization.

Mobility Element Goals 1, 2, 3, 4, 5, 6, and 7 and the policies therein would create and improve pedestrian, transit, and bicycle infrastructure. The Mobility Element also focuses on providing Mobility Hubs and First Mile/Last Mile Connections for the city and improving pedestrian, transit, and bicycle connectivity throughout the community. By implementing the Plan, impacts on pedestrian, transit, and bicycle facilities would be reduced to a less than significant level.

Mitigation Measures

Impacts would be less than significant. Therefore, mitigation is not required.

Threshold 2: Would the Plan conflict or be inconsistent with CEQA Guidelines Section 15064.3 subdivision(b)?

Impact T-2 THE PLAN WOULD BE CONSISTENT WITH CEQA GUIDELINES SECTION 15064.3(B). THE PLAN HAS THE LEAST SIGNIFICANT VMT IMPACT OF ALL THE SCENARIOS, WHERE SOCIO-ECONOMIC DATA WERE EVALUATED AND PLACED IN THE OPTIMUM LOCATIONS FOR SMART GROWTH CONSIDERATION. NO SIGNIFICANT IMPACTS WOULD OCCUR.

Analysis of VMT for the various scenarios are shown in Table 4.17-13, which compares the Baseline VMT threshold criteria for the North County region to total VMT for service population for the different Plan scenarios analyzed in the Traffic Report. The Plan scenarios are well below the North County target of 35.9, which is a 16.8 percent reduction from the baseline VMT. The 2045 Preferred Plan (the proposed Plan) has the least significant impact of all the scenarios.

Table 4.17-13 Baseline VMT Thresholds—Total VMT per Service Population

	2017 SCAG	2017 Existing	2040 SCAG	2045 Base	2045 Preferred Plan
Total VMT for service population from the model scenarios *	35.4	34.3	32.5	30.6	27.0
VMT impact criteria threshold result	Pass	Pass	Pass	Pass	Pass

Note: North County baseline VMT for total service population is 43.1 as shown in Table 4.17-12.

*A 16.8% decrease from the baseline VMT amounts to 35.9 as recommended by the Los Angeles County Public Works *Transportation Impact Analysis Guidelines*.

The VMT reported in Table 4.17-14 is used for computing the total VMT per service population generated by trips between the Planning Area and other areas of the SCAG region. This table also compares the Baseline VMT threshold criteria for the North County region to the Preferred Plan scenario (the Plan). The Plan scenarios shown in Table 4.17-13 are well below the North County targets of 35.9, which is a 16.8 percent reduction from the baseline VMT. Therefore, the Plan would have no impact, or even a beneficial impact, related to VMT.

Table 4.17-14 All Trips and VMT Statistics

All Trip Purposes—Planning Area	2017 Existing	2045 Base	2045 Preferred Plan
Total service population	237,989	307,600	300,496
VMT (zone-based)	8,153,876	9,424,251	8,111,684
Total trips per capita	2.70	2.52	2.50
Total trips per employee	10.30	9.04	7.54
Total VMT per service population	34.30	30.60	27.00
All trips—average trip length	11.87	11.56	10.86

For all the reasons discussed above, the Plan (2045 Preferred Plan) would have no VMT impact and would not conflict or be inconsistent with CEQA Guidelines Section 15064.3 subdivision(b). No mitigations are necessary.

Mitigation Measures

There would be no impact. Therefore, mitigation would not be required.

Threshold 3: Would the Plan substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

Impact T-3 THROUGH IMPLEMENTATION OF PLAN POLICIES AND ACTIONS, THE PLAN WOULD HELP ENSURE SAFE AND EFFICIENT MOVEMENT FOR ALL MODES OF TRAVEL AND WOULD THEREFORE NOT SUBSTANTIALLY INCREASE HAZARDS DUE TO A DESIGN FEATURE (E.G., SHARP CURVES OR DANGEROUS INTERSECTIONS) OR INCOMPATIBLE USES (E.G. FARM EQUIPMENT). THIS WOULD BE A LESS THAN SIGNIFICANT IMPACT.

The Plan was developed to minimize conflicts between incompatible uses. The Plan has policies and actions that aim to create safe and efficient movement for all modes of travel, including the following:

- **Goal TM-1: Build and maintain a transportation system that is safe and comfortable for travelers of all modes regardless of age or ability.**
 - **Policy TM-1.1: Roadway design.** Design and maintain the public right-of-way through a complete streets approach that facilitates safe, comfortable, and efficient travel for all roadway users.
 - **Policy TM-1.2: Modal conflicts.** Use a systemic safety approach to proactively identify opportunities to improve safety where conflicts between users exist.
 - **Policy TM-1.3: Network gaps.** Identify and program mitigation measures for gaps and deficiencies in the transportation system to accommodate each major transportation mode.

- **Goal TM-2: Build and maintain a transportation system that accommodates future growth and maintains transportation networks for all modes.**
 - **Policy TM-2.1: Roadway classification.** Classify streets based on their modal purpose and land use context.
 - **Policy TM-2.2: Multimodal travel.** Prioritize safety, operations, and comfort for active and transit modes on streets that have been identified as part of the multimodal network.
 - **Policy TM-2.3: Intersection Design.** Prioritize safety and mobility for non-motorized modes in all intersection designs.
 - **Policy TM-2.4: Network connectivity.** Prioritize multimodal infrastructure that connects existing development with future infill development areas (i.e., gap closure projects).
 - **Policy TM-2.5: Multimodal comfort.** Prioritize quality of multimodal facilities with respect to a user's experience of stress, connectivity, and safety for streets with a non-automobile priority, and ensure the appropriate balance with vehicular operations.

- **Goal TM-5: Build and maintain a transportation system that fosters a more active and vibrant downtown.**
 - **Policy TM-5.1: Public space.** Encourage wider sidewalks and plazas on downtown streets to enhance placemaking, improve public safety, and support local businesses.
 - **Policy TM-5.3: Walkability.** Enhance the safety and comfort of existing pedestrian street crossings and reduce the distance between crossings.

- **Policy TM-5.4: Streetscaping.** Implement streetscape design that improves the pedestrian environment and appearance of downtown corridors.
- **Policy TM-5.5: Secure bicycle parking.** Install secure short- and long-term bicycle parking near key destinations, civic buildings, and transit facilities.

The Plan goals and policies above would help minimize conflicts between incompatible transportation uses and create a safe and efficient movement for all modes of travel. This policy in addition to the others listed above would ensure the Plan would not substantially increase hazards due to design features or incompatible uses, and impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant. Therefore, mitigation would not be required.

Threshold 4: Would the Plan result in inadequate emergency access?

Impact T-4 THE PLAN WOULD NOT RESULT IN INADEQUATE EMERGENCY ACCESS BECAUSE PLAN GOALS AND POLICIES WOULD ENCOURAGE EASE OF CONNECTIVITY AND EASE OF MOBILITY THROUGHOUT THE PLANNING AREA AND EMERGENCY ACCESS WOULD BE IMPROVED. THERE WOULD BE NO IMPACT.

The Safety Element of the Plan finds evacuation and emergency access in the Planning Area is not a major concern due to the many roadways throughout the Planning Area. Most residential developments throughout the Planning Area have at least two emergency exits. However, a few neighborhoods located in the Fire Hazard Severity Zones have only one way in and out of the neighborhood. More information regarding these neighborhoods is available in the Safety Element of the Plan. The Plan would not increase the amount of development allowed in these areas so it would not have an impact on emergency access in these areas. Furthermore, the Plan's Mobility Element would improve connectivity and mobility throughout the Planning Area through implementation of the following goals and policies and which are also directly or indirectly related to emergency access:

- **Goal TM-1: Build and maintain a transportation system that is safe and comfortable for travelers of all modes regardless of age or ability.**
 - **Policy TM-1.1: Roadway design.** Design and maintain the public right-of-way through a complete streets approach that facilitates safe, comfortable, and efficient travel for all roadway users.
 - **Policy TM-1.2: Modal conflicts.** Use a systemic safety approach to proactively identify opportunities to improve safety where conflicts between users exist.
- **Goal TM-2: Build and maintain a transportation system that accommodates future growth and maintains transportation networks for all modes.**
 - **Policy TM-2.1: Roadway classification.** Classify streets based on their modal purpose and land use context.
 - **Policy TM-2.2: Multimodal travel.** Prioritize safety, operations, and comfort for active and transit modes on streets that have been identified as part of the multimodal network.

These goals and policies, and the improved connectivity and mobility they would help create, would help improve emergency access throughout the Planning Area. Plan implementation would improve

emergency access, so the Plan would not result in inadequate emergency access and there would be no impact.

Mitigation Measures

There would be no impact. Therefore, mitigation would not be required.

4.17.4 Cumulative Impacts

The geographic scope of potential cumulative transportation impacts is the Planning Area and surrounding region. This geographic scope is appropriate for evaluating transportation impacts because it includes the regional and local transportation network that would primarily be impacted by reasonably foreseeable development associated with the Plan. The cumulative impacts analysis estimates the change in total VMT resulting from these land use changes and is represented through the metric of total VMT per service population. In the Traffic Report, Parsons Engineering modeled this traffic for 2040 by using the SCAG model for the preferred plan (the Plan) which incorporates cumulative development and growth throughout the SCAG region. The forecast for the Plan is analyzed in this EIR and thus considers cumulative impacts in Impacts T-1 through T-4. Based on the analysis in the Traffic Report and summarized above, the Plan does not make a substantial contribution to, or result in, a significant cumulative transportation impact.

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4.18 Tribal Cultural Resources

This section analyzes the potential impacts of the Plan on tribal cultural resources (TCRs).

4.18.1 Environmental Setting

The analysis considers the value of a resource to tribal cultural tradition, heritage, and identity, in order to establish potential mitigation options for TCRs and to recognize that California Native American tribes have expertise concerning their tribal histories and practices.

Ethnographic Setting

The Planning Area is within a transitional zone that was occupied by multiple cultural groups including the Kitanemuk, Serrano, and Tataviam (cf., Bean and Smith 1978; Blackburn and Bean 1978; Kroeber 1925; Sutton 1988). All of these groups are more closely associated with portions of the surrounding mountains – Kitanemuk to the north, Serrano to the southeast, and Tataviam to the southwest – but each of them likely visited the Antelope Valley floor as part of their resource exploitation strategies. Ethnographic boundaries in the Mojave Desert are loosely defined, owing to the highly mobile nature of desert settlement and resource extraction strategies, as well as the variety of interpretations presented by previous researchers. The following sections provide brief overviews of the three groups likely to have ethnographically used the Planning Area.

Kitanemuk

The Kitanemuk are one of the least-understood ethnographic groups in California, despite being considered by researchers as the primary aboriginal inhabitants of Antelope Valley (Sutton 1987, 1988). Kitanemuk territory extended from the Tehachapi Mountains at the northwestern edge of the Antelope Valley southeast to beyond Rosamond Lake north of Palmdale, although their populations were most dense in the mountains at the southern end of the San Joaquin Valley (Blackburn and Bean 1978:564; Kroeber 1925:611). The Kitanemuk were primarily mountain dwellers who lived in semi-permanent village sites that functioned as year-round base camps; during the late winter and early spring, expeditions ventured onto the desert floor in pursuit of available seasonal resources (Earle 1997).

Kroeber (1925:611) noted that the Kitanemuk were a subdivision of the Serrano, and thus spoke a language of the Takic family that was similar to dialects spoken by groups living as far south and east as Yucca Valley and Twentynine Palms. Although some aspects of Kitanemuk social organization are similar to those of other Takic speaking groups, Blackburn and Bean (1978:564) argue that Kitanemuk ritual, mythology, and shamanism were most strongly shaped by their neighbors to the north (Kawaiisu and Tubatulabal) and west (Chumash). The Kitanemuk appear to have enjoyed particularly strong trade ties with coastal and inland Chumash groups (Blackburn and Bean 1978:564; Kroeber 1925:613). Modern-day descendants of the Kitanemuk live at the Tule River Reservation, Porterville, and Tejon Ranch (Four Directions Institute 2007).

Serrano

The Serrano occupied an area in and around the San Bernardino Mountains between approximately 450 and 3,350 meters (1,500-11,000 feet) above mean sea level. Their territory extended west of Cajon Pass, east past Twentynine Palms, north of Victorville, and south to the Yucaipa Valley. The Serrano language is part of the Serran division of a branch of the Takic family of the Uto-Aztecan

linguistic stock (Mithun 2006:539, 543). The two Serrano languages, Kitanemuk and Serrano, are closely related. Kitanemuk lands were northwest of Serrano lands. Serrano was originally spoken by a relatively small group located within the San Bernardino and Sierra Madre mountains, and the term “Serrano” has come to be ethnically defined as the name of the people in the San Bernardino Mountains (Kroeber 1925:611). The Vanyume, who lived along the Mojave River and associated Mojave Desert areas and are also referred to as the Desert Serrano, spoke either a dialect of Serrano or a closely related language (Mithun 2006:543). Year-round habitation tended to be located on the desert floor, at the base of the mountains, and up into the foothills, with all habitation areas requiring year-round water sources (Bean and Smith 1978; Kroeber 1908).

Most Serrano lived in small villages located near water sources (Bean and Smith 1978:571). Houses measuring 12 to 14 feet in diameter were domed and constructed of willow branches and tule thatching and occupied by a single extended family. Many of the villages had a ceremonial house, used both as a religious center and the residence of the lineage leaders. Additional structures within a village might include granaries and a large circular subterranean sweathouse. The sweathouses were typically built along streams or pools. A village was usually composed of at least two lineages. The Serrano were loosely organized along patrilineal lines and associated themselves with one of two exogamous moieties or “clans”—the Wahiyam (coyote) or the Tukum (wildcat) moiety.

The subsistence economy of the Serrano was one of hunting and collecting plant goods, with occasional fishing (Bean and Smith 1978:571). They hunted large and small animals, including mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Plant staples consisted of seeds; acorn nuts of the black oak; piñon nuts; bulbs and tubers; and shoots, blooms, and roots of various plants, including yucca, berries, barrel cacti, and mesquite. The Serrano used fire as a management tool to increase yields of specific plants, particularly chía.

Trade and exchange were important aspects of the Serrano economy. Those living in the lower-elevation, desert floor villages traded foodstuffs with people living in the foothill villages who had access to a different variety of edible resources. In addition to inter-village trade, ritualized communal food procurement events, such as rabbit and deer hunts and piñon, acorn, and mesquite nut-gathering events, integrated the economy and helped distribute resources that were available in different ecozones.

Contact between Serrano and Europeans was relatively minimal prior to the early 1800s. As early as 1790, however, Serrano began to be drawn into mission life (Bean and Vane 2002). More Serrano were relocated to Mission San Gabriel in 1811 after a failed indigenous attack on that mission. Most of the remaining western Serrano were moved to an asistencia built near Redlands in 1819 (Bean and Smith 1978:573).

A smallpox epidemic in the 1860s killed many indigenous southern Californians, including many Serrano (Bean and Vane 2002). Oral history accounts of a massacre in the 1860s at Twentynine Palms may have been part of a larger American military campaign that lasted 32 days (Bean and Vane 2002:10). Surviving Serrano sought shelter at Morongo with their Cahuilla neighbors; Morongo later became a reservation (Bean and Vane 2002). Other survivors followed the Serrano leader Santos Manuel down from the mountains and toward the valley floors and eventually settled what later became the San Manuel Band of Mission Indians Reservation, formally established in 1891.

The Morongo Band of Mission Indians of the Morongo Reservation, established through presidential executive orders in 1877 and 1889, includes both Cahuilla and Serrano members. Established in 1893, the San Manuel Band of Mission Indians Reservation included 84 Serrano tribal members in

2004. Both Morongo and San Manuel are federally recognized tribes. People of both reservations participate in cultural programs to revitalize traditional languages, knowledge, and practices.

Tataviam

Like the Kitenamuk, the Tataviam were not well documented by early ethnographers. However, researchers today generally agree that the Tataviam spoke an Uto-Aztecan language, most likely a Takic language (Hudson 1982). Tataviam territory included the upper Santa Clara River from Piru Creek eastward, extending over the Sawmill Mountains to the southwest edge of the Antelope Valley (King and Blackburn 1978). Their territory was bounded on the west and north by various Chumash groups; on the south by the Tongva (Gabrielino and Fernandeno, though some Tataviam were also identified as Fernandeno because of their association with Mission San Fernando); and to the east by the Kitanemuk and Serrano.

Exogamous marriage was common, with Tataviam intermarrying with Tongva, Chumash, and Kitanemuk neighbors (King and Blackburn 1978). King and Blackburn (1978) hypothesize that the Tataviam relied on yucca as a food source more than their neighbors because of the predominance of large south-facing slopes within their territory. Additional food resources included acorns, sage seeds, berries, small mammals, and deer. Settlement size ranged from 10 to 200 persons, with small settlements often ancillary to large villages. Archaeological evidence from Bower's Cave – located between Newhall and Piru – combined with ethnographic evidence suggest their ritual organization was similar to both the Chumash and Gabrielino, whose lifestyles were distinct from one another. By 1810 the Tataviam were virtually completely “missionized” through baptism at Mission San Fernando.

4.18.2 Regulatory Setting

State

California Register of Historical Resources

A tribal cultural resource could be considered significant if it is eligible for listing in the California Register of Historical Resources (CRHR). As discussed in Section 4.5, *Cultural Resources*, the CRHR helps government agencies identify, evaluate, and protect California's historical resources, and indicates which properties are to be protected from substantial adverse change (Public Resources Code [PRC] Section 5024.1[a]). The CRHR is administered through the State Office of Historic Preservation, which is part of the California State Parks system.

Assembly Bill 52

California Assembly Bill (AB) 52 of 2014, which was enacted on July 1, 2015, expands CEQA by defining a new resource category, “tribal cultural resources.” AB 52 establishes that “a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment” (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074(a) defines “tribal cultural resources” as either of the following:

- (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

- (A) Included or determined to be eligible for inclusion in the CRHR.
 - (B) Included in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).
- (2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code Section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe. (PRC Section 21074[a])

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to “begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.” Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

Senate Bill 18

Senate Bill (SB) 18 recognizes that protection of traditional tribal cultural places is important to all tribes, whether federally recognized or not, and it provides all California Native American tribes with the opportunity to participate in consultation with city and county governments for this purpose (Governor’s Office of Planning and Research [OPR] 2005).

SB 18 establishes responsibilities for local governments to contact, provide notice to, refer plans to, and consult with tribes. The provisions of SB 18 apply only to city and county governments, and not to other public agencies. The following list briefly identifies the contact and notification responsibilities of local governments, in sequential order of their occurrence (OPR 2005):

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government’s jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county’s jurisdiction. The referral must allow a 45 day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.
- Local governments must send notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

Under SB 18, local governments must consult with tribes under two circumstances (OPR 2005):

- On or after March 1, 2005, local governments must consult with tribes that have requested consultation in accordance with Government Code Section 65352.3. The purpose of this consultation is to preserve, or mitigate impacts to, cultural places that may be affected by a general plan or specific plan amendment or adoption.

- On or after March 1, 2005, local governments must consult with tribes before designating open space, if the affected land contains a cultural place and if the affected tribe has requested public notice under Government Code Section 65092. The purpose of this consultation is to protect the identity of the cultural place and to develop treatment with appropriate dignity of the cultural place in any corresponding management plan (Government Code Section 65562.5).

In addition to the notice and consultation requirements outlined above, SB 18 amended Government Code Section 65560 to allow the protection of cultural places in the open space element of the general plan. SB 18 also amended Civil Code Section 815.3 and adds California Native American tribes to the list of entities that can acquire and hold conservation easements. Tribes on the contact list maintained by the NAHC now have the ability to acquire, on terms mutually satisfactory to the tribe and the landowner, conservation easements for the purpose of protecting their cultural places (OPR 2005).

4.18.3 Existing Conditions

Assembly Bill 52 and Senate Bill 18 Consultation

In accordance with AB 52 and SB 18, the City of Palmdale notified the San Fernando Band of Mission Indians, San Manuel Band of Mission Indians, Serrano Nation of Mission Indians, the Fernandefio Tataviam Band of Mission Indians, the Morongo Band of Mission Indians, and the Quechan Tribe of the Fort Yuma Reservation of the Plan update and invited them to participate in consultation. The City of Palmdale prepared and mailed letters on July 1, 2021.

On July 9, 2021 the Quechan Tribe of the Fort Yuma Reservation notified the City that they have no comments on the Plan and defer to other local Tribes. No further consultation or communication occurred.

On July 13, 2021 the San Manuel Band of Mission Indians responded, noting that the Planning Area included Serrano ancestral territory and requesting additional information concerning inclusion of plans for interpretative sites, museums, or other cultural centers in the Plan or references to archaeological or cultural resources. A consultation meeting was held on September 13, 2021. Following the consultation, the City provided background documents for the General Plan and EIR and no further consultation was requested by the San Manuel Band of Mission Indians.

On August 3, 2021 the Fernandefio Tataviam Band of Mission Indians requested consultation to incorporate Tribal perspectives into environmental review and management protocols that are inclusive of Tribes. A consultation meeting was held on September 27, 2021. Following the consultation, the City provided background documents for the General Plan and EIR and no further consultation was requested by the Fernandefio Tataviam Band of Mission Indians.

4.18.4 Impact Analysis

Methodology and Significance Thresholds

As part of the process of identifying Native American cultural resources within or near the Planning Area, the City of Palmdale consulted the NAHC contact list of eight Native American individuals or tribal organizations that may have knowledge of cultural resources in or near the Planning Area. In addition, Assembly Bill (AB) 52 letters for the City (Appendix E) addressed to each of the NAHC-listed contacts were sent on July 1, 2021 inviting tribes to consult with the City of Palmdale on the preparation of the Plan.

According to CEQA Guidelines Appendix G, an impact on Tribal Cultural Resources from the proposed Plan would be significant if the following applies:

- 1) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
 - a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
 - b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Threshold 1: Would the Plan cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
- b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Impact TCR-1 DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY IMPACT UNIDENTIFIED TRIBAL CULTURAL RESOURCES, BUT THESE IMPACTS WOULD BE REDUCED TO A LESS THAN SIGNIFICANT LEVEL WITH INCORPORATION OF MITIGATION MEASURES TCR-1 AND TCR-2.

Effects on tribal cultural resources can only be known once a specific project has been proposed because the effects are highly dependent on both the individual project site conditions and the characteristics of the proposed activity. New TCRs may be identified or established during implementation of the Plan which is expected to occur over many years. The Plan includes policies and implementation actions intended to reduce the impact of new development on tribal resources. These policies and actions include:

- **Goal CON-8: Protect historical and culturally significant resources, which contribute to the community's sense of history.**
 - **Policy CON-8.1: Historic landmark identification.** Identify and recognize historic landmarks from Palmdale's past.
 - **Policy CON-8.4: Preservation in new development.** Require that new development preserve significant historic, paleontological, or archaeological resources.

- **Policy CON-8.5: Tribal consultation.** Conduct Native American consultation consistent with the applicable regulations when new development is proposed in potentially culturally sensitive areas.
- **Policy CON-8.6: Discovery coordination with Tribal groups.** When human remains suspected to be of Native American origin are discovered, coordinate with the Native American Heritage Commission and any local Native American groups to determine the most appropriate course of action.
- **Policy CON-8.7: Cooperation with preservation entities.** Cooperate with private and public entities whose goals are to protect and preserve historic landmarks and important cultural resources.

Therefore, as specific projects are proposed, consultation with tribes under AB 52 would occur to determine if any TCRs may be impacted by specific projects. If TCRs are identified during AB 52 consultation, impacts to any such TCRs would be potentially significant unless mitigation is incorporated. The policy in the conservation element is deliberately broad and the following mitigation measures are intended to provide specificity in regard to evaluation of TCRs and mitigation-specific actions (including thresholds) that should be applied, which provide more detail to the agency regarding future actions.

Mitigation Measures

TCR-1 Native American Monitoring

Prior to the issuance of a grading permit for a project under the Plan that has the potential to impact a tribal cultural resource onsite, the City of Palmdale (City) shall ensure that the project applicant seeks the services of a tribal monitor(s) approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities. This provision shall be included on the proposed project contractor's plans and specifications. Ground-disturbing activities are defined by the relevant tribes as activities that may include but are not limited to pavement removal, pot-holing or using an auger, grubbing, tree removals, borings, grading, excavation, drilling, and/or trenching within the project area. The project site shall be made accessible to the monitor(s), provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance.

If evidence of tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource in consultation with a qualified archaeologist. The recovery process shall not unreasonably delay the construction process and must be carried out consistent with CEQA and local regulations.

Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether or not a monitor is present on site. The monitor shall complete daily monitoring logs that will provide descriptions of the day's activities and general observations and whether the Native American monitor believes they observed a TCR and what action they took. The on-site monitoring shall end when the project site grading and excavation activities are completed or prior to the completion if the monitor has indicated that the site has a low potential for tribal cultural resources.

TCR-2 Unanticipated Discovery of Tribal Cultural Resources

Upon discovery of any tribal cultural resources, the Native American monitor has the ability to halt construction activities in the immediate vicinity (within 50 feet) of the find until the find can be assessed. All tribal cultural resources unearthed during project construction activities shall be evaluated by the Native American monitor approved by the relevant tribes and a qualified archaeologist. Construction work shall be permitted to continue on other parts of the project site while evaluation and, if necessary, additional investigations and/or preservation measures take place (CEQA Guidelines Section 15064.5(f)). If the resources are Native American in origin, the relevant tribes shall coordinate with the landowner regarding treatment and curation of these resources. If a resource is determined by the qualified archaeologist to constitute a “historical resource” or “unique archaeological resource,” time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available through coordination between the relevant tribes and the project applicant. The treatment plan established for the resources shall be in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5(f) for historical resources and Public Resources Code (PRC) Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.

Significance After Mitigation

Implementation of mitigation measures CUL-2 through CUL-8 in Section 4.5 *Cultural Resources*, and TCR-1 and TCR-2 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery archaeological resources that may be impacted by future projects in a timely manner.

4.18.5 Cumulative Analysis

Tribal cultural resources are regionally specific and determined by the consulting tribes. To ensure protection of tribal cultural resources, tribal cultural resource consultation in accordance with AB 52 would occur for project-specific activities that have the potential to affect tribal cultural resources when a project is identified. Cumulative impacts to tribal cultural resources would be less than significant with adherence to the General Plan policies addressing tribal resources listed in impact TCR-1 and incorporation of the mitigation measures TCR-1 and TCR-2, which apply to future projects carried out under the Plan.

4.19 Utilities and Service Systems

This section evaluates potential Plan impacts to water, wastewater, and solid waste service. Section 4.10, *Hydrology and Water Quality*, addresses potential impacts to storm drain infrastructure and surface water quality.

4.19.1 Environmental Setting

Water Supply

The City is part of the Palmdale Water District (PWD or District), which services approximately 187 square miles in northeastern Los Angeles County. A small, northwestern portion of the Planning Area is also served by Los Angeles County Water District No. 40 (LACWD 40), which purchases water from Antelope Valley-East Kern Water Agency (AVEK). PWD serves the central and southern portions of Palmdale while LACWD 40 serves areas both east and west of State Route 14. PWD provides retail and wholesale water supply services to the City and more than 30 unincorporated areas throughout the Antelope Valley. Residents receive their water from the California Aqueduct, the Littlerock Dam, and/or groundwater wells (Palmdale Water District 2017a).

Other water suppliers in and around Palmdale include Quartz Hill Water District, Littlerock Creek Irrigation District, various small mutual water companies, and private wells. These suppliers generally serve small portions of the City or areas adjacent to city limits.

Groundwater

According to the California Department of Water Resources (DWR), the Antelope Valley Groundwater Basin encompasses 1,580 square miles of Los Angeles County, Kern County, and, less prominently, San Bernardino County, and has a storage capacity of approximately 70,000,000-acre feet (DWR 2004). The Antelope Valley Groundwater Basin is comprised of two primary aquifers: (1) the upper (principal) aquifer and (2) the lower (deep) aquifer. The U.S. Geological Survey has identified a series of subbasins in the Antelope Valley Groundwater Basin. The Planning Area is serviced by PWD and LACWD 40. PWD's service area overlies the Lancaster, Buttes, and Pearland groundwater subbasins. LACWD 40's service area overlies West Antelope, Finger Buttes, Neenach, Willow Springs, Oak Creek, Gloster, Chaffee, Peerless, and North Muroc, in addition to PWD's three subbasins (LACWD 40 2021). The boundaries between the three subbasins are determined by discontinuity or by steepening of the groundwater surface as measured in wells (PWD 2020).

Groundwater has accounted for 35 percent of PWD water supply since 2016. PWD has 22 active groundwater wells drawing from the Antelope Valley Aquifer (PWD 2020). PWD is temporarily entitled to a share of a federal groundwater right, of up to 1,450 AFY until 2025. Additionally, PDW will begin receiving a groundwater production right of 2,770 AFY starting in 2023. PDW has produced an average of 6,380-acre feet of groundwater per year since 2015. LACWD 40 pumped a total of 14,266 AFY from the Antelope Valley Groundwater Basin in 2020, and average of 15,550 AFY per year between 2016 and 2020 (LACWD 40 2021).

The Lancaster subbasin is in the center of the Antelope Valley Groundwater Basin with its southernmost portions lying within PWD service area. The Buttes subbasin is located southeast of the Lancaster subbasin where a small portion underlies PWD service area. PWD does not currently have any wells or pump water from the Buttes subbasin. The Pearland subbasin is also located southeast of the Lancaster Subbasin where the northern portion of the subbasin lies within PWD

service area. PWD operates 10 wells in the Pearland subbasin, with a pumping capability of 3,500 gallons per minute (gpm). Additionally, PWD operates 10 wells in the Lancaster subbasin, with a pumping capability of approximately 12,500 gpm (PWD 2020).

The San Andreas rift zone, also known as the San Andreas Fault, has two general groundwater bearing areas. These areas generally lie east and west of the intersection of Pearblossom Highway and Barrel Springs Road in the south-central part of the Planning Area. While the area to the east has poor groundwater production potential, the area to the west has greater groundwater bearing deposits. PWD has four wells in the San Andreas rift zone, two in the western area and two in the eastern area (PWD 2020).

PWD and LACWD 40 are involved in the adjudication of groundwater rights for the Antelope Valley Groundwater Basin that began in 2004. The adjudication allows groundwater banking between entities and allows PWD and LACWD 40 to take any additional groundwater banked. In late 2015, PWD and LACWD 40 as well as the majority of parties involved, agreed to a stipulated judgment for the adjudication of the Antelope Valley Groundwater Basin. Per the judgment, PWD is receiving a groundwater production right of 2,770 AFY. Prior to the judgment, PWD had an unquantified right to pump water for beneficial use and assumed projected pumping volumes of up to 12,000 AFY based on pumping capacity. In addition to its groundwater production right, PWD is entitled to a share of the unused federal reserved right. Currently, the average amount of PWD share of unused Federal Reserved Water Right Production is 1,450 AFY. PWD is also entitled to a pumping allocation for return flow credit of imported water used. Based on the analyses conducted in planning reports return flow credits are projected to range between approximately 4,900 AFY and 6,000 AFY through 2040 (PWD 2020). LACWD 40 was given the right to pump 6,789 AFY, use approximately 3,500 AFY of unused federal reserve rights, and return flows equivalent to 39 percent of LACWD 40's five-year average of purchased SWP water supply (39 percent of 26,657 AFY or 10,400 AFY). LACWD 40 also has the right to lease 2,600 AFY of groundwater rights from AVEK. Overall, LACWD 40's groundwater rights total of 23,289 AFY (LACWD 40 2021).

Antelope Valley Basin is exempt from the requirements of the Sustainable Groundwater Management Act (SGMA), which was passed by the State of California in 2014 and sets forth a statewide framework to help protect groundwater resources over the long-term (DWR 2022). The PWD has not adopted a groundwater management plan, and no regional groundwater management plan currently exists for the Basin (PWD 2020).

The DWR's Bulletin 118, California's Groundwater (2019), does not characterize the groundwater basin as over drafted, however it was deemed a 'low-priority' basin by DWR (PWD 2020).

Surface Water

The Littlerock Dam and Reservoir, just south of the Planning Area in the San Gabriel Mountains, serves as PWD local surface water supply. The Littlerock Dam and Reservoir receives water from natural runoff of the San Gabriel mountains, and intercepts flows from Littlerock and Santiago Canyons. The primary tributaries that supply water to the PDW service area are the Littlerock and Big Rock Creeks, which flow north from the San Gabriel Mountains (PWD 2020). The 65 square mile watershed is in the Angeles National Forest. The Littlerock Dam has a capacity of approximately 3,500-acre feet (PWD 2020).

Imported Water

The City obtains imported surface water from northern California, transported via the State Water Project (SWP) into Lake Palmdale. PWD began receiving SWP water in 1985 from the East Branch of the California Aqueduct, which runs through the District's service area. The imported water mixes with water from Littlerock Reservoir in Lake Palmdale prior to being treated. The District has a SWP contract Table A Amount (the maximum annual amount of water they can receive) for 21,300 AFY, but the delivered volume is typically lower in drought years. In the last ten years, PWD has received between 41 percent and 77 percent of its Table A Amount (PWD 2016).

LACWD 40 purchases water from AVEK, which receives surface water from the State Water Project (SWP) (LACWD 40 2021). AVEK has a maximum of 144,844 acre feet per year (AFY) available from the SWP each year, of which they allocate about 58 percent (LACWD 40 2021).

Distribution

The District's distribution system is divided into seven main pressure zones, which contain the Littlerock Dam and Reservoir, Lake Palmdale, groundwater wells, and the SWP service connection, which together comprise the City's total water supply. PWD operates 23 active wells, 39 booster wells, and 17 booster pump stations, which source an average of 10,300 AFY of groundwater for the District's service area. Imported water from the SWP connection and surface water from the Littlerock Reservoir are combined in Lake Palmdale and fed into the Leslie O. Carter Water Treatment Plant, the District's only water treatment plant. The plant can purify up to 30 million gallons of water per day (mgd). Treated water is conveyed throughout the City and to unincorporated areas via 414 miles of distribution pipelines, varying in diameter from 4 to 42 inches. 21 storage reservoirs can store up to 50 million gallons of water (Palmdale Water District 2016).

Recycled Water

In 2013, the City of Palmdale and PWD created the Palmdale Recycled Water Authority (PRWA). PRWA studies, distributes, and manages recycled water resources created by two sanitation districts in Los Angeles County and uses recycled water for irrigation and groundwater recharge. PRWA also finances the acquisition, construction, and installation of recycled water facilities, irrigation systems, and recharge projects in and around Palmdale. PRWA currently manages the Palmdale Groundwater Recharge and Recovery Project, which stores underground recycled water from the sanitation districts and untreated water from the California Aqueduct (Palmdale Water District 2019).

Wastewater

The Palmdale Utilities Services Division (PUSD or Division) manages the City's wastewater discharge and sewage system. The Division prepared a Sewer System Management Plan (SSMP) in 2014 to comply with the State Water Resources Control Board (SWRCB) Order 2006-0003: Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. The City owns, operates, and maintains a wastewater collection system originally managed by the Los Angeles County Department of Public Works Sewer Maintenance District. PUSD manages wastewater collection for the City's entire service area, which encompasses approximately 105 square miles. Unincorporated areas surrounding Palmdale fall under Los Angeles County standards. The City's sewer system includes 396 miles of pipeline and 8,441 manholes, most of which are under 30 years in structure age. Most of the collected wastewater flows to the Palmdale Water Reclamation Plant (PWRP), which is managed in Los Angeles County Sanitation District #20 and can reclaim up to 12 mgd. Some

wastewater is sent to the Lancaster Water Reclamation Plant, located approximately 16 miles north of the City (City of Palmdale, 2014).

The Palmdale Water Reclamation Plant provides primary, secondary, and tertiary water treatment with a design capacity of 12 mgd. Treatment includes preliminary mechanically cleaned bar screens, aerated grit chambers, and settling tanks; secondary anaerobic digester, air compressors, and clarifier tanks; and tertiary chemical treatments with aqueous ammonia, sodium hypochlorite, and chlorine contact tanks. The fully treated water is then reused in municipal and agricultural settings or stored in recycled water reservoirs (Los Angeles County 2021).

Stormwater

The City of Palmdale Department of Public Works maintains the City's stormwater system. The Department operates closed conduits, open channels, drainage basins, dry wells, and two dry creeks as natural stormwater conveyances. Because of the City's arid climate, the stormwater system remains dry for most of the year and only captures stormwater during rainy periods (City of Palmdale 2003).

Solid Waste

The City contracts with Waste Management to provide complete residential and commercial trash, organic waste processing, and recycling services, including residential curbside trash, recycling and yard waste collection, pickup of bulky items, and electronic waste pickup, for all single and multi-family homes, as well as businesses (City of Palmdale 2021a).

Like all municipalities, Palmdale must meet the solid waste diversion mandates established by the California Integrated Waste Management Act under State Assembly Bill 939 (AB 939) in 1989. AB 939 mandates that all cities reduce annual waste per capita by 50 percent. Palmdale is working toward compliance with all state recycling requirements, including legislation that imposes Mandatory Commercial Recycling on all businesses that generate at least four cubic yards of trash per week and all multi-family dwellings that have 5 units or more. City waste haulers send all residential and commercial solid waste to the Antelope Valley Recycling and Disposal Facility, located on the west side of the City approximately one mile from the Antelope Valley Freeway.

The City also complies with AB 1826, California's Mandatory Commercial Organics Recycling law, which requires businesses and multi-family dwellings to recycle their organic waste. Organic waste includes food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled waste that is mixed with food waste. Through the City, Waste Management offers organic waste recycling services for both businesses and multi-family dwellings (City of Palmdale 2018).

According to the California Department of Resources Recycling and Recovery's (CalRecycle's) Disposal Reporting System, in the fourth quarter of 2019, solid waste generated in Palmdale was disposed of at eight different landfills, recycling centers, and waste recovery and conversion facilities, as summarized below.

Table 4.19-1 City Service Landfill Capacity

Solid Waste Facility	Tonnage from Palmdale	Total Facility Capacity (cubic yards)	Percent Capacity Remaining	Ceased Operation Year
Antelope Valley Public Landfill	26,416.63	30,200,000	59%	2044
Lancaster Landfill and Recycling Center	866.77	27,700,000	52%	2044
McKittrick Waste Treatment Site	680.57	5,474,900	14%	2059
Simi Valley Landfill and Recycling Center	261.37	119,600,000	69%	2063
El Sobrante Landfill	41.94	209,910,000	69%	2051
Sunshine Canyon City/County Landfill	11.59	140,900,000	55%	2037
Chiquita Canyon Sanitary Landfill	4.70	110,366,000	55%	2047
Victorville Sanitary Landfill	0.35	93,400,000	85%	2047
Total	28,283.92			

CalRecycle SWIS Facility/Site Activity Details (CalRecycle 2021b)

Sources: CalRecycle Transported Solid Waste – Palmdale (CalRecycle 2021a)

- **Antelope Valley Public Landfill**, also known as the Antelope Valley Recycling and Disposal Facility, is located at 1200 W. City Ranch Road, Palmdale, CA. It encompasses 185 acres of land with 125 acres permitted for waste disposal. The facility accepts municipal solid waste, asphalt/concrete, dirt, wood waste and green waste, construction and demolition waste, discarded appliances, tires, and electronic waste (Waste Management 2021a).
- **Lancaster Landfill and Recycling Center** is located at 600 East Avenue F, Lancaster, CA, covering 276 acres of land with 209 acres permitted for waste disposal. The facility accepts municipal solid waste, asphalt/concrete, dirt, wood waste and green waste, construction and demolition waste, discarded appliances, tires, and electronic waste (Waste Management 2021b).
- **McKittrick Waste Treatment Site** is located at 56533 Highway 58 West, McKittrick, CA. The site accepts asbestos (non-friable), auto-shredder fluff, construction and demolition waste, drum management, and industrial and special waste (Waste Management 2021c).
- **Simi Valley Landfill and Recycling Center** is located at 2801 Madera Road, Simi Valley, CA. The facility is permitted to accept up to 3,000 tons of refuse and 6,250 tons of recyclable materials per day. On average, the facility recycles approximately 25% of all tons accepted. The landfill accepts municipal solid waste, appliances, tires, construction and demolition waste, dirt, asphalt/concrete, mixed inerts, and wood waste and green waste (Waste Management 2021d).
- **El Sobrante Landfill** is located at 10910 Dawson Canyon Road, Corona, CA. The facility can process up to 70,000 tons of waste per week and primarily serves Riverside County. The site also is managed as a wildlife habitat (Waste Management 2021e).
- **Sunshine Canyon City/County Landfill** is located on Sunshine Canyon Road in Sylmar, CA. Managed by Republic Services, this facility has 363 acres permitted for disposal and receives approximately 9,000 tons of waste per day. The site also handles about one-third of the daily waste of Los Angeles County (Sunshine Canyon Landfill, 2021).
- **Chiquita Canyon Sanitary Landfill** is located at 29201 Henry Mayo Drive, Castaic, CA. This landfill, owned and operated by Waste Connections, is 639 acres and accepts municipal solid waste, residential and commercial waste, yard waste, green waste, fill soil, and construction and demolition waste (Chiquita Canyon 2021).

- **Victorville Sanitary Landfill** is located at 18600 Stoddard Wells Road, Victorville, CA. The facility is managed by the County of San Bernadino's Department of Public Works (San Bernadino County 2021).

Recyclables are collected in separate containers in Palmdale at single family residences, some multifamily residences, businesses, and agencies. Waste Management, the City's waste hauler, achieves most of its waste diversion through mixed waste processing at materials recovery facilities. In accordance with AB 939, recyclables are sorted, and the residual waste is transferred to the landfill. In 2014 the City of Palmdale disposed of 40,768 tons of residential waste and 43,942 tons of commercial waste. Palmdale's waste generation is taken into account in the County of Los Angeles Countywide Integrated Waste Management Plan, which projects future waste generation and disposal facility needs.

Electricity

Southern California Edison (SCE) provides electricity to the City of Palmdale and surrounding areas. In 2020, SCE generated approximately 83,533 gigawatts of electricity (California Energy Commission 2020). As of 2019, approximately 35 percent of SCE's power mix was sourced from approximately 35 percent renewable resources, including solar, wind, eligible hydroelectric, and geothermal. Approximately 32 percent of SCE's power mix was purchased through open market transactions, and the remainder was sourced from natural gas, large hydroelectric, and nuclear resources (SCE 2019).

Natural Gas

Southern California Gas Company (SoCal Gas) provides natural gas to the City of Palmdale and surrounding areas. In 2020, SoCal Gas produced approximately 5,231 million therms of natural gas (California Energy Commission 2020b). Most of the gas transmitted by SoCal Gas is sourced from basins in Texas and New Mexico (SoCal Gas 2022).

Telecommunications

Telecommunication utilities, including phone, internet, and television, are mainly a privately owned enterprise and are offered by a variety of companies in Palmdale and the surrounding area. The number of providers offering the service, the type of service available, and the transmission speed of the service all affect the quality of telecommunications. This approach differs from that of most other utilities, which are generally publicly owned or offered by limited or individual service providers in a given area. However, the City of Palmdale has formed an agreement with SiFi Networks, a fiberoptic cable internet provider, to install an underground fiberoptic network within public and private streets of Palmdale. This project has already been considered under CEQA through a Categorical Exemption in 2020 (City of Palmdale 2020). Telecommunications providers will usually complete infrastructure and other service improvements for an area as the need arises to meet customer demand.

4.19.2 Regulatory Setting

a. Water Supply

Federal

Clean Water Act

The federal Clean Water Act, enacted by Congress in 1972 and amended several times since, is the primary federal law regulating water quality in the United States and forms the basis for several State and local laws throughout the country. The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. The Clean Water Act gave the U.S. Environmental Protection Agency the authority to implement federal pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry contaminants in surface water, establishing wastewater and effluent discharge limits for various industry categories, and imposing requirements for controlling nonpoint-source pollution. At the federal level, the Clean Water Act is administered by the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers. At the State and regional levels in California, the act is administered and enforced by the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB).

Clean Water Act Section 402

Section 402 of the Clean Water Act requires that all construction sites on an acre or greater of land, as well as municipal, industrial and commercial facilities discharging wastewater or stormwater directly from a point source, such as a pipe, ditch, or channel, into a surface water of the United States must obtain permission under the NPDES permit. All NPDES permits are written to ensure that the surface water receiving discharges will achieve specified water quality standards.

Title 40 of the Code of Federal Regulations

Title 40 of the Code of Federal Regulations (CFR), Part 258 (Resource Conservation and Recovery Act RCRA, Subtitle D) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

State

California Department of Water Resources

The California Department of Water Resources is responsible for preparing and updating the California Water Plan, which is a policy document that guides the development and management of State water resources. The plan is updated every five years to reflect changes in resources and urban, agricultural, and environmental water demands. The California Water Plan suggests ways of managing demand and augmenting supply to balance water supply with demand.

Sustainable Groundwater Management Act

In September 2014, Governor Brown signed legislation requiring that California's critical groundwater resources be sustainably managed by local agencies. The Sustainable Groundwater

Management Act gives local agencies the power to sustainably manage groundwater and requires groundwater sustainability plans to be developed for medium- and high-priority groundwater basins.

Urban Water Management Planning Act

In 1983 the California Legislature enacted the Urban Water Management Planning Act (Water Code Section 10610–10656). The Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act requires that urban water suppliers adopt an urban water management plan (UWMP) at least once every five years and submit them to the Department of Water Resources. Noncompliant urban water suppliers are ineligible to receive funding pursuant to Division 24, commencing with Section 78500, or Division 26, commencing with Section 79000, or receive drought assistance from the State until the UWMP is submitted and deemed complete pursuant to the Urban Water Management Planning Act.

Senate Bills 610 and 221, Water Supply Assessment and Verification

Senate Bills (SB) 610 and 221 amended State law, effective January 1, 2002, to improve the link between the information on water supply availability and certain land use decisions made by cities and counties. Both statutes require detailed information regarding water availability to be provided to city and county decision-makers prior to approval of specified large development projects with greater than 500 dwelling units or 500,000 square feet of commercial space. Both statutes also require this detailed information to be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. Under SB 610 water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects as defined in Water Code 10912 subject to CEQA. Under SB 221 approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply.

Water Conservation Act of 2009 (SBx7-7)

Due to reductions of water available from the San Joaquin Delta, the Legislature drafted the Water Conservation Act of 2009 (SBx7-7) to protect statewide water sources. The legislation called for a 20 percent reduction in water use in California by the year 2020. The legislation amended the Water Code to call for 2020 and 2015 water use targets in the 2010 UWMPs, updates or revisions to these targets in the 2015 UWMPs and allows DWR to enforce compliance to the new water use standards. Beginning in 2016, failure to comply with interim and final targets will make the City ineligible for grants and loans from the State. In addition to an overall statewide 20 percent water use reduction, the objective of SBx7-7 is to reduce water use within each hydrologic region in accordance with the agricultural and urban water needs of each region. Currently, DWR recognizes 10 separate hydrologic regions. Each hydrologic region has been established for planning purposes and corresponds to the State's major drainage areas. The City of Palmdale is located in the South Lahontan Hydrologic Region, which encompasses over 17 million acres of land and includes portions of Inyo, Mono, San Bernadino, Kern, and Los Angeles Counties. The ten-year baseline for per capita water use for this region was determined to be 231 gallons of water per capita per day (GPCD), and PWD was able to meet their 2020 target of reducing water usage to 165 GPCD, or a 20% reduction (Palmdale Water District 2020).

Model Water Efficient Landscape Ordinance (Assembly Bill 1881)

The updated Model Water Efficient Landscape Ordinance required cities and counties to adopt landscape water conservation ordinances by January 31, 2010 or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Water Efficient Landscape Ordinance (WELO). The City of Palmdale has adopted a WELO (Ordinance 1475, City of Palmdale Municipal Code, Chapter 14.05, *Water Efficient Landscape*) to reduce the amount of water used in landscaping. This ordinance brings the City into compliance with California Assembly Bill 1881.

Executive Order B-29-15 required the State to revise the Model WELO to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, on-site stormwater capture, and by limiting the portion of landscapes that can be covered in turf. It also requires reporting on the implementation and enforcement of local ordinances, with required reports due by December 31, 2015 (California Department of Water Resources [DWR] 2017).

Regional and Local

The main sources of water supply for the City are groundwater produced from the Antelope Valley Groundwater Basin, surface water from the Littlerock Reservoir, and imported SWP water. The City has the legal right to pump from the Antelope Valley Groundwater Basin and has had a contract with the State Water Project since 1985. The City's WELO requires that all applicable landscaping and irrigation projects, including certain new development projects, any project with an aggregate landscape area of 2,500 square feet, or projects using treated or untreated graywater or rainwater, are required to prepare landscape and irrigation design plans (City of Palmdale 2015).

Urban Water Management Plan

The 1983 Urban Water Management Act mandates that all urban water suppliers prepare an Urban Water Management Plan (UWMP), as described in California Water Code Sections 10610 through 10657. A UWMP is a planning tool that guides the actions of urban water suppliers, and it provides perspective on water supply issues to water managers and the public. PWD developed a UWMP in 2020 in compliance with the requirements of these regulations, that the UWMP address water supply planning over at least a 20-year period, identify and quantify existing and projected water supplies, and implement conservation and efficient use of urban water supplies (Palmdale Water District 2020a). LACWD 40 also prepared a UWMP in 2020 in compliance with these regulations.

Water Shortage Contingency Plan

In June 2021, PWD adopted a Water Shortage Contingency Plan (WSCP) as part of its Urban Water Management Plan. The WSCP serves to guide the actions of the District during water shortage conditions and aims to improve preparedness for droughts and other impacts on water supplies by describing the process used to address varying degrees of water shortages. An Annual Assessment of water supply and demand will be conducted for the WSCP and submitted to the Department of Water Resources (Palmdale Water District 2020).

b. Wastewater

State

Porter-Cologne Water Quality Control Act (California Water Code)

The State of California is authorized to administer Federal or State laws regulating water pollution within the State. The Porter-Cologne Water Quality Control Act (Water Code §§ 13000, *et seq.*) includes provisions to address requirements of the Clean Water Act. These provisions include National Pollutant Discharge Elimination System (NPDES) permitting, dredge and fill programs, and civil and administrative penalties. The Porter-Cologne Act is broad in scope and addresses issues relating to the conservation, control, and utilization of the water resources of the State. Additionally, the Porter-Cologne Act states that the quality of all the waters of the State, including groundwater and surface water, must be protected for the use and enjoyment by the people of the State.

In California, the NPDES program is administered by the SWRCB through the Regional Water Quality Control Boards (RWQCB) and requires municipalities to obtain permits that outline programs and activities to control wastewater and stormwater pollution. The federal Clean Water Act prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. The SWRCB is the permitting authority in California and adopted an NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, otherwise known as the Construction General Permit (Order 2009-0009, as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The Order applies to construction sites that include one or more acre of soil disturbance. Construction activities include clearing, grading, grubbing, excavation, stockpiling, and reconstruction of existing facilities involving removal or replacement. The Construction General Permit requires that the landowner and/or contractor file permit registration documents prior to commencing construction and then pay a fee annually through the duration of construction. These documents include a notice of intent, risk assessment, site map, stormwater pollution prevention plan (SWPPP), and signed certification statement. The SWPPP must include measures to ensure that: all pollutants and their sources are controlled; non-stormwater discharges are identified and eliminated, controlled, or treated; site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges; and BMPs installed to reduce or eliminate pollutants after construction are completed and maintained. The Construction General Permit specifies minimum BMP requirements for stormwater control based on the risk level of the site. The Permit also specifies minimum qualifications for a qualified SWPPP developer and qualified SWPPP practitioner.

Title 22 of California Code of Regulations

Title 22 regulates the use of reclaimed wastewater. In most cases only disinfected tertiary water may be used on food crops where the recycled water would come into contact with the edible portion of the crop. Disinfected secondary treatment may be used for food crops where the edible portion is produced below ground and will not come into contact with the secondary effluent. Lesser levels of treatment are required for other types of crops, such as orchards, vineyards, and fiber crops.

The California Department of Public Health sets specific requirements for treated effluent reuse, or recycled water, through Title 22 of the California Code of Regulations. These requirements are primarily set to protect public health. The California Code of Regulations Title 22, Division 4, Chapter

3, Sections 60301 through 60355 are used to regulate recycled wastewater and are administered jointly by the California Department of Public Health and the RWQCBs. Title 22 contains effluent requirements for four levels of wastewater treatment, from un-disinfected secondary recycled water to disinfected tertiary recycled water. Higher levels of treatment have higher effluent standards, allowing for a greater number of uses under Title 22, including irrigation of freeway landscaping, pasture for milk animals, parks and playgrounds, and vineyards and orchards for disinfected tertiary recycled water.

c. Solid Waste

State

California Department of Resources Recycling and Recovery

California Department of Resources Recycling and Recovery (CalRecycle) oversees, manages, and monitors waste generated in California. CalRecycle provides limited grants and loans to help California cities, counties, businesses, and organizations meet the State waste reduction, reuse, and recycling goals. It also provides funds to clean up solid waste disposal sites and co-disposal sites, including facilities that accept hazardous waste substances and non-hazardous waste. CalRecycle develops, manages, and enforces waste disposal and recycling regulations, including AB 939 and SB 1016, both of which are described below.

Assembly Bill 939

AB 939 (Public Resources Code 41780) requires cities and counties to prepare integrated waste management plans and to divert 50 percent of solid waste from landfills beginning in calendar year 2000 and each year thereafter. AB 939 also requires cities and counties to prepare Source Reduction and Recycling Elements as part of the integrated waste management plans. These elements are designed to develop recycling services to achieve diversion goals, stimulate local recycling in manufacturing and stimulate the purchase of recycled products.

Assembly Bill 341

The purpose of AB 341 is to reduce GHG emissions by diverting commercial solid waste to recycling efforts and to expand the opportunity for additional recycling services and recycling manufacturing facilities in California. AB 341 required all businesses that generate four or more cubic yards of garbage per week and multi-family dwellings with five or more units to recycle by July 1, 2012. AB 341 also sets a statewide goal of 75 percent waste diversion.

Senate Bill 1016

SB 1016 requires that the 50 percent solid waste diversion requirement established by AB 939 be expressed in pounds per person per day. SB 1016 changed the CalRecycle review process for each municipality's Integrated Waste Management Plan. After an initial determination of diversion requirements in 2006 and establishing diversion rates for subsequent calendar years, the Board reviews a jurisdiction's diversion rate compliance in accordance with a specified schedule. Beginning January 1, 2018, the Board will be required to review a jurisdiction's source reduction and recycling element and hazardous waste element once every two years.

Senate Bill 1374

SB 1374 seeks to assist jurisdictions with diverting their construction and demolition waste based on a model diversion ordinance adopted by CalRecycle in March 2004. SB 1374 requires local jurisdictions to summarize their progress in diverting construction and demolition material, in addition to reporting the progress of diversion programs pursuant to AB 939.

Senate Bill 1383

SB 1383 establishes methane emissions reduction targets for California in an effort to reduce emissions of short-lived climate pollutants. Recognizing that 20 percent of the state's methane emissions originate from organic waste in landfills, these targets aim to reduce organic waste disposal by 75 percent by 2025, and recover at least 20 percent of currently disposed surplus food by 2025.

4.19.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to utilities and service systems would be potentially significant if implementation of the Plan would:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
Threshold 2:	Would the Plan have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?
Threshold 3:	Would the Plan result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Impact U-1 DEVELOPMENT FACILITATED BY THE PLAN WOULD CREATE ADDITIONAL DEMAND FOR WATER SUPPLY AND WASTEWATER FACILITIES, WHICH WOULD REQUIRE THE CONSTRUCTION OR RELOCATION OF NEW OR EXPANDED WATER AND WASTEWATER FACILITIES. SUFFICIENT WATER SUPPLIED BY PWD AND LACWD 40 WOULD NOT BE AVAILABLE TO SERVE THE PLAN AND REASONABLY FORESEEABLE FUTURE DEVELOPMENT. THE PLAN WOULD ALSO EXCEED CAPACITY OF LOCAL WASTEWATER TREATMENT FACILITIES. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Water

Growth and development facilitated by the Plan would create additional demand for water in Palmdale. Development facilitated by the Plan would generally occur within developed areas of the city, with existing water infrastructure; however, development of new areas and increased density in developed areas could require additional water infrastructure and upgrades to existing infrastructure. Installation of upgraded infrastructure would result in ground disturbance. Generally, this ground disturbance would occur in previously disturbed or developed areas, reducing the potential for environmental impacts. Compliance with mitigation measures and Plan policies provided in this EIR would minimize impacts to sensitive environmental resources where upgrades require construction in undeveloped areas of the City. Therefore, the Plan would not result in construction or relocation of water facilities such that significant environmental impacts would result.

In 2020, PWD's total service population was 126,062, and the PWD 2020 UWMP estimates an anticipated 2045 service population of 153,766. As discussed in Section 4.14, *Population and Housing*, growth facilitated by the project is predicted to increase the Planning Area's total population to 243,154, an increase of 58 percent. Accordingly, the Plan would result in substantial population growth compared to existing conditions and currently projected population growth.

PWD presents projected water usage and projected water supplies in normal, single dry, and multiple dry years in its 2020 UWMP. Table 4.19-2 shows anticipated water usage and water supply through the Plan's horizon year of 2045.

Table 4.19-2 Projected Water Usage and Water Supplies

	2025	2030	2035	2040	2045
Normal Year					
Supply Totals	36,725	35,315	35,345	35,375	35,375
Water Use Totals	19,720	20,310	21,480	22,780	24,250
Difference	+17,005	+15,005	+13,865	+12,595	+11,125
Single Dry Year					
Supply Totals	21,235	20,600	21,410	22,225	22,225
Water Use Totals	19,720	20,310	21,480	22,780	24,250
Difference	1,515	290	-70	-555	-2,025
Multiple Dry Years					
Supply Totals	28,125	26,390	26,105	25,665	25,665
Water Use Totals	19,720	20,310	21,480	22,780	24,250
Difference	8,405	6,080	4,625	2,885	1,415

Notes: Units are presented in acre-feet per year.

Source: PWD 2020)

As shown above, current anticipated water supplies would be insufficient to meet anticipated water usage in a single dry year. LACWD 40’s UWMP demonstrates that in normal, single, and multiple dry years, LACWD 40 can meet its service area’s demands by pumping groundwater from its banked supplies (LACWD 40 2020). Water demand can be estimated using the projected wastewater generation, which is further described below; generally, anticipated water demand is approximately 120 percent of anticipated wastewater generation. Development facilitated by the Plan would generate approximately 4,765,260 gallons per day, or 5,338 acre-feet per year, of wastewater. Accordingly, the Plan would increase water demand by approximately 6,404 acre-feet per year. Due to the substantial population increase and associated water demand facilitated by the Plan, LACWD 40 and PWD would likely have insufficient supply to meet demand from the Plan’s projected population of 243,154 residents by 2045. The following goals and policies of the Plan would minimize impacts to water supply and would encourage water conservation to the extent feasible.

LAND USE AND COMMUNITY DESIGN

- **Goal LUD-3: A City with high-quality services and facilities in all neighborhoods.**
 - **Policy LUD-3.4: Expansion of Public Facilities.** Maintain and expand public facilities and services to better support the community, including schools, libraries, utilities, and recreational spaces.
 - **Policy LUD-3.5: Infrastructure Capacity and Service.** Ensure that there will be adequate water and wastewater system capacity to meet projected demand by continuing to oversee the development of adequate and dependable public services and facilities to support both existing and future development.
 - **Policy LUD-3.6: Infrastructure Funding and Programs.** Continue to implement comprehensive water and wastewater management programs and ensure that future developments pay their fair share for any infrastructure improvements demand necessary.

CONSERVATION

- **Goal CON-5: Protect the quality and quantity of local water resources.**
 - **Policy CON-5.1: Ground water recharge.** Ensure that ground water supplies are recharged and protect natural recharge areas such as the Little Rock and Big Rock Washes, and Amargosa and Anaverde Creeks from pollutants or other materials, which might degrade groundwater supplies.
 - **Policy CON-5.3: Regional monitoring cooperation.** Cooperate with Los Angeles County Health Department and the Regional Water Quality Control Board in monitoring industrial and commercial uses utilizing hazardous or potentially polluting materials and fluids, to prevent their discharge into the groundwater aquifer.
 - **Policy CON-5.4: Flood control measures.** Maximize groundwater recharge capabilities with flood control measures.

- **Goal CON-6: Minimize the impacts of urban development on groundwater supplies.**
 - **Policy CON-6.1: Encourage natural recharge.** Restrict building coverage and total impervious area in the vicinity of natural recharge areas.
 - **Policy CON-6.2: Reduce landscaping irrigation needs.** Require the use of water conserving native or drought resistant plants and drip irrigation systems where feasible.
 - **Policy CON-6.3: Reduce street runoff.** Design streets to incorporate vegetation, soil, and engineered systems to slow, filter, and cleanse stormwater runoff.
 - **Policy CON-6.4: New construction water conservation.** Require water conserving appliances and plumbing fixtures in all new construction.
 - **Policy CON-6.5: Monitoring and coordination.** Coordinate with local water agencies to monitor ground water levels, State water allocations and development approvals, to assure that development does not outpace long-term water availability.

- **Goal CON-7: Maintain and further the City's commitment to long-term water management within the Antelope Valley by planning for the conservation and managed use of water resources, including groundwater, imported water, and reclaimed water.**
 - **Policy CON-7.1: Reclaimed water irrigation.** Assess and implement, when and where feasible, reclaimed water for landscape irrigation.
 - **Policy CON-7.2: Water run-off capture.** Work with local water purveyors to assess the potential for capturing local run-off and utilization of imported water (water banking) for groundwater recharge within the Planning Area.
 - **Policy CON-7.3: Retain recharge areas.** Through the land use planning process, ensure that important recharge areas are retained.
 - **Policy CON-7.4: Water management.** Continue to seek out long-range water management techniques as new technology is developed.
 - **Policy CON-7.5: Implementation.** Promote implementation of water reduction and recycling systems that are feasible and appropriate to the Planning Area.
 - **Policy CON-7.6: Water recycling.** Encourage residents and businesses to recycle water where feasible, and where water recycling does not result in health and safety concerns.
 - **Policy CON-7.7: Water sources.** Participate in regional efforts to retain imported water allocations and seek out other sources as they become available.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PFSI-1 Maintain superior public facilities to support the Palmdale community.**
 - **Policy PFSI 1.1: Community Facilities Master Plan.** Prepare a citywide master plan for community facilities that addresses existing and future facilities and equitable access. Include evaluation of existing facilities, need for new or expanded facilities and potential locations, and a funding plan.
 - **Policy PFSI 1.3: Expand Public Facilities.** Expand public facilities, recreation, and library facilities to underserved areas as needed, including the areas west of SR-14.
 - **Policy PFSI 1.6: Rehabilitate Facilities.** Rehabilitate City-owned public facilities using the most innovative technologies and best practices available to ensure long term efficacy.
- **Goal PFSI-3: Ensure that all development in Palmdale is served by adequate water distribution and sewage facilities.**
 - **Policy PFSI 3.1: Water Supply and Delivery.** Support water suppliers and other jurisdictions within the Antelope Valley in studying status and projected needs for water supply and delivery.
 - **Policy PFSI 3.2: Local Drainage Detention Basins.** Make use of interim local drainage detention basins to slow stormwater runoff until such time as permanent drainage facilities are constructed.
 - **Policy PFSI 3.3: Retention Facilities.** Where feasible, plan for detention or retention facilities in areas where groundwater recharge can be accomplished.
 - **Policy PFSI 3.4: Drainage Facilities.** Through the development review process, reserve land in appropriate locations for construction of drainage facilities.
 - **Policy PFSI 3.5: Sanitation District Collaboration and Water Purveyors.** Work with the Sanitation District and Water Purveyors to identify users for reclaimed water and support plans for its treatment and distribution.
 - **Policy PFSI 3.6: Code Compliance.** All private sewage disposal systems must comply with the requirements of the City of Palmdale Plumbing Code, the Los Angeles County Health Department, and Lahontan Regional Water Quality Control Board and any Memorandum of Understanding between these agencies concerning private sewage disposal systems.
 - **Policy PFSI 3.7: Public Sewer System Prioritization.** Require that all commercial, industrial, institutional, and multiple family uses be connected to a public sewer system with only limited use of private sewage disposal systems.
 - **Policy PFSI 3.8: Public Sewer System Utilization Requirement.** Require that all single-family residential uses with lot sizes of less than one acre be connected to a public sewer system.
 - **Policy PFSI 3.9: Renewable Energy Project Disposal Systems.** Allow the use of private sewage disposal systems on nonresidential renewable energy projects with domestic discharge only on property with an IND (Industrial) General Plan Land Use designation located between Avenue L and M between 50th Street East and 120th Street East, and on property with an IND (Industrial) General Plan Land Use designation on property located south of Avenue M, north of Avenue P-8, between 90th Street East and 120th Street East. The maximum daily estimated discharge shall not exceed 500 gallons/acre/day wastewater flow with a maximum discharge of 5,000 gallons per day.

- **Policy PFSI 3.11: New Development Fees.** Require new development to pay necessary fees for expansion and ongoing maintenance of the sewage disposal system to the appropriate agencies, to handle the increased load, which it will generate.
- **Policy PFSI 3.12: Water and Wastewater BMPs.** Utilize best management practices (BMPs) in the purveyance of water resources and management of wastewater.
- **Policy PFSI 3.13: Low Impact Development.** Require new development to minimize storm water runoff and pollutant exposure by incorporating low impact development (LID) measures and appropriate best management practices (BMPs) consistent with the National Pollution Discharge Elimination System (NPDES).
- **Policy PFSI 3.14: Water and Wastewater Provision.** Ensure the provisions of adequate water and wastewater services to all new development.
- **Policy PFSI 3.15: Diversify Water Supplies.** Coordinate with water purveyors to facilitate the commitment to diversifying the region's water supply through water banking projects and expanded recycled water projects.
- **Policy PFSI 3.16: Service Levels.** Provide sufficient levels of water, sewer, and storm drain services throughout the City.
- **Policy PFSI 3.17: Adequate Systems.** Identify and correct issues within the City's sewer and storm drain systems to prevent system failures.
- **Policy PFSI 3.18: Water Conservation.** Support and promote water conservation across all facets of City water infrastructure.
- **Goal PSFI-5: Ensure that adequate public utilities are available to support development in an efficient and orderly manner.**
 - **Policy PFSI 5.1: Development Priorities.** Prioritize development in areas that have existing horizontal infrastructure (roads, sewer, water, drainage, etc.).
 - **Policy PFSI 5.2: On-site Infrastructure.** Require all new development, including major modifications to existing development, to construct required on-site infrastructure improvements pursuant to City standards.
 - **Policy PFSI 5.3: Off-Site Fair Share Contribution.** Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.
 - **Policy PFSI 5.4: Funding for Maintenance.** Ensure there is a funding plan in place for the ongoing maintenance of these off-site facilities.
 - **Policy PFSI 5.5: Improvements Prior to Occupancy.** Require that on- and off-site improvements are constructed prior to occupancy of a new development project, or phase thereof, unless otherwise approved by the City.
 - **Policy PFSI 5.6: Land Use Changes.** When reviewing applications for land use designation changes (i.e., zone change, General Plan Amendment, specific plan amendment), conduct a thorough analysis of the impacts of the proposed change on all elements of the City's infrastructure systems, and require mitigation as deemed appropriate.
 - **Policy PFSI 5.7: Adjacent Development Integration.** Require that individual development projects integrate with adjacent development with respect to backbone infrastructure

(streets, sewer, water, and drainage). If adjacent property is undeveloped, a conceptual plan should be prepared to show that the pending development will allow for future integration and development of adjacent properties in a manner which is reasonable from a design, construction, and cost standpoint.

- **Goal PSFI-6: Coordinate with utility providers to support adequate provision of critical utilities.**
 - **Policy PFSI 6.1: Infrastructure Equity.** Distribute the costs of extending infrastructure equitably among those benefiting from the improvements.
 - **Policy PFSI 6.2: Waste Ordinance Review.** Regularly review the City’s ordinances related to recycling and solid waste to reflect updated best management practices and technological innovation.
 - **Policy PFSI 6.3: New Utility Development.** When feasible, require new utility lines to be constructed underground and along existing utility corridors.
 - **Policy PFSI 6.4: Utility Construction Cost Minimization.** Coordinate installation of utility line placement with street construction to minimize cost, where possible.
 - **Policy PFSI 6.5: Utility Provision.** Coordinate with electricity, gas, and waste providers to ensure adequacy of services for future and current needs.
 - **Policy PFSI 6.6: Prioritize Connections.** Work with providers to prioritize connections near existing development in the core of the city.
 - **Policy PFSI 6.7: Utility Safety.** When feasible, require new utility lines to be constructed away from fault lines, flood zones, fire zones, and other vulnerable areas.
 - **Policy PFSI 6.8: Utility Easements.** Through the development review process, protect existing utility easements and require dedication of additional easements where needed.
 - **Policy PFSI 6.9: Telecommunication Retrofitting.** Work with telecommunication providers to retrofit underserved areas with necessary telecommunication facilities and utilities.
 - **Policy PFSI 6.10: Capital Improvement Plans.** Adopt and annually update the City’s Capital Improvement Program to prioritize funding for public works projects in accordance with the General Plan.
 - **Policy PFSI 6.11: City-Initiated Planning.** Inform adjacent cities, town councils and county agencies of City-initiated planning and public works projects which may impact infrastructure systems and consider input and recommendations from these entities in the land use decision process.
 - **Policy PFSI 6.12: Area-Wide Improvements.** Participate in regional efforts to gain State or Federal funding for area-wide improvements.

SUSTAINABILITY

- **Goal SCR-6 Safe and secure water supply.**
 - **Policy SCR-6.1: Recycled Water.** Increase municipal reuse of local recycled water. Support the efforts of the Palmdale Water District and the Joint Powers Authority (JPA) Palmdale Recycled Water Authority (PRWA) in its proof of concept and implementation of aquifer augmentation through Advanced Treatment of Recycled water.
 - **Policy SCR-6.2: Water Efficiency Standards.** Establish water efficiency standards that are more stringent than CALGreen and model water efficient landscape ordinance (MWEL0).

- **Policy SCR-6.3:** Low-Water Use Plant List. Implement the City’s landscape plant list and use of low-water plants in new or renovated landscaped areas.
- **Policy SCR-6.4:** Rainwater Capture. Encourage rainwater capture and use of cisterns for outdoor watering purposes.
- **Policy SCR-6.5:** Greywater Permitting. Establish a streamlined permitting process for greywater systems.

In particular, Goal PFSI-3, Goal PFSI-5, and the policies contained therein would ensure that planned development within the Planning Area does not outpace predicted long-term water supplies, and in the event that PWD, LACWD 40 or other applicable water agencies determine that projected water supply is inefficient, appropriate action would be taken. Adherence to these Plan policies would address the potential water supply shortfall.

In addition, individual developments that meet certain criteria under Senate Bill 610, described above under *Regulatory Framework*, will be required to prepare a Water Supply Assessment (WSA), which identifies and verifies water supply availability under normal water year conditions, single dry year conditions, and multiple dry year conditions. The WSA will be attached to the CEQA document for the applicable project, and subject to public comment and review as part of the CEQA process. In addition, the ACWD will need to approve a project’s WSA before the project may be implemented. Additionally, CALGreen requires a 20 percent reduction in residential indoor water use that would lower potential water demand. According to PWD’s UWMP, the PWD service area has a water reduction goal of 185 gallons per capita per day (GPCD) by 2020, and in 2020 the PWD reported its GPCD was 165 GPCD, which met the targeted 185 GPCD (PWD 2020).

While development within the Planning Area would adhere to the Plan policies and water reduction requirements described above, the substantial increase to the Planning Area’s population would result in water demand that exceeds projected supply. Impacts would be significant and unavoidable.

Wastewater

Additional wastewater generated by development facilitated by the Plan is based on sewage generation factors developed by the City of Los Angeles (City of Los Angeles 2006). Household sizes in Los Angeles are generally comparable to those in Palmdale. Each development type has its own associated sewage generation factor by unit, which were used to calculate projected sewage generation volumes for each type of new development. Table 4.19-3 shows the total net new projected wastewater generation by development type facilitated under buildout of the Plan.

Table 4.19-3 Wastewater Generation by Development Type

Development Type	Plan Growth Forecast (Net New)	Sewage Generation Factor	Net New Wastewater (gpd)
Single Family Residential	11,272 units	180 gpd/unit	2,028,960
Multi-Family Residential	10,736 units	120 gpd/unit	1,288,320
Commercial	1,624,465 sf	80 gpd/1,000 sf	129,957
Industrial	10,046,865 sf	80 gpd/1,000 sf	803,749
Office	3,428,498 sf	150 gpd/1,000 sf	514,274
Total			4,765,260

gpd = gallons per day; AFY = acre-feet per year; sf = square feet
 Source for water demand factors used in calculations: City of Los Angeles 2006

Development facilitated by the Plan may require the installation of upsized sewer lines and additional lateral connections within the Planning Area. As with water facilities, sewer laterals and main extensions necessary to serve the future development would generally be installed within the already disturbed rights-of-way of existing roads or within the disturbance footprints of such projects. As such, the construction of these infrastructure improvements would not substantially increase the project’s disturbance area or otherwise cause significant environmental effects beyond those identified throughout this EIR.

As shown above in Table 4.19-3, sewage generation would be expected to increase by approximately 4.7 mgd due to development facilitated by the Plan. As described under *Environmental Setting*, the Palmdale Water Reclamation Plant provides primary, secondary, and tertiary wastewater treatment with a design capacity of 12 mgd. Given the design capacity of the Palmdale Water Reclamation Plant, it is likely that upgrades to the existing plant or new wastewater treatment facilities would be required to accommodate the additional wastewater. However, additional wastewater treatment facilities would be evaluated under CEQA project-specific review to determine potential environmental impacts. In addition, the following goals and policies of the Plan element apply to wastewater facilities:

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PSFI-3: Ensure that all development in Palmdale is served by adequate water distribution and sewage facilities.**
 - **Policy PFSI 3.5: Sanitation District Collaboration and Water Purveyors.** Work with the Sanitation District and Water Purveyors to identify users for reclaimed water and support plans for its treatment and distribution.
 - **Policy PFSI 3.7: Public Sewer System Prioritization.** Require that all commercial, industrial, institutional, and multiple family uses be connected to a public sewer system with only limited use of private sewage disposal systems.
 - **Policy PFSI 3.8: Public Sewer System Utilization Requirement.** Require that all single-family residential uses with lot sizes of less than one acre be connected to a public sewer system.
 - **Policy PFSI 3.11: New Development Fees.** Require new development to pay necessary fees for expansion and ongoing maintenance of the sewage disposal system to the appropriate agencies, to handle the increased load, which it will generate.

- **Policy PFSI 3.12: Water and Wastewater BMPs.** Utilize best management practices (BMPs) in the purveyance of water resources and management of wastewater.
- **Policy PFSI 3.14: Water and Wastewater Provision.** Ensure the provisions of adequate water and wastewater services to all new development.

Adherence to these Plan policies would address the potential need for additional wastewater treatment facilities. However, the substantial increase to the Planning Area's population would result in wastewater generation that could exceed capacity of existing treatment facilities. Impacts would be significant and unavoidable.

Other Utilities

Finally, development facilitated by the Plan would increase demand for electricity, natural gas, and telecommunication facilities. However, these types of facilities are typically constructed in response to specific development, which would be evaluated under CEQA project-specific review. In addition, the following goals and policies of the Plan apply to the development of additional utilities.

LAND USE AND DEVELOPMENT

- **Goal PFSI-1 Maintain superior public facilities to support the Palmdale community.**
 - **Policy PFSI 1.1: Community Facilities Master Plan.** Prepare a citywide master plan for community facilities that addresses existing and future facilities and equitable access. Include evaluation of existing facilities, need for new or expanded facilities and potential locations, and a funding plan.
 - **Policy PFSI 1.3: Expand Public Facilities.** Expand public facilities, recreation, and library facilities to underserved areas as needed, including the areas west of SR-14.
 - **Policy PFSI 1.6: Rehabilitate Facilities.** Rehabilitate City-owned public facilities using the most innovative technologies and best practices available to ensure long term efficacy.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

Plan Goal PFSI 3 and Plan Policies PFSI 3.1 through 3.18, listed above, would apply.

Adherence to these Plan policies would address the potential need for additional electricity, natural gas, and telecommunication facilities. Therefore, impacts would be less than significant.

Mitigation Measures

At this time, it cannot be determined with certainty whether sufficient water supply sources may be available and sufficient to accommodate the demands of anticipated growth. There are no known mitigation measures that would reduce this impact to less than significant.

Significance After Mitigation

Impacts related to water supply and wastewater capacity would be significant and unavoidable.

Threshold 4: Would the Plan generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Threshold 5: Would the Plan comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Impact U-2 THE PLAN WOULD NOT GENERATE SOLID WASTE IN EXCESS OF STATE OR LOCAL STANDARDS OR IN EXCESS OF CAPACITY OF LOCAL INFRASTRUCTURE. PROJECTS CARRIED OUT UNDER THE PLAN WOULD COMPLY WITH RELEVANT WASTE REDUCTION STATUTES AND REGULATIONS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Development facilitated by the Plan would add approximately 22,000 housing units and over 10 million square feet of commercial, industrial, and retail area. Projected solid waste generation rates for the various land use types that could experience future growth under the Plan are shown in Table 4.19-4. As shown below, development facilitated by the Plan would generate approximately 62,900 tons of solid waste per year at full buildout.

Table 4.19-4 Projected Plan Solid Waste Generation

Development Type	Plan Growth Forecast (Net New)	Solid Waste Generation Factor (per day)	Projected Daily Solid Waste Generation in 2045 (tons/year)
Single Family Residential	11,272 units	12.23 lbs/unit	25,158
Multi-Family Residential	10,736 units	12.23 lbs/unit	23,962
Commercial	1,624,465 sf	5 lbs/1,000 sf	1,482
Industrial	10,046,865 sf	62.5lbs/1,000 sf	9,167
Office	3,428,498 sf	6 lbs/1,000 sf	3,128
Total			62,900

Source: CalRecycle 2004

Potential future developments facilitated by the Plan would be reviewed on a project-by-project basis; solid waste impacts of these developments would be evaluated based on existing and planned disposal facilities and their available capacities. Further, as shown in Table 4.19-5, the landfills listed in Section 4.19.1, *Environmental Setting*, have a combined remaining capacity of 477,835,706 cubic yards, or 191,134,282 tons.¹

Table 4.19-5 Existing Landfills Remaining Capacity

Solid Waste Facility	Remaining Capacity (cubic yards)
Antelope Valley Public Landfill	17,911,225
Lancaster Landfill and Recycling Center	14,514,648
McKittrick Waste Treatment Site	769,790
Simi Valley Landfill and Recycling Center	82,954,873
El Sobrante Landfill	143,977,170

¹ Solid waste is approximately 800 pounds per cubic yard (CalRecycle 2004).

Solid Waste Facility	Remaining Capacity (cubic yards)
Sunshine Canyon City/County Landfill	77,900,000
Chiquita Canyon Sanitary Landfill	60,408,000
Victorville Sanitary Landfill	79,400,000
Total	477,835,706

Source: CalRecycle 2021b

The solid waste generated by the Plan annually by 2045 would represent less than 0.1 percent of the remaining capacity of these facilities. Further, the Plan includes the following goal and policies to ensure continued effective management of solid waste generated in the Planning Area.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PSFI-5: Ensure that adequate public utilities are available to support development in an efficient and orderly manner.**
 - **Policy PFSI 5.2: On-site Infrastructure.** Require all new development, including major modifications to existing development, to construct required on-site infrastructure improvements pursuant to City standards.
 - **Policy PFSI 5.3: Off-Site Fair Share Contribution.** Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.
 - **Policy PFSI 6.5: Utility Provision.** Coordinate with electricity, gas, and waste providers to ensure adequacy of services for future and current needs.

Development facilitated by the Plan would be required to comply with these policies, including providing and maintaining adequate and orderly systems for efficient collection and disposal of solid waste for existing and future development. Further, the 62,900 tons of waste generated by development facilitated by the Plan annually would account for 0.1 percent of the remaining capacity of the landfills listed in Section 4.19.1, *Environmental Setting*. Furthermore, through compliance with Plan policies addressing the efficiency and sustainability of the solid waste services and solid waste reduction, the Plan’s solid waste impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.19.4 Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur. Therefore, the analysis of Plan impacts also constitutes the cumulative analysis, at least at the level of the Planning Area or the service area of the utility providers discussed in this chapter of the EIR.

Water

The geographic scope for cumulative water supply impacts is the water districts service areas. PWD's service area encompasses approximately 187 square miles in northeastern Los Angeles County, including the City of Palmdale and its SOI. LACWD 40's service area encompasses most of the City of Lancaster and a small portion of the Planning Area to the northwest. This geographic scope is appropriate because PWD and LACWD 40 are responsible for supplying potable water to all residential, commercial, industrial, and fire protection uses within its service area. Development considered part of the cumulative analysis includes buildout of the Plan and other future development within the Planning Area.

Cumulative development within the PWD and LACWD 40 service areas will continue to increase demands on water supplies. In addition to the proposed Plan, other cumulative development would further increase demand for water services. While some excess water supply is currently anticipated in some years by PWD and LACWD 40, and adherence to Plan goals and policies would reduce water consumption and ensure the provision of water is not outpaced by development, the Plan and other cumulative development would exceed projected water supply. Accordingly, there would not be sufficient water supply for cumulative development in normal and dry years. Therefore, the Plan would contribute to cumulatively considerable impacts to water supply services.

Wastewater

The geographic scope for cumulative wastewater impacts includes PUSD's service area, because wastewater conveyance and treatment throughout the Planning Area is conducted by PUSD. As discussed above under Impact UTIL-1, new wastewater service connections would be installed as needed, on a project-specific basis; this would occur for developments within the cumulative scenario as it would for developments facilitated by the Plan. PUSD and the City of Palmdale conduct repairs and upgrades to the existing wastewater conveyance system throughout the city on an as-needed basis and would continue to do so for both residential developments under the proposed Plan as well as projects in the cumulative scenario.

As discussed under Impact UTIL-1, the Plan would generate wastewater that would exceed capacity of the Palmdale Water Reclamation Plant. Future development in the Planning Area would further generate wastewater in excess of the plant's capacity. While adherence to Plan goals and policies would ensure the provision of wastewater services is not outpaced by development, the Plan and other cumulative development would exceed capacity of the Palmdale Water Reclamation Plant. Therefore, the Plan would contribute to cumulatively considerable impacts to wastewater treatment services.

Electricity and Natural Gas

The geographic scope for cumulative electricity and natural gas impacts is the SCE and SoCal Gas service area. This geographic scope is appropriate because SCE and SoCal Gas are responsible for transmitting electricity and natural gas, respectively, to all land uses within its service area, including the Planning Area. Development considered part of the cumulative analysis includes buildout of other local General Plans and development within the SCE and SoCal Gas service area. SCE and SoCal Gas are subject to the requirements set forth and/or enforced by the CPUC. The need for electricity and natural gas infrastructure would be addressed on a case-by-case basis for each cumulative project, and would be subject to CPUC requirements, similar to those applicable to the Plan. Therefore, cumulative impacts related to electric power and natural gas transmission facilities

would be less than significant. Therefore, the Plan would not have a cumulatively considerable contribution to a cumulative impact regarding electricity and natural gas.

Telecommunications

The geographic scope for cumulative telecommunications impacts is the telecommunication provider service area. This geographic scope is appropriate because local providers are responsible to provide adequate telecommunication infrastructure to all land uses within its service area, including the Planning Area. Development considered part of the cumulative analysis includes buildout of the Plan.

As discussed above under Impact UTIL-1, Plan implementation requires connections to existing utility infrastructure to meet the needs of future residents and employees within the Planning Area. Cumulative development would increase demand for telecommunications infrastructure in the Planning Area. However, cumulative projects would each be required to provide adequate telecommunications infrastructure on a project-by-project basis and would be subject to the same requirements as the Plan. Therefore, cumulative impacts related to telecommunications infrastructure would be less than significant. The Plan would not have a cumulatively considerable contribution to a cumulative impact regarding telecommunication services.

Solid Waste

The geographic scope for cumulative solid waste impacts encompasses all areas in the Waste Management service area that contribute to the same landfills and solid waste facilities as Palmdale and its SOI. This geographic scope is appropriate because, as the local provider, Waste Management is responsible for accepting solid waste from all land uses within its service area, including the Planning Area. Development considered part of the cumulative analysis includes buildout of cities and unincorporated areas within Los Angeles County that dispose of waste at the same facilities as Palmdale, which would continue to increase solid waste generation.

As discussed under Impact UTIL-2, the Plan at full buildout would annually generate solid waste that would represent less than 0.1 percent of the remaining capacities of the landfills that serve the Planning Area. Further, compliance with applicable solid waste regulations and with Palmdale Municipal Code standards would maintain or improve upon diversion rates. Cumulative development in the Planning Area would be required to comply with requirements of AB 939 which requires a solid waste diversion rate of 50 percent and of SB 1383 requiring the enhanced diversion of organic waste. Therefore, cumulative impacts to solid waste facilities would be less than significant.

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4.20 Wildfire

This chapter analyzes impacts associated with the risk of exposure to wildland fires under the Plan. Information for this chapter comes from various sources including the Plan, the Natural and Manmade Hazards and Public Facilities + Open Space chapter of the Background Report produced by the City for the Plan and released to the public in Spring 2020 (available on the project website and upon request from the City of Palmdale), and other sources as cited in this chapter.

4.20.1 Environmental Setting

In California, responsibility for wildfire prevention and suppression is shared by federal, State, and local agencies. Federal agencies are responsible for lands in Federal Responsibility Areas. California has identified State Responsibility Areas (SRA) where the state has financial responsibility for wildland fire protection and prevention; incorporated cities and areas under federal ownership are not included. These are managed by the California Department of Forestry and Fire Protection (CAL FIRE). All incorporated areas and other unincorporated lands not in SRAs are classified as Local Responsibility Areas (LRA).

a. Wildfire Behavior and Controlling Factors

Human influence on wildfire includes direct influences, such as the ignition and suppression of fires, and indirect influence through climate change, the alteration of native vegetation, fire suppression, and development patterns. Human-induced wildfire ignitions can change fire regime characteristics in two ways: (1) changing the distribution and density of ignitions and (2) changing the seasonality of burning activity. Human-induced ignition sources include escapes from debris and brush-clearing fires, electrical equipment malfunctions, campfires, smoking, fire play (e.g., fireworks), vehicles, and arson. Consequently, areas near human development more frequently experience fires than very remote or urban areas.

Once a fire is started, the spread and behavior of a fire become a function of fuel characteristics, terrain, and weather conditions. People have intervened deliberately and dramatically in the natural fire regime through fire suppression and, more recently, actions that affect fuel connectivity. Historically, fire suppression was used to prevent and limit wildfires. Over time, this land management practice (combined with forest regrowth after extensive logging in the late 19th century) has led to a buildup of forest fuels and an increase in the occurrence and threat of large, severe fires. Contemporary fire management practices include fuel management activities that are intended to reduce the intensity and severity of wildfires. Reducing fuels through mechanical treatments and prescribed fire have been found to be effective at reducing fire frequency, fire severity, and annual area burned when applied at the landscape scale over an extended period of time.

Wildfire activity is closely related to temperature and drought conditions, and in recent decades, increasing drought frequency and warming temperatures have resulted in increased fire activity and the largest, most destructive, and deadliest wildfires in California history. Climate change will continue to produce conditions that facilitate a longer fire season, which, when coupled with human-caused changes in the seasonality of ignition sources, will produce more, longer, and bigger fires during more times of the year. According to California's Fourth Climate Change Assessment, Statewide Summary Report (OPR 2018), if greenhouse gas emissions continue to rise, the frequency

of extreme wildfires burning over 25,000 acres could increase by 50 percent by 2100, and the average area burned Statewide could increase by 77 percent by the end of the century.

b. California Wildfire Hazards

While all of California is subject to some degree of wildfire hazard, specific features make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code [PRC] 4201-4204 and California Government Code 51175-89). Factors that increase an area’s susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions. CAL FIRE has identified two types of wildfire risk areas: 1) wildland areas that may contain substantial forest fire risks and hazards and 2) very high fire hazard severity zones (VHFHSZ). Each risk area carries with it Code requirements to reduce the potential risk of wildfires. Under State regulations, areas in very high FHSZs must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life in these areas.

c. Palmdale Fire Protection and Hazards

The City of Palmdale contracts fire protection through the County of Los Angeles Fire Department (LACoFD), which operates five fire stations in and around Palmdale. The locations of these fire stations are listed in Table 4.20-1.

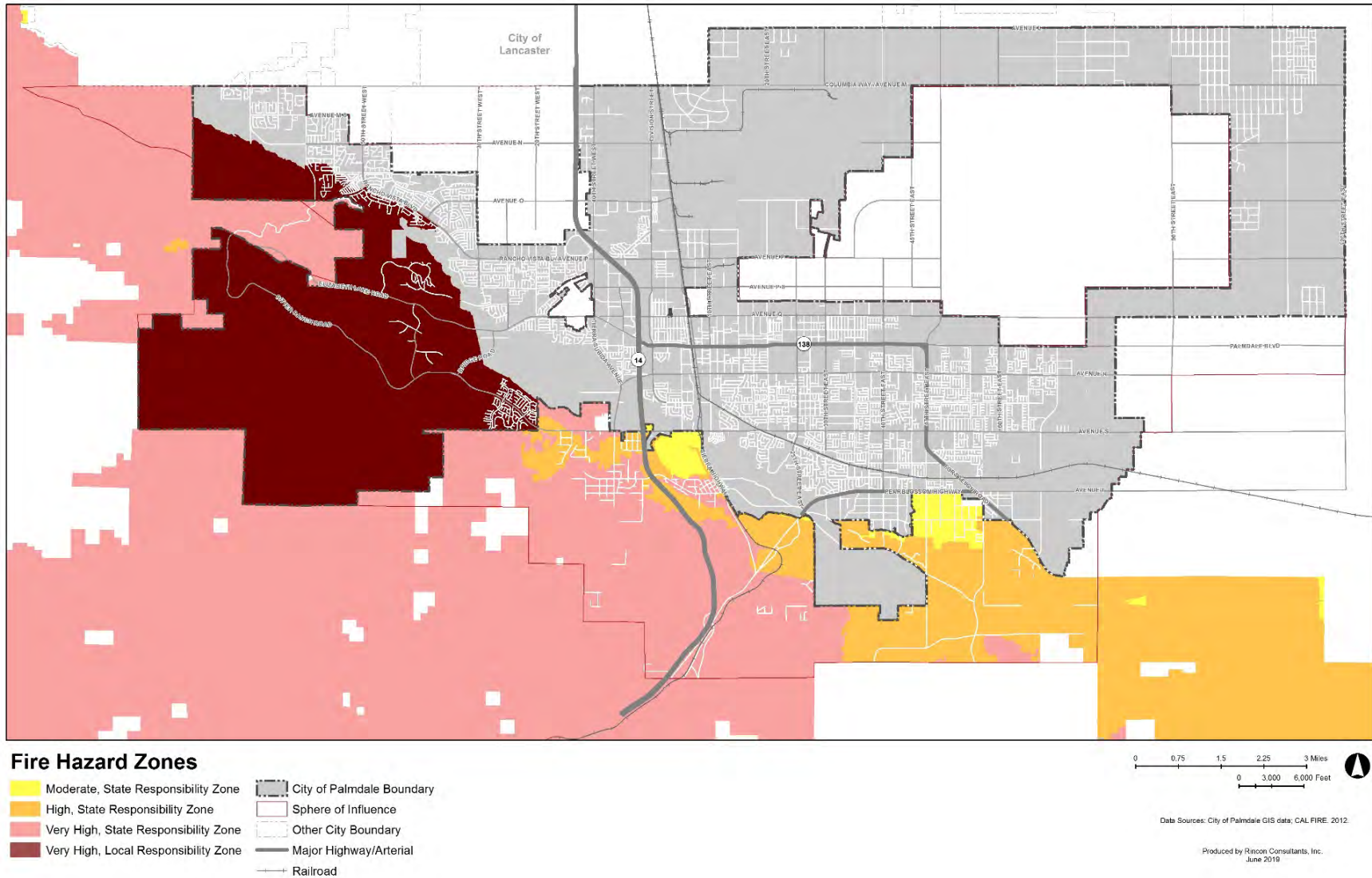
Table 4.20-1 Palmdale Fire Stations

Facility	Address
Los Angeles County Fire Department Station #24	1050 West Avenue P
Los Angeles County Fire Department Station #37	38318 9 th Street East
Los Angeles County Fire Department Station #93	5624 East Ave R
Los Angeles County Fire Department Station #131	2629 East Ave S
Los Angeles County Fire Department Station #136	3650 Bolz Ranch Rd

Source: City of Palmdale, 2020

The parts of the Planning Area that are in the City of Palmdale and are in fire hazard zones are designated as an LRA, but most of the City is not within a fire hazard severity zone. The southwestern portion of the City, primarily south of Rancho Vista Boulevard and west of 25th Street West, is within a VHFHSZ and is the designated LRA. Outside of the City, Palmdale is surrounded by moderate, high, and very high fire hazard severity zones to the west and south (CAL FIRE 2007). Some of these areas are in the Sphere of Influence (SOI), and therefore also in the Planning Area, and some are outside the SOI and Planning Area. Winds in Palmdale generally move from the southwest due to the high-elevation Sierra Nevada Mountains blocking wind to the north and the Mojave Desert heating wind as it moves south. Palmdale can also experience Santa Ana winds, which are strong southwesterly winds that can exceed speeds of 30 miles per hour (City of Palmdale 2015). Figure 4.20-1 shows the different fire hazard severity zones in and around the City.

Figure 4.20-1 Palmdale Fire Hazard Severity Zones



4.20.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

International Fire Code

The International Fire Code (IFC), created by the International Code Council, is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code use a hazard classification system to determine what protective measures are required for fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is updated every three years and is the basis for the California Fire Code (CFC) (also updated triennially). Local jurisdictions, including the City of Palmdale, then adopt the CFC, in some cases with local amendments.

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a “Standard” or an “Enhanced” Natural Mitigation Plan. “Enhanced” plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program. The State of California Multi-Hazard Mitigation Plan (SHMP) complies with this act.

National Fire Plan

The U.S. Department of the Interior’s National Fire Plan is intended to ensure an appropriate federal response to severe wildland fires, reduce fire impacts on rural communities, and ensure sufficient firefighting capacity in the future. The Rural Fire Assistance program is funded to enhance the fire protection capabilities of rural fire districts and safe and effective fire suppression in the wildland/urban interface. The program promotes close coordination among local, state, tribal, and federal firefighting resources by conducting training, equipment purchase, and prevention activities on a cost-shared basis.

b. State Laws, Regulations, and Policies

2019 Strategic Plan for California

The 2019 Strategic Plan prepared by CAL FIRE and the California Natural Resources Agency lays out central goals for reducing and preventing the impacts of fire in the State. The goals are meant to establish, through local, State, federal, and private partnerships, a natural environment that is more resilient and human-made assets that are more resistant to the occurrence and effects of wildland fire.

In addition to the 2019 Strategic Plan for California, individual CAL FIRE units develop fire plans, which are major strategic documents that establish a set of tools for each CAL FIRE unit for its local

area. Updated annually, unit fire plans identify wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their unit's geographical boundaries. The unit fire plan identifies strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work locally. The plans include contributions from local collaborators and stakeholders and are aligned with other plans for the area.

California Building Code (2019)

Chapter 7A of the California Building Code (California Code of Regulations, Title 24, Part 2) includes specific requirements related to exterior wildfire exposure. These requirements establish minimum standards to protect buildings located in Fire Hazard Severity Zone within SRAs and Wildland-Urban Interface Fire Areas. This code includes provisions for ignition-resistant construction standards for new buildings.

California Fire Code

The 2019 California Fire Code (California Code of Regulations, Title 24, Part 9) establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of buildings or structures or any appurtenances connected or attached to such building structures throughout California.

Wildland-Urban Interface Building Standards

On September 20, 2007, the Building Standards Commission approved the Office of the State Fire Marshal emergency regulations amending the California Code of Regulations, Title 24, Part 2, known as the California Building Code (CBC). These codes include provisions for ignition-resistant construction standards in the WUI.

California Emergency Services Act

The California Emergency Services Act of 2008 merged the duties, powers, purposes, and responsibilities of OES and the Governor's Office of Homeland Security into a new cabinet-level agency, the California Emergency Management Agency (Cal EMA). In 2013, the Governor merged the California Emergency Management Agency with the Office of Public Safety Communications and renamed the organization the California Governor's Office of Emergency Services (Cal OES). CAL OES is responsible for overseeing and coordinating emergency preparedness, response, recovery, and homeland security activities within California. Section 8687.7 of the California Disaster Assistance Act required the development of a Standard Emergency Management System (SEMS) program, for managing multiagency and multijurisdictional responses to emergencies in California. The Cal OES Emergency Management Systems Unit is a multi-agency group charged with methodical review, evaluation, and approval of needed improvements to SEMS. State agencies are required to use SEMS and local government entities must use SEMS in order to be eligible for any reimbursement of response-related costs under the State's disaster assistance programs.

Cal OES serves as the lead State agency for emergency management and coordinates the State response to major emergencies in support of local government. SEMS provides the mechanism by

which local governments request assistance from Cal OES, and Cal OES maintains oversight of the State's mutual aid system.

State of California Emergency Plan

The Cal OES Emergency Plan outlines a state-level strategy to support local government efforts during a large-scale emergency. In accordance with the California Emergency Services Act, the State Emergency Plan describes methods for carrying out emergency operations, mutual aid processes, emergency services of governmental agencies, resource mobilization, emergency public information, and continuity of government (Cal OES 2017).

California Multi-Hazard Mitigation Plan

The California Office of Emergency Services prepares the State Hazard Mitigation Plan (SHMP), which identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy (Cal OES 2018). The SHMP is required under the federal Disaster Mitigation Act of 2000 for the State to receive federal funding.

The SHMP represents the state's primary hazard mitigation guidance document - providing an updated analysis of the state's historical and current hazards, hazard mitigation goals and objectives, and hazard mitigation strategies and actions. The SHMP represents the state's overall commitment to supporting a comprehensive mitigation strategy to reduce or eliminate potential risks and impacts of disasters in order to promote faster recovery after disasters and, overall, a more resilient state. SHMPs are required to meet the Elements outlined in FEMA's State Mitigation Plan Review Guide (revised March 2015, effective March 2016).

OES is responsible for the development and maintenance of the State's plan for hazard mitigation. The State's SHMP was last approved by the Federal Emergency Management Agency (FEMA) as an Enhanced State Mitigation Plan in 2018. The SHMP is designed to reduce the effects of disasters caused by natural, technological, accidental, and adversarial/human-caused hazards. The SHMP sets the mitigation priorities, strategies, and actions for the state. The SHMP also describes how risk assessment and mitigation strategy information is coordinated and linked from local mitigation plans into the SHMP and provides a resource for local planners of risk information that may affect their planning area. The State of California is required to review and revise its SHMP and resubmit for FEMA approval at least every five years to ensure continued funding eligibility for certain federal grant programs.

Senate Bill 1241 (Kehoe) of 2012

Senate Bill 1241 (Chapter 311, Statutes of 2012) requires cities and counties to address fire risk in SRAs and VHFHSZs in the safety element of their general plans. It also requires cities and counties to make certain findings regarding available fire protection and suppression services before approving a tentative subdivision map or parcel map.

Assembly Bill 3074 (Friedman) of 2020

Assembly Bill 3074 (Chapter 259, Statutes of 2020) imposes additional fuel reduction requirements on a person who owns, leases, controls, operates, maintains, or builds an occupied dwelling or structure in, upon, or adjoining wild lands within a very high fire hazard severity zone.

SRA Fire Safe Regulations

The State Responsibility Area (SRA) Fire Safe Regulations CCR Title 14, Division 1.5, Section 1270 et seq. establishes CAL FIRE's basic wildland fire protection standards for new development and is applicable in all SRAs in California—areas where CAL FIRE is responsible for wildfire protection.

a. Local

Palmdale Local Hazard Mitigation Plan

To ensure protection of residents and businesses from natural and man-made hazards, the City has adopted a Local Hazard Mitigation Plan (LHMP), which provides mitigation for a variety of hazards that could affect Palmdale and its SOI (the Planning Area), including wildfires and brush fires. The LHMP recognizes that the City of Palmdale and the surrounding area are at risk of wildfire, and that several City facilities are in areas susceptible to wildfire. The LMHP contains several goals and objectives related to the mitigation of wildfire impacts, including but not limited to implementation of programs and projects that make infrastructure, facilities, and property more resistant to losses from all hazards, increasing public awareness of existing hazards, and strengthening communication and coordination to improve hazard response.

Palmdale Emergency Operations Plan

The Palmdale Emergency Operations Plan was developed in 2012 to serve as a guiding document for emergency/disaster response in the city and is currently being updated with the goal of City adoption by December 2022. The Plan's primary functions are to:

- Assign responsibility to organizations and individuals for carrying out specific actions at projected times and places in an emergency that exceeds the capability or routine responsibility of any one agency;
- Set forth lines of authority and organizational relationships and shows how all actions will be coordinated;
- Describes how people and property will be protected in emergencies and disasters; and
- Identifies personnel, equipment, facilities, supplies, and other resources available--within the jurisdiction or by agreement with other jurisdictions--for use during response and recovery operations.

4.20.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to wildfire would be potentially significant if the Planning Area is located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and the Plan would:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire

3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment
4. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes

Threshold 1: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would Plan implementation substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact WFR-1 A PORTION OF THE PLANNING AREA IS IN A VHFHSZ. HOWEVER, DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD NOT SUBSTANTIALLY IMPAIR ANY ADOPTED EMERGENCY RESPONSE PLANS OR EMERGENCY EVACUATION ROUTES BECAUSE IT WOULD BE SUBJECT TO ADOPTED FEDERAL, STATE, AND LOCAL DEVELOPMENT GUIDELINES THAT GOVERN WILDFIRE, EMERGENCY SERVICES, AND EMERGENCY ACCESS, AND PLAN POLICIES ADDRESS EMERGENCY PLANNING AND RESPONSE. THEREFORE, THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As shown in Figure 4.20-1, areas within the Planning Area that are designated as federal, State, or Local Responsibility Area VHFHSZs are located in the southwestern portion of the Planning Area in and near the foothills of the Los Angeles Forest. The Plan, in and of itself, does not propose specific projects but sets forth goals and policies that promulgate new housing development in Palmdale consistent with the current RHNA cycle and other requirements and expected growth. The City would evaluate development carried out under the Plan in its jurisdiction for wildfire safety, including the ability of emergency vehicles to access the site, ease of evacuation, exacerbation of fire risk, and proximity to areas prone to flooding or landslide, as part of its standard development review process.

Development proposals for individual projects would be subject to adopted federal, State, and local development guidelines that govern wildfire, emergency services, and emergency access, including the City's Hazard Mitigation Plan for wildfires, the City's Emergency Operations Plan (which is currently being updated (anticipated completion in 2022), the California Fire Code, and proposed Plan policies. Plan goals and policies related to emergency planning and response include:

- **Goal SE-2: Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
 - **Policy SE-2.7: Emergency Access Routes for Wildfire Hazard Zones.** Require all new development in or near designated wildfire hazard zones to identify multiple evacuation/emergency access routes and file with City.
 - **Policy SE-2.8: Los Angeles County Fire Department Coordination.** Continue to coordinate with the Los Angeles County Fire Department to provide emergency evacuation support and address fire hazards.

Further, LACoFD reviews and approves development projects to ensure that emergency access meets its standards. Implementation of Plan policies associated with emergency planning and response, in addition to LACoFD review, would ensure that potential impacts from implementation of the Plan on emergency response and evacuation would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would Plan implementation, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose occupants of projects carried out under the Plan to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Impact WFR-2 THE PLAN WOULD NOT EXACERBATE WILDFIRE RISK DUE TO SLOPE, PREVAILING WINDS, OR ANY OTHER FACTOR. THE PLAN WOULD NOT EXPOSE OCCUPANTS OF PROJECTS CARRIED OUT UNDER THE PLAN TO POLLUTANT CONCENTRATIONS FROM A WILDFIRE OR THE UNCONTROLLED SPREAD OF A WILDFIRE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Wildfire risk in the Planning Area is generally limited to the hillside areas in the south and southwestern portions of the Planning Area because this area is mostly undeveloped and contains large tracts of vegetation cover that can act as fire fuel. This area is also adjacent to large areas of vegetation cover and open space outside of the Planning Area, which further increases the potential for wildfires. The Plan does not include changes to land use designations in hillside areas within the Planning Area that would allow for more residential development than allowed under the current General Plan.

As described under *Environmental Setting*, winds in Palmdale generally move from the southwest. Therefore, the prevailing winds would move wildfire in the hillside area and the related smoke and air pollutants, toward the southwest and away from the urbanized areas of the City. Additionally, fire tends to burn and spread uphill, and the hillside parts of the Planning Area generally slope uphill toward the west and south, away from the developed parts of the Planning Area. Residential areas, including a school, parks, and a few businesses, are located in the southwestern portion of the Planning Area in the VHFHSZ, but development under the Plan would not introduce new people or structures to this area beyond what is currently permitted under existing zoning and land use designations. Furthermore, the Plan would include the following goals and policies related to wildfire risks:

- **Goal SE-2: Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
 - **Policy SE-2.1: Critical Facilities.** Prohibit new public or critical facilities in Very High Fire Hazard Severity Zones, except when other options do not exist.
 - **Policy SE-2.2: Redevelopment Compliance.** After a large fire, ensure that re-development located in the in the High and Very High Fire Hazard Severity Zones complies with fire safety requirements for construction, accounting for any increased risk related to climate change.
 - **Policy SE-2.3: Wildland Development.** Require that developments located in wildland interface areas incorporate and enforce standards for construction, including a fuel modification program (i.e., brush clearance, planting of fire-retardant vegetation) to reduce the threat of wildfires, accounting for any increased risk related to climate change.
 - **Policy SE-2.4: Landscaped Buffer Zones.** Provide fire-resistant landscaped buffer zones between high-risk fire hazard areas and urban development with fire clearance located on private land and maintained by the property owner(s).
 - **Policy SE-2.5: Maintain Firesafe Zones.** Require property owners to clear brush and high fuel vegetation and maintain firesafe zones (a minimum distance of 30 feet from the structure or to the property line, whichever is closer) to reduce the risk of fires. For structures located within a Very High Fire Hazard Severity Zone, the required brush clearance distance is 200 feet from structures to the property line.

- **Policy SE-2.6: Soils and Waterways.** Evaluate soils and waterways for risks from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire.
- **Policy SE-2.9: Development Requirements.** Ensure that the requirements of the Los Angeles County Fire Department are incorporated into new development through the development review process.
- **Policy SE-2.10: Water system requirements.** Require all new development to be served by a water system that meets applicable fire flow requirements.

The City would evaluate development carried out under the Plan for wildfire safety, including the ability of emergency vehicles to access the site, ease of evacuation, exacerbation of fire risk, and proximity to areas prone to flooding or landslide, as part of the City's standard development review process. Development proposals for individual projects would be subject to adopted federal, State, and local development guidelines that govern wildfire, emergency services, and emergency access, including the City's Hazard Mitigation Plan for wildfires, the California Fire Code, and applicable Plan policies. In addition, LACoFD reviews and approves development projects to ensure that emergency access meets standards. Therefore, the Plan would not exacerbate wildfire risk or expose occupants of projects carried out under the Plan to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 3: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Plan require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Impact WFR-3 THE PLAN WOULD NOT REQUIRE THE INSTALLATION OR MAINTENANCE OF ASSOCIATED INFRASTRUCTURE THAT MAY EXACERBATE FIRE RISK OR THAT MAY RESULT IN TEMPORARY OR ONGOING IMPACTS TO THE ENVIRONMENT. THEREFORE, THE IMPACT WOULD BE LESS THAN SIGNIFICANT.

The Plan would accommodate growth in Palmdale, including an estimated 22,000 new dwelling units and over 10 million square feet of commercial, industrial, and public uses. This growth would occur primarily as infill and redevelopment within the urbanized parts of the Planning Area. Therefore, most of the roads and utility infrastructure required for growth carried out under the Plan would already exist or would be built in currently developed areas, resulting in negligible temporary or ongoing environmental impacts. Because such development would occur in urbanized areas of Palmdale, where large tracts of vegetation cover are not present, the risk of wildfire would not be exacerbated.

Wildfire risk in Palmdale is generally limited to the hillside areas in the south and southwestern parts of the Planning Area because this area is mostly undeveloped and contains large tracts of vegetation cover that can act as fire fuel. This area is also adjacent to large areas of vegetation cover

and open space outside the Planning Area, which further increases the potential for wildfires. The Plan does not include changes to land use designations in these hillside areas that would allow for more or increased residential development than allowed under the current General Plan. Furthermore, the Plan would include the goals and policies related to wildfire listed under Impact WFR-1 above.

Maintenance of fire access roads could generate temporary or ongoing impacts related to noise and vegetation removal. These impacts would be less than significant because maintenance would be infrequent and limited to areas immediately next to fire access roads. Additionally, maintenance of these fire access roads would reduce the potential for severe or catastrophic wildfires, rather than exacerbate them. Accordingly, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Plan expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Impact WFR-4 THE PLAN WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO SIGNIFICANT RISKS, INCLUDING DOWNSLOPES OR DOWNSTREAM FLOODING OR LANDSLIDES, AS A RESULT OF RUNOFF, POST-FIRE SLOPE INSTABILITY, OR DRAINAGE CHANGES, AND THERE WOULD BE NO IMPACT.

Severe wildfires damage the forest or shrub canopy, the plants below, as well as the soil. This can result in increased runoff after intense rainfall, which can put homes and other structures below a burned area at risk of localized floods and landslides. Slopes at risk of wildfire in Palmdale are limited to the hillside areas in the south and southwestern portion of the Planning Area. If a severe wildfire were to occur in these hillside areas, downslope structures would be at risk of flooding or landslides. Other areas of Palmdale are generally flat to gently sloping and developed with little to no wildfire fuels or vegetation cover prone to ignition. If a structural fire or large urban fire were to occur in the more flat and urbanized areas of Palmdale, the risk of flooding or landslides afterward would be negligible because of the nearly flat topography and because little soil would be exposed due to the developed conditions. Furthermore, in addition to policies listed above, the Plan would include Policy SE-2.6, which encourages evaluation of soils and waterways for risks of flooding and erosion following a large fire.

The Plan would not include changes to land use designations in hillside areas that would increase the amount of allowed development. Therefore, the Plan would not increase the risk of flooding, landslides, post-fire slope instability, or the risk of wildland fires. There would be no impact.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

There would be no impact and therefore no need for mitigation.

Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within the Planning Area. In that sense, the analysis of the Plan's impacts also constitutes the cumulative analysis. As explained in Section 4.20.1, *Environmental Setting*, the parts of the Planning Area that are in the City of Palmdale and are in fire hazard zones are designated as an LRA, but most of the City is not within a fire hazard severity zone. The southwestern portion of the City, primarily south of Rancho Vista Boulevard and west of 25th Street West, is within a VHFHSZ. Outside of the City, Palmdale is surrounded by moderate, high, and very high fire hazard severity zones to the west and south (CAL FIRE 2007). Some of these areas are inside the City's SOI, and therefore also in the Planning Area, and some are outside the SOI and Planning Area. As concluded throughout the impact discussion parts of this chapter, the Plan would have a less than significant impact, or in some cases no impact, related to wildfires and thus would not make a substantial contribution to any cumulative impact related to wildfires.

5 Other CEQA Required Discussions

This section discusses growth-inducing impacts and irreversible environmental impacts that would be caused by implementation of the Plan.

5.1 Growth Inducement

Section 15126(d) of the CEQA Guidelines requires a discussion of a project's potential to foster economic or population growth, including ways in which a project could remove an obstacle to growth. Growth does not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant adverse environmental effects. The Plan's growth inducing potential is therefore considered significant if project-induced growth could result in significant physical effects in one or more environmental issue areas.

5.1.1 Population and Employment Growth

As discussed in Section 4.14, *Population and Housing*, and as explained in Section 2.3.5, *Residential and Employment Growth*, of this EIR, reasonably foreseeable development under the Plan is projected to result in approximately 22,000 new homes and 26,391 new jobs, which would move the city closer to a 1 to 1 jobs/housing ratio. Based on Palmdale's estimated average household size of 3.44 persons (DOF, 2022), this would lead to an increase of approximately 75,756 residents in the city. Adding the 75,756 new residents cited above to the City's 2022 population of 167,398, future residential growth carried out under the proposed project is predicted to increase the city's total population to 243,154, which is above SCAG's 2045 population forecasts of 207,000 from the 2016-2040 RTP/SCS (SCAG 2016). The addition of approximately 75,756 residents constitutes a 45% population increase between 2022 and 2045. Therefore, the Plan would accommodate substantial population growth in the area.

However, policies in the Plan would help manage the use of land so that growth, development, and redevelopment occur in an orderly manner. The following Plan policies would guide growth in the Planning Area:

- **Goal LUD-2: A City that supports and encourages new growth in the developed urban core.**
 - **Policy LUD-2.1: Focused Growth.** Direct future growth to areas closer to the center of town, which can accommodate development based upon topography, environmental factors, and availability of existing infrastructure.
 - **Policy LUD-2.2: Preferred Development Patterns.** In considering requests to amend the Land Use Map, encourage proposals for development in those areas which are functionally connected to developed portions of the city, have available infrastructure, and do not have significant topographic or jurisdictional barriers, or other similar constraints.
 - **Policy LUD-2.3: Discouraged Development Patterns.** In considering requests to amend the Land Use Map, discourage proposals for development in those areas which are functionally separated from developed portions of the city by lack of infrastructure, expanses of vacant land, significant topographic or jurisdictional barriers, or other similar constraints.

- **Goal LUD-5 All new major development in the city is designed to support high-quality neighborhoods.**
 - **Policy LUD-5.1: New Complete Neighborhoods.** Require new development to provide multiple amenities, a beautiful public realm, and be consistent with the City’s vision for complete neighborhoods.
 - **Policy LUD-5.2: Walkability of New Neighborhoods.** Require all new neighborhoods to be pedestrian friendly by including features, such as short blocks, wide sidewalks, shaded streets, buildings that define and are oriented to streets or public spaces, traffic-calming features, convenient pedestrian street crossings, and safe streets designed for pedestrians, cyclists, and vehicles.
 - **Policy LUD-5.3: Public Services in New Neighborhoods.** Require new developments to be designed for and provided with adequate public services and infrastructure. Require that these public facilities and services be provided concurrently with development to ensure a high quality of life for residents.
 - **Policy LUD-5.4: Access to Retail/Services.** Strive for a high level of connectivity of residents to neighborhood services through site design, open space linkages, and bicycle facilities. Plan for 90 percent of residents (except for in rural residential designations) to be within a fifteen to twenty minute walking distance of retail and neighborhood services.

- **Goal LUD-24: Maintain the character of rural areas.**
 - **Policy LUD-24.1: Appropriate Densities.** Avoid designating land for higher density uses where prevailing existing development patterns are rural residential with lot sizes of one acre or more.
 - **Policy LUD-24.2: Commercial Developments.** Permit neighborhood commercial development within rural areas to serve the needs of these areas, provided that such projects include safe, logical, and functional access from the adjacent neighborhoods for pedestrian and equestrian users.

Growth under the proposed project would result in a more balanced jobs-housing ratio in 2045 by increasing jobs available in Palmdale (see Table 4.14-2 in Section 4.14, *Population and Housing*). Therefore, such growth would not result in substantial adverse effects associated with an increased imbalance of jobs and housing in the City. Further, growth carried out under the Plan would be substantial, but would not be “unplanned.” As discussed in Section 2.3.1 of this EIR, the Plan’s vision for the City was developed with extensive community input and in recognition of the state’s planning priorities. The Plan focuses on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City’s unique location in the region. The Plan identifies major strategies and physical improvements for the city over the next 25 years. Because the Plan is designed for planned and orderly growth, which improves the balance of jobs and housing, impacts would be less than significant.

5.1.2 Removal of Obstacles to Growth

The Planning is an urbanized community served by existing infrastructure. As discussed in Section 4.19, *Utilities and Service Systems*, and Section 4.10, *Hydrology and Water Quality*, existing infrastructure in the Planning Area would be adequate to serve development facilitated by the Plan. One of the purposes of the Plan is to focus future development in a way that minimizes the impacts

of growth by emphasizing the development and reuse of already developed areas, thus minimizing pressure to develop on the open spaces surrounding the Planning Area. As discussed in Section 2, *Project Description*, the Plan encourages the reuse of already developed areas. Generally, most new development would result in re-use of properties, conversion of properties to different uses in response to market demand (e.g., select industrial to commercial), and more intense use of land in defined focus areas. Growth in the Planning Area is anticipated to consist of infill development rather than development on greenfield sites. Furthermore, the Plan emphasizes bicycle connections and pedestrian-oriented focus areas; proposes focus areas and activity nodes to help shape and distribute new development; promotes protecting the character of existing residential neighborhoods; and outlines the future role and form of Palmdale's public realm. Therefore, although development of vacant lands would require new infrastructure and expansion of services, new development would occur primarily where existing roads, water, and sewer are in place and in a manner that minimizes the impact of development on existing facilities and services. In addition, the goals, policies, and programs of the Plan would limit development in the Planning Area, thereby controlling, rather than removing, obstacles to growth.

5.2 Irreversible Environmental Effects

Section 15126.2(c) of the CEQA Guidelines requires that EIRs evaluating projects involving amendments to public plans, ordinances, or policies contain a discussion of significant irreversible environmental changes. CEQA also requires decision-makers to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve a project. This section addresses non-renewable resources, the commitment of future generations to the proposed uses, and irreversible impacts associated with the proposed project.

Construction activities facilitated under the Plan would involve the use of building materials and energy, some of which are non-renewable resources. Consumption of these resources would occur with any development in the region and are not unique to Palmdale or the Plan. New development in the City during the lifetime of the Plan would increase local demand for non-renewable energy resources such as petroleum, although increasingly efficient building fixtures and automobile engines, and a state energy portfolio increasingly generated from renewable resources, as well as implementation of policies included in the Plan, are expected to offset this increased demand, either in whole or in part. For these reasons, and because of Palmdale's relatively small size compared to the region, growth facilitated by the Plan would not significantly affect local or regional energy supplies.

Growth facilitated by the Plan would also require an irreversible commitment of City services, water supply, and wastewater treatment. As discussed in Section 4.15, *Public Services*, compliance with Plan policies would reduce impacts related to police and fire protection services, schools and other public facilities to less than significant. However, as discussed in Section 4.19, *Utilities and Service Systems*, impacts related to the provision of water supply facilities and wastewater facilities would be significant and unavoidable, even with adherence to applicable regulations and Plan goals and policies.

The additional vehicle trips associated with growth from implementation of the Plan would increase local traffic, noise levels, and regional air pollutant and greenhouse gas (GHG) emissions. As discussed in Section 4.3, *Air Quality*, construction and operation emissions associated with individual development projects facilitated by the Plan may conflict with the Antelope Valley Air Quality Management District's Ozone Attainment Plan and would contribute to a cumulatively

considerable net increase in criteria pollutants; impacts would be significant and unavoidable. As discussed in Section 4.8, *Greenhouse Gas Emissions*, although the Plan would result in an increase in GHG emissions, the Greenhouse Gas Inventory included in the Plan demonstrates that GHG emissions per service person would decrease over time under the Plan. Therefore, the Plan would have less than significant impacts related to GHG emissions. Implementation of Plan policies and regional air pollution programs would reduce the air pollutant and GHG emissions associated with individual future development projects. Further, compliance with Palmdale Municipal Code and implementation of Plan policies would ensure that impacts related to noise would be less than significant.

Finally, demolition and ground-disturbing activities facilitated by the Plan could cause substantial adverse changes in the significance of a historical resource. Even with implementation of applicable Plan policies and Mitigation Measure CUL-1, damage to or destruction of a known or previously unknown historical resource could occur because of the Plan. Therefore, the Plan would irreversibly impact historical resources in the Planning Area.

5.3 Significant and Unavoidable Impacts

The environmental effects of the proposed project, along with recommended mitigation measures, are discussed in detail in Section 4, *Environmental Impact Analysis*, of this EIR and summarized in the Executive Summary. The following environmental issues were determined to be less than significant, or can be reduced to less than significant with the incorporation of mitigation measures:

- Aesthetics
- Agricultural and Forestry Resources
- Biological Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Wildfire

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts, including those that can be mitigated but not reduced to less than significant levels, as a result of implementation of the project. The following environmental issues were determined to result in potential significant and unavoidable impacts:

- Air Quality: increase in ozone and criteria air pollutants beyond local and state thresholds.
- Cultural Resources: substantial adverse change in the significance of a historical resource.
- Utilities and Service Systems: insufficient water supplies available to serve the Planning Area and reasonably foreseeable future development.

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6 Alternatives

As required by Section 15126.6 of the California Environmental Quality Act (CEQA) Guidelines, this chapter of the EIR examines a range of alternatives to the Plan. Included in this analysis are the CEQA-required “no project” alternatives (no growth, and growth in accordance with the City’s current General Plan). In addition, a Reduced Growth Alternative is proposed to address potential impacts associated with growth. The alternatives are listed below:

- Alternative 1: No Project (see Section 6.1)
- Alternative 2: Reduced Growth Alternative (see Section 6.2)

Alternative 1: No Project, analyzes growth in accordance with the City’s current General Plan. The City also considered a “no growth” alternative, but rejected it as infeasible for the reasons discussed in Chapter 6.3 of this EIR. As required by CEQA, this chapter includes a discussion of the “environmentally superior alternative” among those studied (see Section 6.4).

Section 15126.6(a) of the CEQA Guidelines states the following:

“An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.”

The City of Palmdale, in its role as lead agency, has determined that the alternatives analyzed in this chapter of the EIR represent a reasonable range of alternatives to the Plan. Section 6.3 of this EIR includes a discussion of alternatives considered but rejected by the lead agency because they either did not meet the objectives of the project, were considered infeasible, or would not avoid or substantially lessen one or more significant effects of the Plan.

6.1 Alternative 1: No Project Alternative

6.1.1 Description

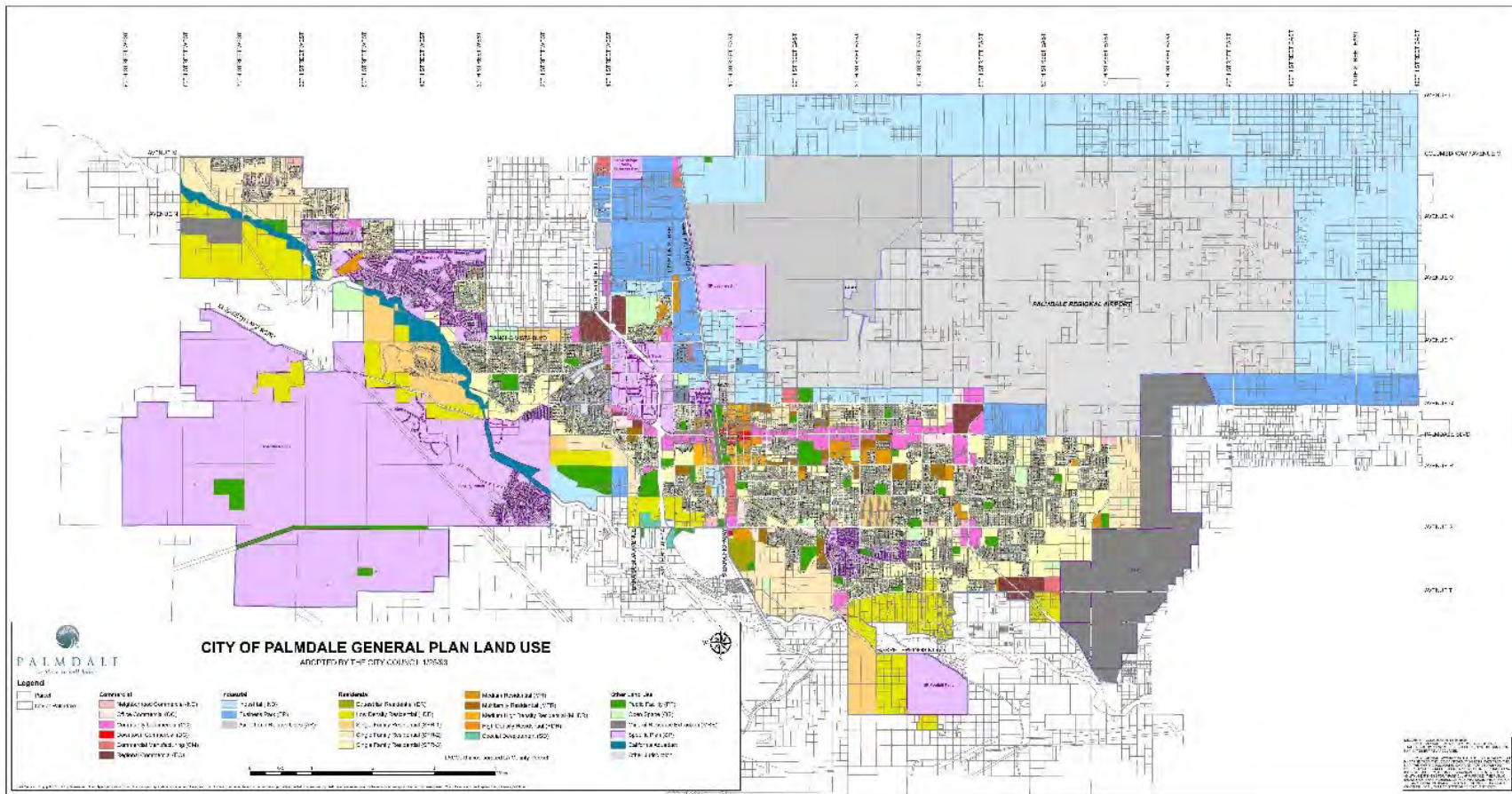
The “No Project” Alternative involves continued implementation of the City’s current General Plan, the last comprehensive update of which was adopted in 1993. The City also considered a “no growth” alternative, but rejected it as infeasible for the reasons discussed in Section 6.3 of this EIR. The No Project Alternative assumes that the proposed Plan would not be adopted and therefore future development would be carried out under the City’s existing General Plan policies and land use designations. The overall amount of growth anticipated to occur under the City’s current General Plan is less than anticipated to occur under the proposed Plan. The proposed Plan includes additional land use designations for mixed housing densities focused around the future downtown area and across Palmdale Boulevard with education and medical districts strategically distributed

within the City. Therefore, it also increases the City's total potential population and amount of commercial development compared to the current General Plan. As discussed in Chapter 4.14 *Population and Housing* under the current General Plan, the City's population is not expected to reach the SCAG forecast of 207,000 by 2040, while under the proposed Plan future residential growth is predicted to increase the City's total population to 236,480. SCAG forecasts for population, households, and employment in Palmdale through the year 2045 are shown in Table 2-3 of Chapter 2, *Project Description* of this EIR.

The Plan identifies major strategies and physical improvements for the City over the next 25 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. In contrast, the No Project Alternative would continue to facilitate development in the same pattern as currently seen in the Planning Area. This pattern of land uses is reflected in the City's current Land Use Map, shown in Figure 6.1.

Under the Plan, new development would generally result from re-use of properties, infill development on vacant lots, conversion of uses in response to market demand (e.g., mixed use developments), and more intense use of land in defined areas. Additionally, most development under the Plan would be in the industrial and office space land use designations. Growth would be redirected to downtown Palmdale as well as the numerous land use districts established in the Plan. While new development under the No Project Alternative would also result from re-use of properties, conversion of uses in response to market demand, and development on vacant lots, this alternative would not include as much land zoned for medium-density residential or mixed use development as the focus areas included under the Plan, and new development would therefore be spread throughout the Planning Area rather than in defined areas to a greater degree than under the Plan. Therefore, rather than potentially creating more intense use of land in the geographically well-defined focus areas, a lower amount of new, market-driven development would occur, and development under Alternative 1 would likely be spread more widely across the Planning Area, without the adjustments in land use, beautification, and placemaking included in the Plan.

Figure 6-1 Palmdale Current General Plan Land Use Map



6.1.2 Impact Analysis

a. Aesthetics

As discussed in Impact AES-3 in Chapter 4.1, *Aesthetics*, the Plan, when compared to the City's current General Plan, places a greater emphasis on enhancing community identity, building on planned infrastructure investments, integrating health and equity, and capitalizing on the Planning Area's unique location in the region. The vision established by the Plan places a greater emphasis on an active and vibrant downtown and transforming Palmdale Boulevard a mixed-use corridor. The Plan defines (both physically and visually) the desired visual character and quality of these areas and sets forth urban form policies to ensure that the Planning Area retains the unique aesthetic qualities valued by Palmdale residents. The Plan does not call for substantial changes to established residential neighborhoods, and includes specific policies aimed at retaining the character of the neighborhoods. The No Project Alternative would not include these features and could therefore lead to a lower level of visual character and quality for certain parts of the Planning Area, and perhaps for the Planning Area as a whole, thereby potentially creating a greater impact to visual character and quality than the Plan. There would be less change to visual character and light and glare conditions in the Planning Area compared to the Plan because this alternative would reduce overall development. Less development in the focus areas would result in fewer light sources and slightly reduced light and glare impacts. Impacts to scenic vistas under this alternative would be less than those of the Plan because reduced development would mean fewer buildings partially blocking views. Because this alternative's aesthetics impacts would be greater than the Plan's in some respects but less than the Plan's in others, its overall aesthetic impacts would be similar those of the Plan.

b. Agricultural and Forestry Resources

As described in Chapter 4.2, *Agricultural Resources* the Planning Area contains approximately 4,898 acres of agricultural land, which comprises approximately 4.6 percent of the Planning Area (Raimi & Associates 2021c). The agricultural land primarily consists of Prime Farmland, with small areas of Farmland of Statewide Importance and Unique Farmland. The Plan focuses on infill and urban development, would not involve specific development on Farmland, and would contain goals and policies related to the conservation of Farmland within the Planning Area, or any other land use changes that would substantially contribute to farmland conversion. Therefore, the Plan would not involve the conversion of Farmland to non-agricultural use. The Planning Area does not include areas forest land, timberland, or timberland zoned Timberland Production. No lands within the Planning Area are currently designated as forest land or timberland in the City's General Plan, and no lands within the City are zoned for timberland production. Therefore, the Plan would not conflict with existing zoning or cause rezoning of forest land, timberland, or areas zoned for timberland production. The Plan would therefore not result in conversion of farm or forest land, nor would it conflict with existing zoning for agricultural or forest use, and it would not have any significant impact environmental impacts on agricultural and forestry resources.

The No Project alternative would also not have any significant environmental impacts on agricultural and forestry resources. The area in which most of the agricultural land in the Planning Area is located is currently designated as Industrial (IND) or as Airport and Related Uses in the City's existing General Plan and is zoned as Planned Industrial in the City's municipal code. Future development facilitated by the existing General Plan would be subject to existing federal and State laws and regulations that aim to conserve and protect farmland, as well as existing General Plan

policies that would discourage development in agricultural areas and the conversion of Farmland to non-agricultural use. Overall, the agricultural and forestry resources of this alternative would be similar to those of the Plan.

c. Air Quality

As with the Plan, impacts to Air Quality under this alternative would be significant and unavoidable. As discussed in Impact AQ-1, AQ-2, and AQ-3 in Chapter 4.3, *Air Quality* of this EIR, individual developments projects carried out under the Plan would generate construction and operational-related emissions. Even with implementation of Plan policies, compliance with existing regulations, and implementation of mitigation measures, construction and operational emissions would exceed applicable emissions thresholds. The Plan would result in a cumulatively conservable net increase of criteria pollutants; however, impacts related to exposing sensitive receptors to substantial pollutant concentrations and other emissions such as odors would be less than significant. The same would be true with the No Project Alternative. Under this alternative, individual projects would be constructed and operated under City's current General Plan, and as such would be subject to existing General Plan policies intended to mitigate air quality impacts; however, buildout would result in significant impacts as emissions would exceed applicable thresholds. Further, buildout under the existing General Plan would result in a cumulative net increase of criteria pollutants. As with development under the Plan, development under the No Project Alternative would be subject to applicable Antelope Valley Air Quality Management District (AVAQMD) policies, and the reduced amount of construction under the No Project Alternative would result in reduced construction emissions and slightly reduced impacts to air quality under this alternative. However, impacts would remain significant and unavoidable.

d. Biological Resources

As described in Chapter 4.4, *Biological Resources*, development carried out under the Plan could potentially adversely affect biological resources and as a result Mitigation Measures BIO-1 would be required. This mitigation measures, along with Plan policies described in Chapter 4.4, would reduce impacts to biological resources to a less than significant level. Development carried out under the No Project Alternative would occur under the City's current General Plan, which does not include these Plan policies or mitigation measures. Development under the City's current General Plan might also tend to be more dispersed than under the proposed Plan, which would redirect to downtown Palmdale as well as the numerous land use districts established in the Plan. As a result, impacts under this alternative would be greater than those of the Plan.

e. Cultural Resources

As discussed in Impact CUL-1 and CUL-2 in Chapter 4.5 *Cultural Resources* of this EIR, the Plan would have less than significant impacts to historical resources with mitigation. Impact CUL-1 describes how the Plan has the potential to result in a significant impact if development carried out under the Plan caused a substantial adverse change in the significance of a historical resource and as a result Mitigation Measure CUL-1 would be required. Impact CUL-2 describes how the Plan has the potential to result in a significant impact if development carried out under the Plan caused a substantial adverse change in the significance of an archaeological resource and as a result mitigation measures CUL-2 through CUL-8 would be required. Impact CUL-3 describes how the Plan has the potential to disturb or damage human remains, and the existing regulations that address this potential impact.

Under the No Project Alternative development would still occur but would be carried out under the City's current General Plan, with a lower amount of new, market-driven development likely spread more widely across the Planning Area than under the Plan. However, because it is not known where archaeological resources and human remains may exist, and this alternative would involve potential impacts to these resources, potential impacts to these resources would be greater under this scenario.

The No Project Alternative would potentially increase impacts to historic and archaeological resources compared to the Plan. As discussed in Chapter 4.5 *Cultural Resources*, the Plan does not call for substantial changes to established residential neighborhoods and includes specific policies aimed at preserving historic resources. The No Project Alternative would not include these elements and would, therefore, be more likely than the Plan to lead to or allow the loss of, or negative effects on, historic resources in such areas. Additionally, the No Project Alternative would not include the specific mitigation measures described in Chapter 4.5. This alternative would therefore have potentially greater impacts to cultural resources than the Plan.

f. Energy

Because development under the No Project Alternative would still occur but would be carried out under the City's current General Plan, with a lower amount of new, market-driven development likely spread more widely across the Planning Area than under the Plan, the Plan and the No Project Alternative do not have substantially different development footprints, at least in terms of land area. However, the Plan's land use scenario encourages a greater degree of high-density development. While the City's current General Plan does contain some energy efficiency policies, it does not contain any transportation demand management policies that would reduce VMT or encourage the installation of electric vehicle infrastructure, nor is it as consistent with energy efficiency goals contained in the City's Energy Action Plan or proposed Climate Action Plan. Therefore, inefficient and unnecessary consumption of energy would be greater under this alternative. Overall, the No Project Alternative would have greater energy impacts than the Plan.

g. Geology and Soils

Under the No Project Alternative, development would occur within the same Planning Area as the Plan. Therefore, development under this alternative would occur on the same geologic units, soils, and slopes as under the Plan. Development under this alternative would, like development under the Plan, be required to comply with applicable regulations, such as the California Building Code, the Palmdale Municipal Code, and the Clean Water Act. Because this alternative and the Plan would not substantially differ in land area development footprints, they would have similar potential for loss of topsoil, placement of development atop expansive soils, or accidental discovery of paleontological resources. Therefore, impacts associated with topsoil loss and expansive soils would be similar under the No Project Alternative and the Plan. As described in Chapter 4.7, *Geology and Soils*, impacts from development carried out under the Plan would be less than significant with adherence to applicable building codes and Plan policies. Development carried out under the No Project Alternative would occur under the City's current General Plan, which does not include these Plan policies. As a result, potential impacts to these resources under this alternative would be greater than those of the Plan. Overall, this alternative would be more impactful in some respects than the Plan, and its potential impacts related to geology and soils would therefore be greater than those of the Plan.

h. Greenhouse Gas Emissions

Implementation of the No Project Alternative would result in a lower amount of new, market-driven development that would likely be spread more widely across the Planning Area and would involve less overall development and associated growth than would occur under Plan. Therefore, this alternative would reduce construction related GHG emissions compared to the Plan. However, because development would be more dispersed under this alternative and not concentrated in identified focus areas, total VMT and per capita VMT would be greater under this alternative than under the Plan, as shown in Table 4.17-14 of this EIR. The land use scenario and the associated GHG emissions envisioned under this alternative would also not be consistent with applicable state regulations that were adopted after the City's current General Plan, including the City's proposed Climate Action Plan and SCAG's latest RTP/SCS. The Plan also contains policies intended to facilitate greater GHG emission reductions than is mandated under the City's current General Plan. Because this alternative would not include GHG emissions reduction policies and programs, it could contribute to greater GHG emissions than the Plan. Therefore, while the No Project Alternative would result in fewer GHG emissions during construction, the other factors discussed above could contribute to increased operational GHG emissions. Overall, this alternative's greenhouse gas emissions impacts would therefore be similar to those of the Plan.

i. Hazards and Hazardous Materials

The No Project Alternative would result in less development than the Plan, so it would result in slightly less use and transport of hazardous materials than the Plan. This development, however, would still take place in the Planning Area. The City's current General Plan contains policies regarding the handling, storage, and collection of hazardous materials, but the Plan includes additional policies related to hazardous materials transportation routes, partnerships, remediation, education, and emergency plans, which would better prevent exposure to hazardous materials. Therefore, while the No Project Alternative would have less than significant hazardous materials impacts, its overall impacts would be greater than those of the Plan.

j. Hydrology and Water Quality

The No Project Alternative would result in less development than the Plan. Therefore, development under this alternative would result in slightly reduced impervious surfaces and stormwater runoff volumes and velocity as the Plan. Both the City's current General Plan and the Plan contain policies to reduce potential water quality impacts. Development under this alternative would be subject to the same regulatory requirements, such as NPDES permit requirements, governing runoff and protecting water quality and supply, as development carried out under the Plan. The No Project Alternative, however, would result in a smaller population in 2040, and demand for groundwater would be less than that of the Plan. Impacts to hydrology and water quality under this alternative would be less than those of the Plan.

k. Land Use and Planning

As discussed under Impact LU-2 in Chapter 4.11, *Land Use and Planning*, the Plan would be generally consistent with the policies of SCAG's RCP and RTP/SCS. The No Project Alternative would not be as consistent with these policies because it would not include the Plan goals and policies described in Chapter 4.11. Development under the Plan would also help the City meet its RHNA allocation. The No Project Alternative would lead to less residential development than the Plan and as a result would not help the City meet its RHNA allocation to the same degree as the Plan. Thus, the No

Project Alternative would not be consistent with state policies for the provision of adequate housing represented by the RHNA. The No Project Alternative's overall land use and planning impacts would be greater than those of the Plan.

I. Mineral Resources

The No Project Alternative would result in less development than the Plan. However, development under this alternative would still take place in the Planning Area. Therefore, development under the No Project Alternative could result in development in areas where significant mineral resources exist. As described in Impact MIN-1, projects carried out under the Plan would be required to adhere to SMARA regulations, Title 17 Chapter 17.102 and Chapter 17.72 of the Palmdale Municipal Code (described in Section 4.12.2, *Regulatory Setting*). The same would be true under the No Project Alternative. However, projects carried out under the Plan would also be required to be consistent with the Plan goals and policies relevant to mineral resources. Development carried out under the No Project Alternative would occur under the City's current General Plan, which does not include these policies. Therefore, this alternative's overall impact to mineral resources would be greater than that of the Plan.

m. Noise

The No Project Alternative would result in less development than the Plan. Therefore, less construction and associated construction noise and vibration would occur under this alternative than under the Plan, particularly in the identified development areas and housing opportunity sites in the Plan. However, construction noise under this alternative might be spread more widely across the Planning Area. Also, while this alternative would result in less development, the City's current General Plan has fewer operational noise reduction policies and restrictions than the Plan. Furthermore, Mitigation Measure N-1, which requires construction vibration control measures, would not be included in this alternative. Therefore, the No Project Alternative's noise impacts would be greater than those of the Plan.

n. Population and Housing

Under the No Project Alternative, the existing land use designations in the City's current General Plan would continue to define the type of development that occurs in the Planning Area. Implementation of this alternative would accommodate fewer residents and housing units than the Plan, which would increase allowable residential development densities in certain focus areas. Thus, compared to the Plan, the No Project Alternative would result in less population growth, which would be more consistent with SCAG projections for Palmdale than projected residential growth under the Plan, although policies and actions included in the Plan would adequately address potential impacts of this projected population growth. Any displacement of people or housing units under the No Project Alternative would be minimal because development in the Planning Area would continue pursuant to the existing General Plan, but this impact would also be minimal under the Plan, as described in Impact PH-2 of this EIR. Still, because of the lower total population growth it would accommodate, this alternative's population and housing impacts would be less than those of the Plan.

o. Public Services

Under the No Project Alternative, the existing land use designations in the City's current General Plan would continue to define the type of development that occurs throughout the Planning Area.

This alternative would result in less development than the Plan and would therefore generate less demand for fire, police, school, and library services. While, as discussed in Chapter 4.15, *Public Services*, the Plan includes policies that direct the City to strive to maintain adequate public service facilities, the City's current General Plan contains some similar policies. The No Project Alternative would result in a demand for public services already anticipated by existing public service facilities, while the Plan would result in additional demand. Because of the lower total population growth it would accommodate, this alternative's public services impacts would be less than those of the Plan.

p. Recreation

Under the No Project Alternative, the existing land use designations in the City's current General Plan would continue to define the type of development that occurs throughout the Planning Area. This alternative would result in less development than the Plan and would therefore generate less demand for, and demand on, recreational facilities. While, as discussed in Chapter 4.16, *Recreation*, the Plan includes policies that direct the City to strive to maintain adequate recreational facilities, the City's current General Plan contains some similar policies. The No Project Alternative would result in a demand for, and demand on, recreational services already anticipated by existing recreational facilities, while the Plan would result in additional demand. Because of the lower total population growth it would accommodate, this alternative's impacts on recreation would be less than those of the Plan.

q. Transportation

Under the No Project Alternative, the existing land use designations in the City's current General Plan would continue to define the type of development that occurs throughout the Planning Area. Implementation of the No Project Alternative would result in less new, market-driven development that would likely be spread more widely across the Planning Area and would involve less overall development and associated growth than would occur under Plan. Because development would be more dispersed under this alternative and not concentrated in identified focus areas, it would result in greater per capita VMT and would therefore be more inconsistent with CEQA Guidelines Section 15064.3 subdivision (b) than the Plan. The No Project alternative would also not include policies described in Chapter 4.17, *Transportation* of this EIR that reduce traffic hazards, address emergency access and the circulation system, and multimodal and alternative transportation. Therefore, this alternative would result in greater transportation impacts than the Plan.

r. Tribal Cultural Resources

As discussed in Chapter 4.18, *Tribal Cultural Resources*, tribal cultural resources impacts are highly dependent on both the individual project site conditions and the characteristics of the proposed activity. Development carried out under the Plan has the potential to impact unidentified tribal cultural resources. Impacts on tribal cultural resources would be potentially significant but mitigable. Under the No Project Alternative, the existing land use designations in the City's current General Plan would continue to define the type of development that occurs throughout the Planning Area. Because development would occur within the same Planning Area as the Plan, this alternative's potential to encounter tribal cultural resources would be similar to the Plan. This alternative, however, would not include mitigation measures TCR-1 and TCR-2, which would protect tribal cultural resources. Impacts to tribal cultural resources under the No Project Alternative would therefore be greater than under the Plan.

s. Utilities and Service Systems

As discussed in Chapter 4.19, *Utilities and Service Systems*, development carried out under the Plan would or may require increased or expanded water supplies and wastewater, stormwater, telecommunications, electric power, and natural gas supplies and facilities. While compliance with policies in the Plan, the Palmdale Municipal Code, and other City programs would reduce these impacts, impacts on water supply and wastewater capacity would remain significant and unavoidable. The No Project Alternative would result in less development and less population increase than the Plan, which would tend to decrease demand on existing utilities and service systems, but it would not include policies from the Plan that address water supply, wastewater, and solid waste. Still, development under the No Project Alternative would tend to be more consistent with the existing demand projections of utility service providers. Therefore, utilities impacts under this alternative would be less than under the Plan.

t. Wildfire

As discussed in Chapter 4.20, *Wildfire*, although a portion of the Planning Area is in a very high fire hazards severity zone, Plan policies related to wildfire risk would reduce impacts to a less than significant level. The No Project Alternative would be carried out in the same Planning Area as the Plan including areas in very high fire hazard severity zones. Development carried out under the No Project Alternative would occur under the City's current General Plan, which does not include these Plan policies. Therefore, this alternative's overall wildfire impact would be greater than that of the Plan.

6.2 Alternative 2: Reduced Growth Alternative

6.2.1 Description

The Reduced Growth Alternative (Alternative 2) is included in this chapter of the EIR to address potential growth-related impacts associated with the Plan. The Reduced Growth Alternative is based in part on a report to the Mayor and Members of the City Council from the City Manager that analyzed land use alternatives for the General Plan update (Palmdale 2020). This analysis assumes that "Alternative 2" described in the report would be the reduced growth alternative.

Although this alternative would result in less overall development than the Plan, development is assumed to occur in the same general locations as under the Plan, and be subject to the same goals, policies, and development standards as under the Plan.

Implementation of the Reduced Growth Alternative would result in development within the Planning Area that would generally meet the project objectives established for the Plan, although in some cases to a lesser degree than the Plan. This alternative would result in lower housing density than the Plan and thus would, overall, result in less housing and population growth. However, this alternative would result in more growth in the aerospace industrial sector, similar moderate growth in other industrial sectors, and a marginally greater amount of growth in employment flex sectors (mixed use development of lighter industrial uses and more intensive service, retail, and wholesale commercial uses including R&D, small warehouses, office, and medical uses in a walkable and/or auto-accessible environment). Under this alternative, village centers would also have exclusively commercial uses as opposed to the higher density mixed use retail and residential uses envisioned under the Plan. According to a Future Conditions report prepared by Parsons, overall employment

under this alternative would be similar to the Plan while population and household growth would decrease by 2 and 4 percent respectively (Parsons 2021). As discussed in Chapter 4.14, *Population and Housing*, the Plan would help the City meet its Regional Housing Needs Assessment (RHNA) allocation. The Reduced Growth Alternative would do this to a lesser degree than the Plan. The decrease in population would also result in producing fewer work-related trips within the Palmdale city limits. This would contribute to Palmdale being a net importer of commuters, thereby increasing longer commutes. Longer commutes would result in increased VMT, which would be contrary to the proposed Plan's goal of "striving to become a self-contained community."

6.2.2 Impact Analysis

a. Aesthetics

As discussed in Impact AES-3 in Chapter 4.1, *Aesthetics*, the Plan, when compared to the City's current General Plan, places a greater emphasis on enhancing community identity, building on planned infrastructure investments, integrating health and equity, and capitalizing on the Planning Area's unique location in the region. The vision established by the Plan places a greater emphasis on an active and vibrant downtown and transforming Palmdale Boulevard a mixed-use corridor. The Plan defines (both physically and visually) the desired visual character and quality of these areas and sets forth urban form policies to ensure that the Planning Area retains the unique aesthetic qualities valued by Palmdale residents. The Plan does not call for substantial changes to established residential neighborhoods, and includes specific policies aimed at retaining the character of the neighborhoods.

The Reduced Growth Alternative would implement the same policies as the Plan but would involve less residential and non-residential development than the Plan. Impact related to visual quality under this alternative would be similar to those of the Plan because the same Plan policies would apply to new development, but impacts to visual character may be reduced because less development would produce less change to visual character. As discussed in Chapter 4.1.2, Section 17.86.030 of the Palmdale Municipal Code includes lighting standards for protecting the aesthetic character of the City. This alternative would be subject to these same regulations. This alternative may introduce fewer sources of light and glare to the Planning Area, however, because of the reduced total amount of development. Therefore, light and glare impacts would be less than those of the Plan. Impacts to scenic vistas under this alternative would be less than those of the Plan because reduced development would mean fewer buildings partially blocking views. Overall, this alternative's aesthetic impacts would be less than those of the Plan.

b. Agricultural and Forestry Resources

As described in Chapter 4.2 *Agricultural Resources*, the Planning Area contains approximately 4,898 acres of agricultural land, which comprises approximately 4.6 percent of the Planning Area (Raimi & Associates 2021c). The agricultural land primarily consists of Prime Farmland, with small areas of Farmland of Statewide Importance and Unique Farmland. The Plan focuses on infill and urban development, would not involve specific development on Farmland, and would contain goals and policies related to the conservation of Farmland within the Planning Area. Therefore, the Plan would not involve the conversion of Farmland to non-agricultural use. The Planning Area does not include areas forest land, timberland, or timberland zoned Timberland Production. No lands within the Planning Area are currently designated as forest land or timberland in the City's General Plan, and no lands within the City are zoned for timberland production. The same would be true of the

Reduced Growth Alternative because it would also not involve development in these areas. Therefore, neither the Plan nor this alternative would conflict with existing zoning or cause rezoning of forest land, timberland, or areas zoned for timberland production; result in conversion of farm or forest land; or conflict with existing zoning for agricultural or forest use. Additionally, the Reduced Growth Alternative would implement the same policies relating to agricultural resources as the Plan. Therefore, neither the Plan nor this alternative would have any significant impact environmental impacts on agricultural and forestry resources. Therefore impacts would be the same under either the Reduced Growth Alternative or the Plan.

c. Air Quality

As with the Plan, impacts to Air Quality under this alternative would be significant and unavoidable. As discussed in Impact AQ-1, AQ-2, and AQ-3 in Chapter 4.3, Air Quality of this EIR, individual developments projects carried out under the Plan would generate construction and operational-related emissions. Even with implementation of Plan policies, compliance with existing regulations, and implementation of mitigation measures, construction and operational emissions would exceed applicable emissions thresholds. The Plan would result in a cumulative net increase of criteria pollutants; however, impacts related to exposing sensitive receptors to substantial pollutant concentrations and other emissions such as odors would be less than significant. While construction and operational-related emissions would be reduced as overall growth would be reduced under this alternative, impacts of this alternative would be similar to impacts of the Plan. . Under either scenario, individual projects would be constructed and operated, but they would be subject to existing General Plan policies intended to mitigate air quality impacts. Additionally, as with development under the Plan, development under the Reduced Growth Alternative would also be subject to applicable AVQMD policies. The reduced amount of construction under this alternative would result in reduced construction emissions and slightly reduced impacts; however, impacts to air quality would remain significant and unavoidable.

While the Reduced Growth Alternative would result in less development overall, it would still include the same goals and policies as the Plan and could therefore still focus growth in the identified infill focus areas. Per capita VMT per capita could therefore be similarly reduced compared to the Plan, at least for new development. Overall, because of its reduced total amount of development and potentially similar per capita VMT, this alternative's air quality impacts would be less than those of the Plan.

d. Biological Resources

As described in Chapter 4.4, *Biological Resources*, development carried out under the Plan could potentially adversely affect biological resources and as a result mitigation measures BIO-1 would be required. These mitigation measures, along with Plan policies described in Chapter 4.4, would reduce impacts to biological resources to a less than significant level. Development carried out under the Reduced Growth Alternative would be subject to the same mitigation measures and Plan policies. Under the Reduced Growth Alternative less development and construction would take place, which could result in reduced impacts to biological resources depending on its location. While development under this alternative would still be subject to the Plan's goals and policies and would thus tend to be infill rather than greenfield development, sensitive biological resources may occur through the Planning Area and the reduced total amount of development under this alternative would tend to reduce potential impacts to biological resources. Overall, this alternative's impacts to biological resources would be less than those of the Plan.

e. Cultural Resources

Impacts to Cultural Resources, as discussed in Impact CUL-1 and CUL-2 in Chapter 4.5 *Cultural Resources* of this EIR, would be significant but mitigable. Impact CUL-1 describes how the Plan has the potential to result in a significant impact if development carried out under the Plan caused a substantial adverse change in the significance of a historical resource and as a result mitigation measure CUL-1 would be required. Impact CUL-2 describes how the Plan has the potential to result in a significant impact if development carried out under the Plan caused a substantial adverse change in the significance of an archaeological resource and as a result mitigation measures CUL-2 through CUL-8 would be required. Impact CUL-3 describes how the Plan has the potential to disturb or damage human remains, and the existing regulations that address this potential impact. Implementation of Plan policies and further mitigation would ensure that impacts to cultural resources would be less than significant. Under the Reduced Growth Alternative there would be less total development, but development would still be carried out. Because it is not known where archaeological resources and human remains may exist, and both the Plan and this alternative would involve potential impacts to these resources, potential impacts to these resources would be similar under either scenario. This alternative would involve the same Plan policies and mitigation as described in Chapter 4.5, *Cultural Resources*, but would facilitate less development. Therefore, this alternative would have less impact on cultural resources because of the reduced overall amount of development.

f. Energy

The Reduced Growth Alternative would reduce development in the Planning Area compared to the Plan. Less overall development would result in less construction and thus reduced energy consumption for construction vehicles. Similarly, less development would result in less consumption of energy from operational uses including heating and transportation fuel. Like the Plan, the Reduced Growth Alternative would implement new energy efficiency and renewable energy policies that would reduce energy consumption and would be consistent with energy goals and policies contained in the City's proposed Climate Action Plan. Therefore, this alternative would have reduced energy consumption. Overall, this alternative's energy impacts would be less than those of the Plan.

g. Geology and Soils

Under the Reduced Growth Alternative development would occur within the same Planning Area as the Plan. Therefore, development under this alternative would occur on the same geologic units, soils, and slopes as under the Plan. However, development would not be as intensive as the Plan; thus, the potential for loss of topsoil, placement of development atop expansive soils, or accidental discovery of paleontological resources would be reduced under this alternative. Development under this alternative would be required to comply with applicable regulations, such as the California Building Code, the Palmdale Municipal Code, and the Clean Water Act. Therefore, under the Reduced Growth Alternative, risks associated with topsoil loss and expansive soils would be less than those of the Plan.

h. Greenhouse Gas Emissions

Implementation of the Reduced Growth Alternative would involve less overall development and associated growth than under the Plan. Therefore, this alternative would have less construction related GHG emissions than the Plan. Additionally, this alternative would result in less total VMT

and related GHG emissions. However, its per capita VMT emissions may be roughly similar, or perhaps even somewhat greater, than those of the Plan because it would accommodate a lower total population and less growth in infill areas. While this alternative would result in fewer sources of GHG emissions, the land use scenario and the associated GHG emissions envisioned under this alternative would still be subject to and consistent with applicable state regulations contained in the Plan including City's proposed Climate Action Plan and the SCAG 2020-2045 RTP/SCS. The Plan also contains policies intended to facilitate greater GHG emission reductions which would also be included in the Reduced Growth Alternative. While total emissions may in some respects be reduced under this alternative because of lower total population, per capita emissions may be similar or perhaps even somewhat greater than those of the Plan because it would involve less growth in infill areas. Therefore, the Reduced Growth Alternative's GHG emissions impacts would be roughly similar to those of the Plan.

i. Hazards and Hazardous Materials

The Reduced Growth Alternative would result in less development than the Plan. Therefore, development under the Reduced Growth Alternative would result in slightly less use and transport of hazardous materials than the Plan. Development under this alternative would still take place in and affect the Planning Area, but Plan policies related to hazardous materials transportation routes, partnerships, remediation, education, and emergency plans, which would help prevent exposure to hazardous materials, would also be included in this alternative. Therefore, the Reduced Growth Alternative would reduce these impacts compared to the Plan.

j. Hydrology and Water Quality

The Reduced Growth Alternative would result in less development than the Plan, while consisting of a similar land use pattern as the Plan (but at a lower intensity). Therefore, development under this alternative could result in slightly less impervious surfaces and stormwater runoff volumes and velocity than the Plan. The Plan contains policies to reduce potential water quality impacts and development, and under this alternative future development would be subject to the same policies, as well as the same regulatory requirements, such as NPDES permit requirements, governing runoff and protecting water quality and supply. In addition, the Reduced Growth Alternative would result in a smaller population in 2040, and demand for groundwater would be less than under the Plan. Impacts under this alternative would be less than those of the Plan.

k. Land Use and Planning

As discussed under Impact LU-2 in Chapter 4.11 *Land Use and Planning*, the Plan would be generally consistent with the policies of SCAG's RCP and RTP/SCS. The Plan would also help the City meet its RHNA allocation. The Reduced Growth Alternative would reduce residential development compared to the Plan and as a result would not help the City meet its RHNA allocation to the same degree as the Plan. Thus, the Reduced Growth Alternative would not be as consistent with state policies for the provision of adequate housing represented by the RHNA and would therefore have greater impacts related to land use and planning.

l. Mineral Resources

The Reduced Growth Alternative would result in less development than the Plan. However, development under this alternative would still take place in the Planning Area. Therefore, development under this alternative would result in potential for development in areas where

significant mineral resources exist. However, as described in Impact MIN-1, projects carried out under the Plan would be required to adhere to SMARA regulations, Title 17 Chapter 17.102 and Chapter 17.72 of the Palmdale Municipal Code (described in Section 4.12.2, *Regulatory Setting*). The same would be true under the Reduced Growth Alternative. None of the growth under either alternative would substantially impact availability of or access to mineral resources. This alternative would therefore have similarly less than significant potential impacts on mineral resources.

m. Noise

The Reduced Growth Alternative would result in less development than the Plan. Therefore, less construction and associated construction noise and vibration would occur under this alternative, particularly in the identified development areas and housing opportunity sites for the Plan. Additionally, noise reduction policies and restrictions included in the Plan would also be included in the Reduced Growth Alternative. Furthermore, Mitigation Measure N-2, which requires construction vibration control measures, would also be included in this alternative. Therefore, the Reduced Growth Alternative would have reduced noise impacts compared to the Plan.

n. Population and Housing

The Reduced Growth Alternative would result in less residential development than the Plan, which would result in less population growth than the Plan. This alternative would therefore be more consistent with SCAG projections for Palmdale than projected residential growth under the Plan. As discussed under Impact PH-1 in Chapter 4.14, *Population and Housing*, policies and actions included in the Plan would adequately address the projected population growth and Plan impacts related to population and housing. This alternative would include these policies and actions, and would still provide for the orderly development and growth of the Planning Area. Displacement of people or housing units under the Reduced Growth Alternative may also be reduced because development in the Planning Area would be reduced compared to the Plan, although this impact would be minimal under the Plan, as described in Impact PH-2 of this EIR. Still, because of the lower total population growth it would accommodate, the Reduced Growth Alternative's population and housing impacts would be less than those of the Plan.

o. Public Services

The Reduced Growth Alternative would result in less development than the Plan and would therefore generate less demand for fire, police, school, and library services. Additionally, as discussed in Chapter 4.15, *Public Services*, the Plan includes policies that direct the City to strive to maintain adequate public service facilities and the same policies would apply to the Reduced Growth Alternative. Overall, this alternative's public services impacts would be less than those of the Plan.

p. Recreation

The Reduced Growth Alternative would result in less development than the Plan and would therefore generate less demand for, and demand on, recreational facilities. This alternative would also include Plan policies that direct the City to strive to maintain adequate recreational facilities, as discussed in Chapter 4.16, *Recreation*. Therefore, this alternative's impacts to and from recreational facilities would be less than those of the Plan.

q. Transportation

The Reduced Growth Alternative would result in less overall development than the Plan, but development is assumed to occur in the same general locations as under the Plan, and be subject to the same goals, policies, and development standards as under the Plan. The same policies from the Plan regarding transportation, traffic, and multimodal and alternative transportation would apply so impacts to traffic hazards, emergency access, and the circulation system would be similar. The Plan would increase transit-friendly development in identified focus areas which in turn would result in a reduction in per capita VMT. Although it would likely reduce in less total VMT than the Plan, the Reduced Growth Alternative would result in less development in the identified focus areas and therefore VMT per capita would not be reduced to the same degree as under the Plan. Because of its potential to result in greater per capita VMT than the Plan, overall transportation impacts under this alternative would be greater than under the Plan.

r. Tribal Cultural Resources

As discussed in Chapter 4.18 *Tribal Cultural Resources*, tribal cultural resources impacts are highly dependent on both the individual project site conditions and the characteristics of the proposed activity. Development carried out under the Plan has the potential to impact unidentified tribal cultural resources. Impacts on tribal cultural resources would be potentially significant but mitigable. The Reduced Growth Alternative would result in less development than the Plan but because development under this alternative would occur within the same Planning Area as the Plan the potential to encounter tribal cultural resources would be similar. This alternative would also include mitigation measures TCR-1 and TCR-2 from this EIR that would protect tribal cultural resources. Therefore, impacts to tribal cultural resources under the Reduced Project Alternative would be similar to those of the Plan.

s. Utilities and Service Systems

As discussed in Chapter 4.19, *Utilities and Service Systems*, Development carried out under the Plan would or may require increased or expanded water supplies and wastewater, stormwater, telecommunications, electric power, and natural gas supplies and facilities. While compliance with Plan policies, the Palmdale Municipal Code, and other City programs would reduce these impacts, impacts on water supply and wastewater capacity would remain significant and unavoidable. The Reduced Growth Alternative would result in reduced development potential and reduced population increase and decrease demand on existing utilities and service systems. This alternative would also include Plan goals and policies related to water, wastewater, storm water drainage, electricity, and natural gas. Because of its reduced overall amount of development and continued applicability of Plan policies, this alternative would result in less demand on utilities and service systems than the Plan, although impacts on water supply and wastewater capacity may still remain significant and unavoidable because development under this alternative may still exceed the existing demand projections of utility service providers.

t. Wildfire

As discussed in Chapter 4.20, *Wildfire*, although a portion of the Planning Area is in a very high fire hazards severity zone, Plan policies related to wildfire risk would reduce impacts to a less than significant level. The Reduced Growth Alternative would be carried out in the same Planning Area as the Plan and would also include areas in very high fire hazard severity zones. Development carried

out under this alternative would be subject to the same policies and goals as the Plan. However, the amount of development in very high fire hazard severity zones may be reduced, resulting in a reduction of wildfire risk to developments in those areas. Because of its reduction in the total amount of development that could potentially be exposed to wildfire risks, while retaining Plan policies relating to wildfire, this alternative's overall impact to wildfire would be less than those of the Plan.

6.3 Alternatives Considered but Rejected

6.3.1 Description

a. Relocated Focus Areas

Other alternatives considered include various scenarios that would relocate the focus area of development included in the Plan. This would involve shifting the location of one or more of the focus areas identified in the Plan, such as downtown Palmdale, the health/wellness and education districts, and Palmdale Boulevard, in an attempt to avoid growth-related impacts in certain areas. Although this alternative would occur in different general locations from the Plan it is assumed that the same amount of overall development would occur and this alternative would be subject to the same goals, policies, and development standards as the Plan.

Relocating the focus areas of development included in the Plan would not reduce traffic in the Planning Area as a whole. Rather, it would simply move it to different areas of the Planning Area. Additionally, moving the focus areas away from the areas identified in the Plan could push traffic to streets where viable infrastructure is not in place to support this level of development, further increasing traffic related impacts. Furthermore, the TIA found that the Plan's overall impacts on transportation were less than significant under CEQA. As noted in Chapter 4.17, *Transportation*, vehicle miles travelled (VMT), not traffic congestion metrics such as LOS, is the appropriate metric for measuring the environmental impacts of traffic under CEQA. The Plan would reduce per capita VMT, and relocation of the focus areas would not substantially affect Plan VMT or avoid any environmental impact. Therefore, these scenarios were rejected from further consideration and this option was not included as an alternative in the analysis.

b. No Growth

The No Growth alternative would mean no more development compared to current conditions. This option was determined to be infeasible. The No Growth alternative is not realistic because some development in Palmdale is already allowed under existing land use designations and zoning, and in some cases may have already received approvals or other entitlements. The No Growth alternative would require a growth moratorium ordinance that would restrict property development rights that already exist under existing policies and regulations, which could raise issues related to property rights and takings. Additionally, the No Growth alternative would not meet several of the main objectives of the plan, listed below and discussed in Section 2.3.1 of this EIR.

- **Active and vibrant downtown.** Palmdale residents desire a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale

- **Housing options for residents at different stages of life and ability.** The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the city that support residents of all abilities through different stages of life
- **Forefront of transportation innovations.** On the cusp of major regional transportation improvements, Palmdale seeks to leverage planned investments and improve local transit opportunities

The creation of an active and vibrant downtown would not be possible without development of new residential and non-residential projects, which would induce growth in the Planning Area. The development of new housing units to serve residents of all ages and abilities, including the expansion of affordable housing, would not be possible under a no growth alternative as these housing projects would induce growth in the Planning Area. If transit and transportation improvements listed as objectives of the Plan are not considered growth, they could still be considered under the No Growth alternative. However, without development growth the City would have to find a funding mechanism for public improvements without development fees or development related revenues. Therefore, feasibly meeting these objectives under the City's current fiscal structure may not be possible under the No Growth alternative.

The No Growth alternative would not meet these objectives because all of them would require at least some development. Therefore, this scenario was rejected from further consideration and this option was not included as an alternative in the analysis.

6.4 Environmentally Superior Alternative

CEQA requires the identification of the environmentally superior alternative among the options studied. When the "No Project" alternative is determined to be environmentally superior, CEQA also requires identification of the environmentally superior alternative among the development options. As shown in Table 6-1, the Reduced Growth Alternative would, overall, be environmentally superior to the Plan. When the two alternatives are compared to each other, the Reduced Growth Alternative would be environmentally superior because apart from greater impacts to Land Use and Planning and Transportation, it would have reduced or similar environmental impacts to the Plan, while the No Project Alternative would result in greater impacts to Biological Resources, Cultural Resources, Energy, Geology and Soils, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, Noise, Transportation and Traffic, Tribal Cultural Resources and Wildfire, with reduced impacts in Air Quality, Hydrology and Water Quality, Population and Housing, Public Services, Recreation, Utilities and Service Systems, and Wildfire.

Table 6-1 Impact Comparison of Alternatives

Issue	No Project Alternative	Reduced Growth Alternative
Aesthetics	=	+
Agricultural and Forestry Resources	=	=
Air Quality	+	+
Biological Resources	-	+
Cultural Resources	-	+
Energy	-	+
Geology and Soils	-	+
Greenhouse Gas Emissions	=	=
Hazards and Hazardous Materials	-	+
Hydrology and Water Quality	+	+
Land Use and Planning	-	-
Mineral Resources	-	=
Noise	-	+
Population and Housing	+	+
Public Services	+	+
Recreation	+	+
Transportation and Traffic	-	-
Tribal Cultural Resources	-	=
Utilities and Service Systems	+	+
Wildfire	-	+
+ Superior to the Plan (reduced level of impact) - Inferior to the Plan (increased level of impact) = Similar level of impact to the Plan		

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7.2 List of Preparers

This EIR was prepared by the City of Palmdale with the assistance of Rincon Consultants, Inc. Rincon staff involved in the preparation of the EIR are listed below.

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8 Responses to Comments on the Draft EIR

This section includes comments received during the circulation of the Draft Environmental Impact Report prepared for the City of Palmdale 2045 General Plan Update Project (Project).

The Draft EIR was circulated for a 45-day public review period that began on July 14, 2022, and ended on August 29, 2022. The City of Palmdale received two comment letters on the Draft EIR. The commenters and the page number on which each commenter's letter appear are listed below.

Letter No. and Commenter	Page No.
1 Barbara Lods, Operations Manager, Antelope Valley Air Quality Management District	8-2
2 Victoria Tang, California Department of Fish and Wildlife	8-4

The comment letters and responses follow. The comment letters have been numbered sequentially and each separate issue raised by the commenter, if more than one, has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 1.1, for example, indicates that the response is for the first issue raised in comment letter 1).

Where a comment resulted in a change to the Draft EIR text, a notation is made in the response indicating that the text is revised. Changes in text are signified by strikeouts (~~strikeouts~~) where text is removed and by underlined font (underlined font) where text is added. These changes in text are also included in *Amendments to the Draft EIR*, at the end of this section.

Letter 1



Antelope Valley Air Quality Management District
43301 Division St., Suite 206
Lancaster, CA 93535-4649

661.723.8070

In reply, please refer to AV0722/140

July 29, 2022

Megan Taggart
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

RE: Notice of Availability of a Draft Environmental Impact Report for Project: Palmdale 2045
General Plan Update (Palmdale 2045)

Dear Ms. Taggart,

The Antelope Valley Air Quality Management District (District) has received the Notice of Availability of A Draft Environmental Impact Report for the Palmdale 2045 General Plan Update Project.

We have reviewed the documentation and based on the information available to us at this time, we have no comment on the request.

Thank you for the opportunity to review this planning document. If you have any questions regarding this letter, please contact me at (661) 723-8070 x23 or blods@avaqmd.ca.gov.

Sincerely,

Barbara Lods

Barbara Lods
Operations Manager

BJL/SS
Sent via E-mail

Letter 1

COMMENTER: Barbara Lods, Operations Manager, Antelope Valley Air Quality Management District

DATE: July 29, 2022

The commenter states that the District received the Notice of Availability of the Draft EIR, reviewed the document, and has no comments. This comment is noted, and no response is required.



State of California – Natural Resources Agency
 DEPARTMENT OF FISH AND WILDLIFE
 South Coast Region
 3883 Ruffin Road
 San Diego, CA 92123
 (858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



August 23, 2022

Megan Taggart
 City of Palmdale
 38250 Sierra Highway
 Palmdale, CA 93550
MTaggart@cityofpalmdale.org

Subject: Comments on the Draft Environmental Impact Report for the Palmdale 2045 General Plan Update Project, SCH #2021060494, Los Angeles County

Dear Ms. Taggart:

The California Department of Fish and Wildlife (CDFW) has reviewed the Draft Environmental Impact Report (DEIR) for the Palmdale 2045 General Plan Update Project (Project) from the City of Palmdale (City). Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State [Fish & G. Code, §§ 711.7, subdivision (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect state fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 *et seq.*). Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq.*), or CESA-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, § 1900 *et seq.*), CDFW recommends the Project proponent obtain appropriate authorization under the Fish and Game Code.

2-1

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Project Description and Summary

Objective: The proposed Project is a three-plus-year comprehensive update to the City's General Plan, the guiding document for the future of Palmdale over 23 years (2022-2045). The Project focuses on building out planned infrastructure investments and improving multi-modal active transportation and connectivity. The Project identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a downtown near the future multimodal transit station, establishing three health and wellness districts, and developing two education districts. This also includes transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. The City has identified 24 sites on Table 3-1 Development Status of Major Approved Projects that are sites approved for development (Approved Projects) within the 23-year planning period of the Project. The following actions will also be taken by the City in connection with the Project and are also considered part of the proposed project analyzed in the DEIR:

2.1

- Adopt and implement the General Plan Update (Palmdale 2045 Plan);
- Adopt and implement the Climate Action Plan;
- Adopt Zoning Ordinance Amendments required to make the Zoning Ordinance consistent with the General Plan Update;
- Adopt the Housing Element Update; and
- Adopt revisions to the Palmdale Transit Area Specific Plan to slightly expand its boundary.

Location: The Project would apply to the entire geographic area located within the boundaries of the City of Palmdale. The City is located in the southern region of the Antelope Valley, approximately 60 miles northeast of downtown Los Angeles along State Highway 14. The Project Area is 106,634 acres, or approximately 166 square miles.

Comments and Recommendations

CDFW offers the comments and recommendations below to assist the City in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions are also included to improve the environmental document. CDFW recommends the measures or revisions below be included in a science-based monitoring program that contains adaptive management strategies as part of the Project's CEQA mitigation, monitoring and reporting program (Pub. Resources Code, § 21081.6; CEQA Guidelines, § 15097).

2.2

Specific Comments

Comment #1: Impacts on Western Joshua Trees (*Yucca brevifolia*) and Woodlands

Issue: Development facilitated by the Project could impact western Joshua trees and woodlands, which can be found throughout the Palmdale area.

2.3

Specific impacts: Development of the Approved Projects or future project sites may result in loss of individual western Joshua trees as well as acres of Joshua tree woodlands.

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Why impact would occur: Take of western Joshua tree is defined as any activity that results in the removal of a western Joshua tree, or any part thereof, or impacts the seedbank surrounding one or more western Joshua trees (CDFW 2022a). Development of some Approved Projects and potentially future sites could result in the loss of individual trees and acres of Joshua tree woodlands. Impacts on western Joshua trees and Joshua tree woodlands could occur as a result of clearing a project site for development, which includes fuel modification areas surrounding the potential development. Even if individual trees are not removed as part of fuel modification, removal and disturbance of the understory vegetation would result in the complete loss, degradation, or disturbance of a structurally diverse Joshua tree woodland. As a result, the Project would remove western Joshua trees, eliminate and modify habitat, and crush and/or bury living seeds in the soil, rendering living seeds inviable and/or causing them to be killed.

The DEIR concludes that the Project's impact on western Joshua trees is less than significant through implementation and compliance with the City's Native Vegetation Ordinance as well as the Project's Conservation Policy Goal CON-1.2. The City's Native Vegetation Ordinance applies to individual trees, not the habitat or natural community as a whole. The Project's Goal CON-1.2 does not prescribe, require, or impose specific actions that would substantially mitigate for impacts on a natural community that CDFW considers to be a Sensitive Natural Community. The DEIR does not require any future development facilitated by the Project to undertake measures to mitigate for impacts on western Joshua trees as a natural community. As a result, the Project could result in unmitigated impacts.

The City's Native Vegetation Ordinance requires preservation of two Joshua trees per acre. Loss of woodlands supporting foraging, nesting, and dispersing wildlife may not be completely mitigated by preserving individual trees. Individual trees may not completely replace the loss of viable habitat, understory vegetation, and biological functions. This could result in a short-term and long-term reduction in Joshua tree woodlands available to support biological and ecological functions. As such, this could result in local extirpation of wildlife.

Evidence impact would be significant: The western Joshua tree is a species designated as candidate for listing as threatened pursuant to CESA (Fish & G. Code, § 2050 *et seq.*). The western Joshua tree is granted full protection of a threatened species under CESA. Take of any endangered, threatened, candidate species that results from the Project is prohibited, except as authorized by State law (Fish & G. Code, §§ 86, 2062, 2067, 2068, 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). The DEIR does not describe or disclose any compensatory mitigation required for the Project's impact on western Joshua trees, their seedbank, or in situ western Joshua trees adjacent to an Approved Project or future project site. Accordingly, the Project may have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status by CDFW.

CDFW considers Joshua tree woodlands to be a sensitive plant community. Impacts to a Sensitive Natural Community should be considered significant under CEQA unless impacts are clearly mitigated below a level of significance. Without appropriate mitigation, the Project may result in significant impacts on a Sensitive Natural Community if development facilitated by the Project would remove, encroach into, or disturb (e.g., fuel modification) such resources. Accordingly, the Project would continue to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on a species or natural community identified as a candidate, sensitive, or special status species by CDFW.

2.3

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Recommended Potentially Feasible Mitigation Measure(s) Required for Future Projects Facilitated by the General Plan Update:

Mitigation Measure #1: The City should require project applicants to submit an Incidental Take Permit (ITP) Application to CDFW that provides the following information (at a minimum):

1. An analysis of individual western Joshua trees (clonal and non-clonal) and western Joshua tree seedbank that would be impacted both within the Project site and within 300 feet of the Project site;
2. An analysis of the acres of natural communities supporting western Joshua trees that would be impacted both within the Project site and within 300 feet of the Project site provided according to alliance and/or association-based natural communities found in the [Manual of California Vegetation](#) (MCV), second edition (Sawyer et al. 2009);
3. A map of the Project's site plan overlaid on location of western Joshua trees and natural communities; and
4. A discussion of whether development could impact any in-situ western Joshua trees adjacent to the Project site.

Mitigation Measure #2: The City should provide compensatory mitigation for any Approved Project's or future project's impact on western Joshua trees at no less than 2:1, or as required in an ITP for western Joshua trees issued by CDFW. Mitigation should be higher if the project will impact a western Joshua tree population that is increasing through seedling recruitment. Mitigation lands provided by the City should (at a minimum):

1. Support western Joshua trees of similar density, abundance, and age structure;
2. Support natural communities of similar native plant species composition, density, structure, and function to habitat that was impacted;
3. Support nursery plants for western Joshua tree recruits; and
4. Not be exposed or have the potential to be exposed to disturbances such as OHV activity, illegal access, and encroachment from pending or future development.

Mitigation Measure #3: The City should require the project applicants to protect mitigation lands in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands pursuant to Assembly Bill 1094 (2012). Assembly Bill 1094 amended Government Code sections 65965-65968. Under Government Code section 65967(c), the lead agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves. An appropriate non-wasting endowment should be provided for the long-term management of mitigation lands. A mitigation plan should include measures to protect the targeted habitat values in perpetuity from direct and indirect negative impacts. Issues that should be addressed include but are not limited to the following: protection from any future development and zone changes; restrictions on access; proposed land dedications; control of illegal dumping; water pollution; and, increased human intrusion. A conservation easement and endowment funds should be fully acquired, established, transferred, or otherwise executed prior to impacts on western Joshua trees.

Recommendation #1: The City should revise the DEIR to require future applicants to disclose the project's impact on western Joshua tree by providing the following information:

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1. The Project’s potential impact on western Joshua tree seedbank within the Project site;
2. The Project’s potential impact on western Joshua trees and seedbank adjacent to the Project site;
3. The Project’s potential impact on each unique native and non-native natural community supporting western Joshua trees within and adjacent to the Project site;
4. The Project’s construction, operation, and maintenance activities that could impact western Joshua trees and seedbank within and adjacent to the Project site; and
5. The Project’s cumulative impact on western Joshua tree.

2.3

Recommendation #2: Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP for the Project unless the Project require all current and future project CEQA document address all the project’s impact on CESA endangered, threatened, and/or candidate species. The Project’s CEQA document should also specify a mitigation monitoring and reporting program that will meet the requirements of an ITP. Also, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for an ITP. However, it is worth noting that mitigation for the Project’s impact on a CESA endangered, threatened, and/or candidate species proposed in the Project’s CEQA document may not necessarily satisfy mitigation required to obtain an ITP.

Comment #2: Impacts on Biological Resources

Issue: Development facilitated by the Project could impact biological resources.

Specific impacts: Direct and indirect impacts on biological resources could result from development on Approved Project and future sites. Impacts on biological resources could result in reproductive suppression, mortality or injury to wildlife, or population decline of a special status, sensitive, or rare species or natural community.

Why impacts would occur: The DEIR states, “Based on the review of applicable databases, 32 special-status animal species and 43 special-status plant species have been observed or have the potential to occur in the 9-quadrangle search area surrounding the Planning Area, as detailed in Appendix C. These include the desert tortoise and Mohave ground squirrel.” According to the DEIR, out of the 24 sites that the Project has identified, CDFW has estimated 19 sites on vacant land. Development on these sites as proposed in the Project, would require removal of habitat and construction of residential, commercial, and industrial uses. Development on these sites could result in habitat modification and impacts to special status species during development and operation. Development facilitated by the Project could impact biological resources, both directly or indirectly through habitat modification or loss. Biological resources that could be impacted by the Project includes special status, sensitive, or rare species or natural communities. Given that the Project site supports multiple species and their habitats, the DEIR only includes MM-BIO-1 to minimize impacts to nesting birds. The Project may, therefore, result in a net loss of special status, sensitive, or rare species or natural communities without further avoidance, minimization, or mitigation measures.

2-4

The DEIR concludes that the Project’s impact on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW and/or U.S. Fish and Wildlife Service (USFWS) is less than significant through implementation of the Project’s goals and policies and compliance with provisions of the various

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State and federal regulations. The Project’s Conservation Goals CON-1, CON-2, CON-5, and CON-7 are goals and policies that do not prescribe, require, or impose specific actions that would substantially mitigate for impacts on candidate, sensitive, or special status species at a project level. The DEIR does not require future development facilitated by the Project to undertake any measures to mitigate for impacts on candidate, sensitive, or special status species, other than birds. As a result, the Project, by identifying developable sites over the next 23 years, could result in unmitigated impacts.

Evidence impacts would be significant: The Project has identified vacant sites within the City that could be developed through 2045. The Project could result in direct physical changes to the environment and impact special status, sensitive, or rare plant or wildlife species or natural communities. Impacts on CESA- and ESA-listed species requires a mandatory finding of significance under CEQA (CEQA Guidelines, § 15065). Take under ESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Plants with a California Rare Plant Rank (CRPR) of 1B meets the definition of endangered, rare, or threatened species under CEQA (CEQA Guidelines, §15380; CNPS 2022a). Plants with a CRPR of 4 may meet the definition of endangered, rare, or threatened species. Impacts on rare plants could require a mandatory finding of significance. CDFW considers Sensitive Natural Communities as threatened habitats having both regional and local significance. Natural communities, alliances, and associations with a State-wide rarity ranking of S1, S2, and S3 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by visiting the [Vegetation Classification and Mapping Program - Natural Communities](#) webpage (CDFW 2022a). Impacts on sensitive natural communities could require a mandatory finding of significance. species by CDFW.

Development facilitated by the Project could substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species [CEQA Guidelines, § 150565(a)(1)]. Without appropriate mitigation, the Project continues to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species, or a Sensitive Natural Community, in local or regional plans, policies, or regulations, or by CDFW and/or USFWS.

Recommended Potentially Feasible Mitigation Measure(s) Required for Future Projects Facilitated by the General Plan Update:

Mitigation Measure #4: Future development projects on Approved Project sites should conduct the appropriate biological resources technical studies as part of project-level analyses, including baseline surveys, protocol-level surveys, tree inventories to confirm the presence of any special status species within or immediate adjacent to proposed impact areas. Focused species-specific surveys should be required if suitable habitat is present. These surveys should be performed according to any established CDFW and/or USFWS protocols. Reports should be prepared that should document baseline conditions at the time of project application, identify constraints, recommend project redesign, analyze potential effects, and propose mitigation measures that reduce potential impacts to less than significant levels. Biological resources technical studies should provide and include the following:



2.4

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1. A complete, recent, assessment of rare, threatened, and endangered species, regionally and locally unique species, and sensitive habitats at the project site and within the area of potential effect, including California Species of Special Concern and California Fully Protected Species (Fish & G. Code, §§ 3511, 4700, 5050, and 5515). Species to be addressed should include all those which meet the CEQA definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of land around the project site should also be addressed. A nine-quadrangle search of CDFW's [California Natural Diversity Database](#) (CNDDDB) should be conducted to obtain current information on any previously reported sensitive species and habitat (CDFW 2022b);
2. A thorough, recent, floristic-based assessment of special status plants and natural communities following CDFW's [Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities](#) (CDFW 2018). Adjoining habitat areas should be included where project construction and activities could lead to direct or indirect impacts off site;
3. Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at the project site and within the area of potential effect. The [Manual of California Vegetation](#) (MCV), second edition, should be used to inform this mapping and assessment (Sawyer et al. 2009);
4. A rare plant assessment using online databases for rare, threatened, and endangered plants, including the California Native Plant Society (CNPS) [Online Inventory of Rare and Endangered Plants of California](#) (CNPS 2022b) as well as the Calflora's [Information on Wild California Plants](#) database (Calflora 2022);
5. A discussion regarding project-related indirect impacts on biological resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands [e.g., preserve lands associated with a Natural Community Conservation Plan (Fish & G. Code, § 2800 et. seq.)]; and
6. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in areas adjacent to the project site.

Mitigation Measure #5: If necessary, the project applicants should be required to enter into consultation with, and obtain the appropriate permits from, the USFWS and/or CDFW for unavoidable impacts to special status species and other protected resources. Appropriate permits from the USFWS and/or CDFW should be obtained prior to obtaining a grading permit.

Mitigation Measure #6: If a rare plant species or a Sensitive Natural Community is detected, the project applicant should fully avoid impacts. If the project cannot feasibly avoid impacts to rare plants and habitat, or sensitive natural communities, either during project activities or over the life of the project, the project applicant should provide compensatory mitigation for the loss of individual plants and habitat acres, which should include impacts due to fuel modification. Impacts on rare plants or a Sensitive Natural Community due hazard mitigation/remediation should also be mitigated as these impacts would result in permanent loss and perpetual impacts on habitat function and quality. The project applicant should provide compensatory mitigation so that there is no net loss of rare plants and habitat, or sensitive natural communities. Compensatory mitigation should be appropriate for the extent of permanently disturbed habitat. Compensatory mitigation should be higher for impacts on CRPR 1 species, S1 or S2 Sensitive Natural Community, and Sensitive Natural Community with an additional rank of 0.1 or 0.2. Compensatory mitigation should be implemented by a qualified restoration ecologist. A Restoration Plan, at a minimum, should include success criteria and performance standards for measuring the establishment of rare plants and habitat, responsible parties, maintenance

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techniques and schedule, five-year monitoring and reporting schedule, adaptive management strategies, and contingencies. A Restoration Plan should be submitted to the City prior to any grading or vegetation removal.

Mitigation Measure #7: CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species that results from a project is prohibited, except as authorized by State law (Fish & G. Code, §§ 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). Consequently, if a project, project construction, or any project-related activity for the duration of the project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends the project applicant seek appropriate take authorization under CESA prior to implementing or continuing the project. Appropriate authorization from CDFW may include an ITP or a Consistency Determination in certain circumstances, among other options [Fish & G. Code, §§ 2080.1, 2081, subs. (b) and (c)]. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the project's CEQA document addresses all project impacts to CESA listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

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Comment #3: Impacts to Streams

Issue: Development facilitated by the Project and Conservation Goal CON-7 could impact streams.

Specific impacts: Development on some of the Approved Project sites may result in erosion and earth movement that could impair streams, whether ephemeral, intermittent, or perennial. Development on the Approved Project or future project sites may necessitate capturing local run-off from their natural course of flow. In addition, vegetation along streams may need to be removed or may be degraded through habitat modification (e.g., loss of water source, encroachment, and edge effects leading to introduction of non-native plants).

Why impacts would occur: According to the DEIR, Amargosa Channel is located adjacent to a site on the Approved Projects. Development of this site could affect riparian habitat during project construction and operation. Development on this and potentially additional future sites may result in ground-disturbing activities and vegetation removal. This includes ground-disturbing activities and vegetation removal potentially required for fuel modification and hazard mitigation/remediation. Ground-disturbing activities and vegetation removal could result in erosion. Siltation or runoff downstream could impair streams and herbaceous vegetation. Herbaceous vegetation adjacent to streams protects the physical and ecological integrity of these water features and maintains natural sedimentation processes. Therefore, a housing or future project that would impact vegetation adjacent to streams, but not the stream itself, could still impact the stream.

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In addition, current Approved Projects or future projects may require streams to be channelized or local run-off diverted from their natural course of flow. The DEIR concludes that the Project's impact on any riparian habitat or other sensitive natural community is less than significant

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through implementation of the Project's goals and policies and compliance with relevant local, state, and federal regulations. The Policy Conservations Goals CON-1, CON-4, CON-5, CON-6, CON-7 are goals and policies that do not prescribe, require, or impose specific actions that would substantially mitigate for impacts on streams and associated natural communities. The DEIR does not require future development facilitated by the Project to undertake any measures to mitigate for impacts on streams and associated natural communities. As a result, the Project, by identifying developable sites over the next 23 years, could result in unmitigated impacts.

Evidence impacts would be significant: Changes to hydrology or channel morphology, due to run-off diversion, are reasonable potential direct and indirect physical changes in the environment. Said changes and their potential impacts on biological resources should be analyzed and disclosed in an environmental document. Adequate disclosure is necessary for CDFW to assist a lead agency in adequately identifying, avoiding, and/or mitigating a project's significant, or potentially significant, direct, and indirect impacts on biological resources.

CDFW exercises its regulatory authority as provided by Fish and Game Code section 1600 et seq. to conserve fish and wildlife resources which includes rivers, streams, or lakes and associated natural communities. Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW prior to beginning any activity that may do one or more of the following:

- Divert or obstruct the natural flow of any river, stream, or lake;
- Change the bed, channel, or bank of any river, stream, or lake;
- Use material from any river, stream, or lake; or,
- Deposit or dispose of material into any river, stream, or lake.

CDFW requires a Lake and Streambed Alteration (LSA) Agreement when a project activity may substantially adversely affect fish and wildlife resources. The Project may result in significant impacts on streams and associated natural communities if development of Approved Project sites identified by the Project or future projects would be in close proximity to these resources. Without appropriate mitigation, the Project continues to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on fish and wildlife resources, including rivers, streams, or lakes and associated natural communities identified by CDFW.

Recommended Potentially Feasible Mitigation Measure(s) Required for Future Projects Facilitated by the General Plan Update:

Mitigation Measure #8: Project specific analyses should prepare a jurisdictional delineation and impact assessment provided along with the project's biological resources technical studies.

Mitigation Measure #9: If any river, stream, or lake are present and may be impacted, the project should be required to avoid impacts by implementing appropriate vegetative buffers and/or setbacks adjoining the stream or wetland feature to reduce impacts of the project on these resources.

Mitigation Measure #10: If avoidance is not feasible, the project applicant should be required to notify CDFW pursuant to Fish and Game Code 1602 and obtain an LSA Agreement from CDFW prior to obtaining a grading permit. The project applicant should comply with the



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mitigation measures detailed in a LSA Agreement issued by CDFW. The project applicant should also provide compensatory mitigation at no less than 2:1 for the impacted stream and associated natural community, or at a ratio acceptable to CDFW. Please visit CDFW’s [Lake and Streambed Alteration Program](#) webpage for more information (CDFW 2022c).

Recommendation #3: CDFW recommends the DEIR require any approved or future projects to include an analysis of potential impacts on biological resources resulting from any proposed water diversion. At a minimum, the analysis should evaluate a study reach that includes the channel downstream from a project site. The study reach should extend a minimum of one mile downstream or an appropriate distance determined by both a qualified biologist and hydrologist, whichever is greater. The analysis of the study reach should discuss changes in hydrology and hydraulics, including the following:

1. Under pre-project (i.e., baseline) conditions, the volume of water flow from both the project area and study reach during a) the wet (November through March); b) the dry season (April through October); and c) above-average and below-average water year (i.e., wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year). The analysis should clearly define above-average or below-average rainfall year.
2. Under proposed project conditions, the percent reduction in flow from both the project area and study reach for a wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year.
3. A quantitative analysis comparing the flow from the project area and other tributaries into the study reach, and their relative contribution to the hydrograph of the study reach.
4. An analysis of potential project-related changes to river hydraulics in both concrete-lined and soft-bottom reaches. This includes water depth (percent change), wetted perimeter (acres gained/lost), and velocity (percent change).

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Recommendation #4: CDFW’s issuance of an LSA Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document from the lead agency/project applicant for the project. To minimize additional requirements by CDFW pursuant to Fish and Game Code section 1600 et seq. and/or under CEQA, a project’s CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of the LSA Agreement. To compensate for any on- and off-site impacts to aquatic and riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: erosion and pollution control measures; avoidance of resources; protective measures for downstream resources; on- and/or off-site habitat creation; enhancement or restoration; and/or protection and management of mitigation lands in perpetuity.

Additional Recommendations

Recommendation #5: Nesting Birds – CDFW recommends modifying BIO-MM-4 to include underlined language and remove language with strikethrough:

“To avoid disturbance of nesting and special status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out

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under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) ~~(February 1 through August 31)~~. If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

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If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.”

It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the permanent removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW shall be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.

Recommendation #6: Data – CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special status species detected by completing and submitting [CNDDDB Field Survey Forms](#) (CDFW 2022d). This includes all documented occurrences of special status species. The City should ensure the data has been properly submitted, with all data fields applicable filled out, prior to Project ground-disturbing activities. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred. The City should provide CDFW with confirmation of data submittal.

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Recommendation #7: Mitigation and Monitoring Reporting Plan – Per Public Resources Code section 21081.6(a)(1), CDFW has provided the City with a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation and Monitoring Reporting Plan (MMRP; Attachment A). A final MMRP shall reflect results following additional plant and wildlife surveys and the Project’s final on and/or off-site mitigation plans.
Filing Fees

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The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the City of Palmdale and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required for the underlying Project approval to be operative, vested, and final (Cal. Code Regs., tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

Conclusion

We appreciate the opportunity to comment on the Project to assist the City in adequately analyzing and minimizing/mitigating impacts to biological resources. CDFW requests an opportunity to review and comment on any response that the City has to our comments and to receive notification of any forthcoming hearing date(s) for the Project [CEQA Guidelines, § 15073(e)]. If you have any questions or comments regarding this letter, please contact Felicia Silva, Environmental Scientist, at Felicia.Silva@wildlife.ca.gov or (562) 292-8105.

Sincerely,

DocuSigned by:

5991E19EF8094C3...

Victoria Tang signing for

Erinn Wilson-Olgin
Environmental Program Manager I
South Coast Region

ec: CDFW

- Erinn Wilson-Olgin, Los Alamitos – Erinn.Wilson-Olgin@wildlife.ca.gov
- Victoria Tang, Los Alamitos – Victoria.Tang@wildlife.ca.gov
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- CEQA Program Coordinator, Sacramento – CEQACommentLetters@wildlife.ca.gov
- Office of Planning and Research
State Clearinghouse, Sacramento – State.Clearinghouse@opr.ca.gov

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State of California – Natural Resources Agency
 DEPARTMENT OF FISH AND WILDLIFE
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GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



Attachment A: Draft Mitigation and Monitoring Reporting Plan

CDFW recommends the following language to be incorporated into a future environmental document for the Project. A final MMRP shall reflect results following additional plant and wildlife surveys and the Project's final on and/or off-site mitigation plans.

Biological Resources (BIO)			
Mitigation Measure (MM) or Recommendation (REC)		Timing	Responsible Party
MM-BIO-1- Joshua Tree ITP	<p>The City shall require project applicants to submit an ITP Application to CDFW that provides the following information (at a minimum):</p> <ol style="list-style-type: none"> 1) An analysis of individual western Joshua trees (clonal and non-clonal) and western Joshua tree seedbank that would be impacted both within the Project site and within 300 feet of the Project site; 2) An analysis of the acres of natural communities supporting western Joshua trees that would be impacted both within the Project site and within 300 feet of the Project site provided according to alliance and/or association-based natural communities found in the Manual of California Vegetation (MCV), second edition (Sawyer et al. 2009); 3) A map of the Project's site plan overlaid on location of western Joshua trees and natural communities; and 4) A discussion of whether housing development could impact any in-situ western Joshua trees adjacent to the Project site. 	Prior to Project construction and activities	City of Palmdale/Project Applicant

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<p>MM-BIO-2- Joshua Tree Mitigation</p>	<p>The City shall provide compensatory mitigation for any Approved Projects or future project’s impact on western Joshua trees at no less than 2:1, or as required in an ITP for western Joshua trees issued by CDFW. Mitigation shall be higher if the project will impact a western Joshua tree population that is increasing through seedling recruitment. Mitigation lands provided by the City shall (at a minimum):</p> <ol style="list-style-type: none"> 1) Support western Joshua trees of similar density, abundance, and age structure; 2) Support natural communities of similar native plant species composition, density, structure, and function to habitat that was impacted; 3) Support nursery plants for western Joshua tree recruits; and 4) Not be exposed or have the potential to be exposed to disturbances such as OHV activity, illegal access, and encroachment from pending or future development. 	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>
<p>MM-BIO-3- Mitigation Lands</p>	<p>The City shall require the project applicants to protect mitigation lands in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands pursuant to Assembly Bill 1094 (2012). Assembly Bill 1094 amended Government Code sections 65965-65968. Under Government Code section 65967(c), the lead agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves. An appropriate non-wasting endowment shall be provided for the long-term management of mitigation lands. A mitigation plan shall include measures to protect the targeted habitat values in perpetuity from direct and indirect negative impacts. Issues that shall be addressed include but are not limited to the following: protection from any future development and zone</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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	changes; restrictions on access; proposed land dedications; control of illegal dumping; water pollution; and, increased human intrusion. A conservation easement and endowment funds shall be fully acquired, established, transferred, or otherwise executed prior to impacts on western Joshua trees.		
REC-1-Impacts to Joshua Tree	<p>The City should revise the DEIR to require future applicants to disclose the project's impact on western Joshua tree by providing the following information:</p> <ol style="list-style-type: none"> 1) The Project's potential impact on western Joshua tree seedbank within the Project site; 2) The Project's potential impact on western Joshua trees and seedbank adjacent to the Project site; 3) The Project's potential impact on each unique native and non-native natural community supporting western Joshua trees within and adjacent to the Project site; 4) The Project's construction, operation, and maintenance activities that could impact western Joshua trees and seedbank within and adjacent to the Project site; and 5) The Project's cumulative impact on western Joshua tree. 	Prior to Project construction and activities	City of Palmdale/Project Applicant
REC-2-ITP Issuance	Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP for the Project unless the Project require all current and future project CEQA document address all the project's impact on CESA endangered, threatened, and/or candidate species. The Project's CEQA document should also specify a mitigation monitoring and reporting program that will meet the requirements of an ITP. Also, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for an ITP. However, it is worth noting that mitigation for the Project's impact on a CESA endangered, threatened, and/or candidate species proposed in the Project's CEQA document may not necessarily satisfy mitigation required to obtain an ITP.	Prior to Project construction and activities	City of Palmdale/Project Applicant

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<p>MM-BIO-4- Biological Resources</p>	<p>Future development projects and development on Approved Project sites shall conduct the appropriate biological resources technical studies as part of project-level analyses, including baseline surveys, protocol-level surveys, tree inventories to confirm the presence of any special status species within or immediate adjacent to proposed impact areas. Focused species-specific surveys shall be required if suitable habitat is present. These surveys shall be performed according to any established CDFW and/or USFWS protocols. Reports shall be prepared that shall document baseline conditions at the time of project application, identify constraints, recommend project redesign, analyze potential effects, and propose mitigation measures that reduce potential impacts to less than significant levels. Biological resources technical studies shall provide and include the following:</p> <ol style="list-style-type: none"> 1. A complete, recent, assessment of rare, threatened, and endangered species, regionally and locally unique species, and sensitive habitats at the project site and within the area of potential effect, including California Species of Special Concern and California Fully Protected Species (Fish & G. Code, §§ 3511, 4700, 5050, and 5515). Species to be addressed shall include all those which meet the CEQA definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of land around the project site shall also be addressed. A nine-quadrangle search of CDFW’s California Natural Diversity Database (CNDDDB) shall be conducted to obtain current information on any previously reported sensitive species and habitat (CDFW 2022b); 2. A thorough, recent, floristic-based assessment of special status plants and natural communities following CDFW’s Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). Adjoining habitat areas shall be included where project construction and activities could lead to direct or indirect impacts off site; 	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>
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	<ol style="list-style-type: none"> 3. Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at the project site and within the area of potential effect. The Manual of California Vegetation (MCV), second edition, shall be used to inform this mapping and assessment (Sawyer et al. 2009); 4. A rare plant assessment using online databases for rare, threatened, and endangered plants, including the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS 2022b) as well as the Calflora's Information on Wild California Plants database (Calflora 2022); 5. A discussion regarding project-related indirect impacts on biological resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands [e.g., preserve lands associated with a Natural Community Conservation Plan (Fish & G. Code, § 2800 et. seq.)]; and, 6. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in areas adjacent to the project site. 		
MM-BIO-5-Special Status Species Permits	If necessary, the project applicants shall be required to enter into consultation with, and obtain the appropriate permits from, the USFWS and/or CDFW for unavoidable impacts to special status species and other protected resources. Appropriate permits from the USFWS and/or CDFW shall be obtained prior to obtaining a grading permit.	Prior to Project construction and activities	City of Palmdale/Project Applicant
MM-BIO-6-Sensitive Natural Communities	If a rare plant species or a Sensitive Natural Community is detected, the project applicant shall fully avoid impacts. If the project cannot feasibly avoid impacts to rare plants and habitat, or sensitive natural communities, either during project activities or over the life of the project, the project applicant shall provide compensatory mitigation for the loss of individual plants and habitat acres, which shall include impacts due to fuel modification.	Prior to Project construction and activities	City of Palmdale/Project Applicant

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	<p>Impacts on rare plants or a Sensitive Natural Community due to hazard mitigation/remediation shall also be mitigated as these impacts would result in permanent loss and perpetual impacts on habitat function and quality. The project applicant shall provide compensatory mitigation so that there is no net loss of rare plants and habitat, or sensitive natural communities. Compensatory mitigation shall be appropriate for the extent of permanently disturbed habitat. Compensatory mitigation shall be higher for impacts on CRPR 1 species, S1 or S2 Sensitive Natural Community, and Sensitive Natural Community with an additional rank of 0.1 or 0.2. Compensatory mitigation shall be implemented by a qualified restoration ecologist. A Restoration Plan, at a minimum, shall include success criteria and performance standards for measuring the establishment of rare plants and habitat, responsible parties, maintenance techniques and schedule, five-year monitoring and reporting schedule, adaptive management strategies, and contingencies. A Restoration Plan shall be submitted to the City prior to any grading or vegetation removal.</p>		
<p>MM-BIO-7-CEQA Document</p>	<p>CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species that results from a project is prohibited, except as authorized by State law (Fish & G. Code, §§ 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). Consequently, if a project, project construction, or any project-related activity for the duration of the project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends the project applicant seek appropriate take authorization under CESA prior to implementing or continuing the project. Appropriate authorization from CDFW may include an ITP or a Consistency Determination in certain circumstances, among other options [Fish & G. Code, §§ 2080.1, 2081, subds. (b) and (c)]. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required to obtain a CESA Permit. Revisions to</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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	the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the project's CEQA document addresses all project impacts to CESA listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.		
MM-BIO-8- Jurisdictional Delineation	Project specific analyses shall prepare a jurisdictional delineation and impact assessment provided along with the project's biological resources technical studies.	Prior to Project construction and activities	City of Palmdale/Project Applicant
MM-BIO-9- Stream Buffers	If any river, stream, or lake are present and may be impacted, the project shall be required to avoid impacts by implementing appropriate vegetative buffers and/or setbacks adjoining the stream or wetland feature to reduce impacts of the project on these resources.	Prior to Project construction and activities	City of Palmdale/Project Applicant
MM-BIO-10-LSA Notification	If avoidance is not feasible, the project applicant shall be required to notify CDFW pursuant to Fish and Game Code 1602 and obtain an LSA Agreement from CDFW prior to obtaining a grading permit. The project applicant shall comply with the mitigation measures detailed in a LSA Agreement issued by CDFW. The project applicant shall also provide compensatory mitigation at no less than 2:1 for the impacted stream and associated natural community, or at a ratio acceptable to CDFW. Please visit CDFW's Lake and Streambed Alteration Program webpage for more information (CDFW 2022c).	Prior to Project construction and activities	City of Palmdale/Project Applicant
REC-3-Water Diversion Biological Analysis	CDFW recommends the DEIR require any approved or future projects to include an analysis of potential impacts on biological resources resulting from any proposed water diversion. At a minimum, the analysis should evaluate a study reach that includes the channel downstream from the Project site. The study reach should extend a minimum of one mile downstream or an appropriate distance determined by both a qualified biologist and	Prior to Project construction and activities	City of Palmdale/Project Applicant

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	<p>hydrologist, whichever is greater. The analysis of the study reach should discuss changes in hydrology and hydraulics, including the following:</p> <ol style="list-style-type: none"> 1. Under pre-project (i.e., baseline) conditions, the volume of water flow from both the project area and study reach during a) the wet (November through March); b) the dry season (April through October); and c) above-average and below-average water year (i.e., wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year). The analysis should clearly define above-average or below-average rainfall year. 2. Under proposed project conditions, the percent reduction in flow from both the project area and study reach for a wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year. 3. A quantitative analysis comparing the flow from the project area and other tributaries into the study reach, and their relative contribution to the hydrograph of the study reach. <p>An analysis of potential project-related changes to river hydraulics in both concrete-lined and soft-bottom reaches. This includes water depth (percent change), wetted perimeter (acres gained/lost), and velocity (percent change).</p>		
<p>REC-4-CEQA Compliance</p>	<p>CDFW's issuance of an LSA Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document from the lead agency/project applicant for the project. To minimize additional requirements by CDFW pursuant to Fish and Game Code section 1600 et seq. and/or under CEQA, a project's CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of the LSA Agreement. To</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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	<p>compensate for any on- and off-site impacts to aquatic and riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: erosion and pollution control measures; avoidance of resources; protective measures for downstream resources; on- and/or off-site habitat creation; enhancement or restoration; and/or protection and management of mitigation lands in perpetuity.</p>		
<p>REC-5-Nesting Birds</p>	<p>CDFW recommends modifying BIO-MM-4 to include <u>underlined</u> language and remove language with strikethrough:</p> <p>“To avoid disturbance of nesting and special status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, <u>February 15 through September 15 (as early as January 1 for some raptors)</u> (February 1 through August 31). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.</p> <p>If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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	<p>lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.”</p> <p>It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the permanent removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW shall be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.</p>		
<p>REC-6-Data</p>	<p>CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special status species detected by completing and submitting CNDDB Field Survey Forms (CDFW 2022d). This includes all documented occurrences of special status species. The City should ensure the data has been properly submitted, with all data fields applicable filled out, prior to Project ground-disturbing activities. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred. The City should provide CDFW with confirmation of data submittal.</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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REC-7- Mitigation and Monitoring Plan	Per Public Resources Code section 21081.6(a)(1), CDFW has provided the City with a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation and Monitoring Reporting Plan (MMRP; Attachment A). A final MMRP shall reflect results following additional plant and wildlife surveys and the Project's final on and/or off-site mitigation plans.	Prior to approval of CEQA document	City of Palmdale/Project Applicant
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Certificate Of Completion

Envelope Id: 5F68A5BF79FC4F83BEFDFB9975A0BF8E	Status: Completed
Subject: Please DocuSign: 2021060494 Palmdale General Plan DEIR.docx	
Use Case ID:	
Source Envelope:	
Document Pages: 24	Signatures: 1
Certificate Pages: 1	Initials: 0
AutoNav: Enabled	Envelope Originator:
Envelope Stamping: Enabled	Jennifer Ludovissy
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Signer Events

Victoria Tang
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 Senior ES Supervisor
 California Department of Fish and Wildlife
 Security Level: Email, Account Authentication (None)

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 Viewed: 8/23/2022 11:31:13 AM
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In Person Signer Events	Signature	Timestamp
Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
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Certified Delivered	Security Checked	8/23/2022 11:31:13 AM
Signing Complete	Security Checked	8/23/2022 11:31:27 AM
Completed	Security Checked	8/23/2022 11:31:27 AM
Payment Events	Status	Timestamps

Letter 2

COMMENTER: Victoria Tang, California Department of Fish and Wildlife

DATE: August 23, 2022

Response 2.1

The commenter states that CDFW is a Trustee Agency and Responsible Agency for fish and wildlife resources with jurisdiction over such resources. The commenter summarizes the proposed project and geographic area.

This comment is noted. Required approvals and approving agencies for the proposed Plan are listed in Section 2.4 of the Draft EIR (refer to page 2-14). The CDFW does not have approval authority over the proposed Plan but for individual projects that may be implemented as a result of the proposed Plan, where there are fish and wildlife resources on site, CDFW may be a Trustee or Responsible Agency for those individual projects, if and when they are submitted for application and project-level CEQA review.

Response 2.2

The commenter recommends inclusion of a science-based monitoring program with adaptive management strategies as mitigation for the project.

Please refer to Response 2.3 through Response 2.6 regarding the commenter's proposed mitigation measures. A Mitigation Monitoring and Reporting Program (MMRP) is required by CEQA and included in this Final EIR as Appendix F. The MMRP includes all mitigation measures in the Final EIR, a timeline for implementation and the responsible agency overseeing mitigation.

Response 2.3

The commenter states that the project could impact Western Joshua trees (*Yucca brevifolia*) and woodlands, specifically from the loss of individual trees and acres of woodlands. The commenter states that impacts would occur as a result of clearing sites for development, including fuel modification that could disturb woodlands, and crushing or burying seeds such that they are no longer viable. The commenter summarizes the conclusion in the Draft EIR and states that the City's Native Vegetation Ordinance applies to individual trees rather than the community as a whole. The commenter states that CDFW considers Joshua tree woodlands to be a sensitive natural community, and project impacts are unmitigated. The commenter states that Joshua trees are designated as a candidate for listing as threatened under the California Endangered Species Act (CESA). The commenter recommends new mitigation measures be added to the Draft EIR, including a requirement for Incidental Take Permit (ITP) applications, compensatory mitigation at a 2:1 ratio or higher for Joshua tree removal, and establishing a permanent conservation easement. The commenter recommends the Draft EIR provide additional information related to potential impacts to western Joshua tree and sensitive natural communities, and preparation of separate CEQA documents for the issuance of ITPs for individual projects.

Joshua tree habitat is described on page 4.4-5 of the Draft EIR, as part of the vegetation communities discussion. Joshua tree habitat is identified in the Draft EIR as a sensitive natural community on page 4.4-13.

Section 4.4.2 of the Draft EIR, beginning on page 4.4-15, describes the regulations applicable to future development as a result of the proposed Plan. As described therein, the City's Native Vegetation Ordinance (PMC Section 14.04.040[B-C]) requires developers to obtain a permit for removal of dead western Joshua trees or limbs from the City, and, because the species is a candidate for listing, permits from CDFW would be required for the removal of live western Joshua trees unless there is a change in the Joshua tree's status before implementation of future development projects. As stated in Palmdale Municipal Code (PMC) Section 14.04.040(I), projects not described in PMC 14.04.040(A-H) would be required to obtain an Incidental Take Permit (ITP) from CDFW.

Potential impacts to individual Joshua trees and Joshua tree habitat are discussed under Impact BIO-1 (pages 4.4-19 through 4.4-22 of the Draft EIR), and Impact BIO-4 (page 4.4-26 of the Draft EIR). These impact discussions describe the regulatory requirements that would be protective of sensitive habitats and special-status species, as follows:

Under the proposed Plan, development that could alter biological habitats could occur in portions of the Planning Area, but all development would be subject to the provisions of the various federal and State natural resources regulations discussed in Section 4.4.3, Regulatory Setting and their respective permitting processes. These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found. Plan goals and policies that would encourage the conservation and protection of public open space and natural resources and reduce potential impacts to special-status species and sensitive habitats...

Regulatory requirements related to western Joshua tree are reinforced by goals and policies in the proposed Plan, including the federal Endangered Species Act (ESA), CESA, and the City's Native Vegetation Preservation Ordinance. The impact discussion concludes: "Implementation of these goals and policies would ensure that projects carried out under the proposed Plan would be completed in accordance with protecting and preserving SEAs."

Furthermore, the discussion under Impact BIO-4 on page 4.4-26 of the Draft EIR states:

PMC Chapter 14.04 prohibits the removal of any desert vegetation unless a native desert vegetation removal permit has been issued from the City.... Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Juniper trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the PMC. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW. Development carried out under the proposed Plan would be required to adhere to City ordinances and CDFW requirements protecting desert vegetation such as Joshua trees, which would ensure that such vegetation is not damaged or removed unless properly permitted.

As described therein, the protections provided by the PMC related to western Joshua trees protects the species as individuals as well as "native desert vegetation" as a whole, which includes a variety of vegetation found in Joshua tree habitats. Furthermore, an ITP from CDFW would be required for removal of live western Joshua trees, pursuant to CESA.

Potential impacts to Joshua trees were adequately addressed in these discussions in the Draft EIR; therefore, no modifications to the Draft EIR are required, such as the addition of new mitigation measures. Pursuant to CEQA Guidelines Section 15126.4(a)(3), mitigation measures are not required for effects which are not found to be significant. Furthermore, pursuant to CEQA Guidelines Section 15126.4(a)(4), there must be a nexus between the identified impact and the proposed mitigation measure, and mitigation should be “roughly proportional” to the identified impact.

Specific project-level details regarding future development under the proposed Plan are not available at this time; therefore, specific project level or site-specific impacts related to Joshua tree removal are unknown. As required, future discretionary development projects would be subject to additional analysis under CEQA, which would include specific project-level impacts and mitigation (if necessary). The regulatory requirements identified above would be applicable to future projects that would be constructed on sites containing Joshua trees, and would address the impact to this species from potential future projects if and when those project-level details are available to provide site-specific impact analysis and if necessary, project-specific mitigation measures or Conditions of Approval to reduce or avoid any potential biological resources that may occur on the site.

Response 2.4

The commenter asserts that future development under the proposed Plan could result in reproductive suppression, mortality, injury to wildlife, or population decline. The commenter states that 19 of the 24 identified development sites are vacant land, and development would remove habitat from these sites, resulting in habitat modification and impacts to special-status species. The commenter asserts that proposed Plan Goals do not prescribe, require, or impose actions that would mitigate potential impacts, and asserts that project impacts remain unmitigated. The commenter states that impacts to special-status species requires mandatory findings of significance. The commenter recommends mitigation that would require biological studies for future projects, including field surveys and other requirements; consultation with USFWS and/or CDFW for required permits; full avoidance of rare plants and sensitive natural communities or compensatory mitigation to ensure no net loss; and obtaining appropriate authorization for take of special-status species.

Special-status species are described on pages 4.4-12 through 4.4-13 of the Draft EIR, which includes a description of listed species, special-status wildlife, and special-status plant species.

Section 4.4.2 of the Draft EIR, beginning on page 4.4-15, describes the regulations applicable to future development as a result of the proposed Plan. As described therein, special-status species are protected under the ESA, the Migratory Bird Treaty Act, CESA, the California Fish and Game Code, the California Native Plant Protection Act, and the City’s Native Vegetation Ordinance require developers to obtain permits and/or other approvals for actions that would directly result in “take” of a special-status species. Such permits would be required for future development projects where applicable, including the future development sites referenced by the comments, and additional mitigation is not necessary to reinforce such regulatory requirements. The ITP processes under the ESA and CESA require that impacts be mitigated; absent this, the requested take permits cannot be issued. Therefore, future development projects would not result in unmitigated impacts on threatened or endangered species. For the same reason, these projects would not cause fish or wildlife populations to drop below self-sustaining levels.

Potential impacts to special-status species are discussed under Impact BIO-1 (pages 4.4-19 through 4.4-22 of the Draft EIR). This impact discussion describes the regulatory requirements that would be protective of special-status species and their habitats, as follows:

Under the proposed Plan, development that could alter biological habitats could occur in portions of the Planning Area, but all development would be subject to the provisions of the various federal and State natural resources regulations discussed in Section 4.4.3, Regulatory Setting and their respective permitting processes. These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found. Plan goals and policies that would encourage the conservation and protection of public open space and natural resources and reduce potential impacts to special-status species and sensitive habitats...

Regulatory requirements related to special-status species are reinforced by goals and policies in the proposed Plan, including the ESA, CESA, and the West Mojave Plan. The impact discussion concludes:

Implementation of these goals and policies would ensure that projects carried out under the proposed Plan would be completed in accordance with protecting and preserving SEAs. While these goals and policies generally aim at protecting special-status species, if vegetation and trees are to be trimmed or removed during project construction or if construction would occur near trees and vegetation, nesting birds could be impacted. Therefore, impacts related to nesting birds would be potentially significant and Mitigation Measure BIO-1 would be required for projects where mature trees and other habitat are present and construction activities are scheduled from early spring to late summer. With implementation of Plan goals and policies and Mitigation Measure BIO-1, potential impacts to special-status species and sensitive habitat would be reduced to a less than significant level.

Additionally, the Draft EIR states the following (page 4.4-20):

These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found.

Potential impacts to special-status species were adequately addressed under Impact BIO-1 in the Draft EIR, which required mitigation related to pre-construction surveys for nesting birds (Mitigation Measure BIO-1) be implemented for future development projects. This discussion also addresses mandatory findings of significance related to substantially reducing habitat for species or resulting in species populations falling below self-sustaining levels. Pursuant to CEQA Guidelines Section 15126.4(a)(4), there must be a nexus between the identified impact and the proposed mitigation measure, and mitigation should be “roughly proportional” to the identified impact.

Specific project-level details regarding future development under the proposed Plan are not available at this time and the regulatory requirements identified above would be applicable to future projects, which would address potential project-level impacts to special-status species from potential future projects if and when those project-level details are available to provide site-specific impact analysis and if necessary, project-specific mitigation measures or Conditions of Approval to reduce or avoid any potential biological resources that may occur on the site.

Response 2.5

The commenter states that development could result in erosion and earth movement that could impair streams, necessitating the capture of runoff. The commenter specifies concerns related to a development site adjacent to Amargosa Channel from ground disturbance and vegetation removal. The commenter states that impacts to vegetation near streams would also affect the stream itself. The commenter states that future projects may channelize streams or divert runoff, asserts that proposed Plan Goals do not prescribe, require, or impose actions that would mitigate potential impacts, and asserts that project impacts remain unmitigated. The commenter summarizes the CGFC Section 1602 requirements, including Lake and Streambed Alteration Agreements. The commenter recommends mitigation measures for the preparation of jurisdictional delineations, implementing vegetative buffers from streams or wetlands, and notification of CDFW pursuant to CGFC Section 1602. The commenter recommends the preparation of additional studies of downstream channels from future projects. The commenter states that when CDFW is a Responsible Agency with permitting authority, the CEQA document prepared by the Lead Agency should include full identification of potential impacts to stream and riparian resources.

Wetlands and aquatic resources are described on pages 4.4-9 through 4.4-12 of the Draft EIR, which includes a description of freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, and riverine habitats.

Section 4.4.2 of the Draft EIR, beginning on page 4.4-15, describes the regulations applicable to future development as a result of the proposed Plan. As described therein, wetlands and riparian areas are protected under the Clean Water Act, the California Fish and Game Code, and the Porter-Cologne Water Quality Control Act. These regulations require developers to obtain permits and/or other approvals for actions that would discharge material into waters of the U.S. (including wetlands), or conduct work within the bed or bank of a lake or stream. Such permits would be required for future development projects where applicable, and would be issued in accordance with federal and state agency requirements, which include restoration of temporarily impacted waters and compensatory mitigation for permanently impacted waters. Additional mitigation in this Program EIR for the proposed Plan is not necessary to reinforce such regulatory requirements.

Potential impacts to riparian habitats and wetlands are discussed under Impact BIO-2 (pages 4.4-22 through 4.4-24 of the Draft EIR). This impact discussion describes the regulatory requirements that would be protective of riparian areas and wetlands, as follows:

Development in the Planning Area, along with other sites near or bisected by waterways and other tributaries and drainages throughout the Planning Area, may be subject to USACE, CDFW, and RWQCB permitting requirements.

Impact BIO-2 describes the anticipated impacts of future projects as follows:

Under the Plan, new development would generally result from re-use of properties, infill development on vacant lots, conversion of uses in response to market demand (e.g., mixed use developments), and more intense use of land in defined areas. While most development carried out under the Plan would be infill development in already urbanized areas not near wetlands or waterways, development could reasonably occur in undeveloped areas due to the significantly undeveloped nature of the Planning Area. Therefore, a jurisdictional delineation would be required in accordance with CWA Section 404 for development that would occur in areas near wetlands or waterways. More specifically, any proposed development in areas identified as jurisdictional waters and/or wetlands, streambed/banks, or riparian vegetation would be

subject to the permit requirements of the USACE, RWQCB, and CDFW, pursuant to Section 404 of CWA and the Porter-Cologne Water Quality Control Act. Actual jurisdictional areas are determined by the State and federal authorities at the time that permits are requested.

Therefore, the Draft EIR already acknowledges the requirement for avoiding filling wetlands or waterways without a permit, which may require conducting a jurisdictional delineation when necessary, pursuant to CWA Section 404. As this is a regulatory requirement, it is not necessary to include it as a separate mitigation measure, as suggested by the commenter. Similarly, Impact BIO-2 acknowledges that future projects could have direct impacts to wetland habitat, and PMC Section 8.04.265 requires developers to obtain other permits required by State and federal agencies, as appropriate, as standard Conditions of Approval for grading work to commence. This discussion also describes National Pollutant Discharge Elimination System Construction General Permit requirements and PMC design standard requirements related to erosion and sediment control. Potential impacts would be reduced by the above-mentioned regulatory requirements related to wetlands and riparian habitats, and impacts would be further reinforced by goals and policies in the proposed Plan, including Goals CON-1, CON-4, CON-5, CON-6, and CON-7, and policies related to those goals. The impact discussion concludes:

Implementation of these goals and policies would reduce direct impacts to riparian habitat during construction and operation by reducing direct and indirect modifications to creeks, embankments, and other waterways in the Planning Area. Furthermore, if jurisdictional waters occur on any site developed under the proposed Plan, jurisdictional delineation and RWQCB permits would be required that would address potential impacts to those waters. Adherence to state and federal regulations, the PMC, and implementation of Plan goals and polices would reduce impact to a less than significant level.

Potential impacts to wetland and riparian habitats were adequately addressed under Impact BIO-2 in the Draft EIR; therefore, no modifications to the Draft EIR are required, such as the addition of new mitigation measures. Pursuant to CEQA Guidelines Section 15126.4(a)(3), mitigation measures are not required for effects which are not found to be significant. Furthermore, pursuant to CEQA Guidelines Section 15126.4(a)(4), there must be a nexus between the identified impact and the proposed mitigation measure, and mitigation should be “roughly proportional” to the identified impact.

Specific project-level details regarding future development under the proposed Plan are not available at this time; therefore, specific project-level and site-specific impacts related to wetland and riparian habitats are unknown. However, the regulatory requirements identified above would be applicable to future projects that would be constructed on sites containing or adjacent to wetland and riparian habitats, and would address the impacts from potential future projects with project-specific measures.

Response 2.6

The commenter provides an underline/strikeout revision to Mitigation Measure BIO-1 of the Draft EIR, modifying the breeding season dates. The commenter notes that halting project activities within nesting buffers does not mitigate for habitat loss, and additional mitigation would be necessary for the permanent removal of nesting habitat.

Based on the commenter’s suggested edits, the following revision has been made to pages 4.4-21 through 4.4-22 of the Draft EIR:

BIO-1 Pre-Construction Nesting Bird Surveys

To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) (February 1 through August 31). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than three days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

The changes reflected above would not result in substantial alterations to the degree of impact or conclusions presented in the Draft EIR, and therefore do not constitute significant new information that would trigger Draft EIR recirculation under CEQA *Guidelines* Section 15088.5. Rather, the changes serve to clarify and strengthen the content of the Draft EIR.

This mitigation measure is intended to reduce potential impacts from future development projects to nesting birds and is not intended to mitigate impacts related to habitat loss. As discussed under Impact BIO-1 of the Draft EIR, beginning on page 4.4-19, potential impacts to sensitive natural communities would be less than significant and mitigation is not required. Impacts to vegetation that is not sensitive would also be less than significant, because these communities are widespread and abundant in the region and would not be substantially diminished by projects in the City implemented under the proposed Plan.

Response 2.7

The commenter asserts that information in CEQA documents must be incorporated into a database for supplemental environmental determinations (PRC 21003[e]). The commenter requests that California Natural Diversity Database Field Survey Forms are submitted if special-status species are detected, with the City ensuring proper submittal of the form.

This comment is noted. The Draft EIR, Administrative Record, and related documents will be maintained by the City, as required. The commenter's request is acknowledged and will be presented for review and consideration by the City's decision-making body. Since this comment does not raise specific environmental concerns about the Draft EIR or the proposed Plan, no further response is required.

Response 2.8

The commenter provides an attached MMRP with suggested mitigation measures and recommendations. The commenter states that the project would be required to pay CDFW fees upon filing the Notice of Determination for the project.

Please refer to Response 2.3 through Response 2.6 regarding the commenter's proposed mitigation measures. The MMRP will include all mitigation measures from the Draft EIR, as well as any revisions determined to be necessary in this Final EIR.

Filing fees will be paid upon filing of the Notice of Determination, as required by law. Pursuant to CEQA Guidelines Section 15088(b), written responses will be provided to public agencies that commented on the Draft EIR at least 10 days prior to certification of the EIR.

Amendments to the Draft EIR

The following pages provide a summary record of all proposed text amendments to the Draft EIR. Most amendments are the result of comments received during the public review period, and directly respond to those comments, or correction of typographical errors within the Draft EIR. These amendments serve as clarifications and amplifications on the content of the Draft EIR. None of the changes would warrant recirculation of the EIR pursuant to CEQA Guidelines Section 15088.5. The amendments serve to clarify and strengthen the content of the EIR, but do not introduce significant new information.

Changes in text are signified by strikeouts (~~strikeouts~~) where text is removed and by underlined font (underline font) where text is added.

Executive Summary

Page ES-12 to ES-13:

Impact	Mitigation Measure	Significance After Mitigation
Biological Resources		
<p>Impact BIO-1: Development carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat. Impacts would be less than significant with mitigation.</p>	<p>MM-BIO-1 Pre-Construction Nesting Bird Surveys</p> <p>To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, <u>February 15 through September 15 (as early as January 1 for some raptors)</u> (February 1 through August 31). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.</p> <p>If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.</p>	<p>Implementation of Mitigation Measure BIO-1 would reduce potential impacts to nesting birds and associated habitat to a less than significant level by requiring pre-construction surveys and avoidance measures.</p>

Section 4.4, Biological Resources

Page 4.4-18:

Palmdale Native Desert Vegetation Ordinance

PMC Chapter 14.04, Joshua Tree and Native Desert Vegetation Preservation, establishes regulations and standards to preserve desert vegetation in the City. This ordinance is designed to protect western Joshua trees and California Junipers in the City. Joshua Trees and California Junipers both provide a unique natural desert aesthetic to the community, which the City aims to maintain. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission's vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the Palmdale Municipal Code. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW.

Page 4.4-21 to 4.4-22:

BIO-1 Pre-Construction Nesting Bird Surveys

To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) (~~February 1 through August 31~~). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than three days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

Page 4.4-26:

PMC Chapter 14.04 prohibits the removal of any desert vegetation unless a native desert vegetation removal permit has been issued from the City. Section 14.04.040 protects desert vegetation and allows for its removal only if it creates an imminent threat to public health or safety. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission's vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the PMC. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW. Development carried out under the proposed Plan would be required to adhere to City ordinances and CDFW requirements protecting desert vegetation such as Joshua Trees, which would ensure that such vegetation is not damaged or removed unless properly permitted.

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Appendix A

Notice of Preparation

**City of Palmdale
Palmdale 2045
General Plan Update
(General Plan Amendment 20-003)
(Zoning Ordinance Amendment 21-007)**

**Notice of Preparation of a
Draft Environmental Impact Report**

The City of Palmdale will be the Lead Agency for the preparation of an Environmental Impact Report (EIR) that will analyze the environmental impacts associated with a proposed update to the Palmdale General Plan (Palmdale 2045), referred to herein as the “proposed project” or “General Plan.” The actions that make up the proposed project are described below. More information on the proposed project is available on the project website at: <https://www.palmdale2045.org/>. The Planning Area for the proposed project includes the land within the City Limits, the Sphere of Influence (SOI), and several unincorporated Los Angeles County ‘islands.’ The proposed General Plan land use map showing the Planning Area is shown at the end of this Notice of Preparation (NOP).

Project Description

The proposed project is a three-plus-year comprehensive update to the City’s General Plan, the guiding document for the future of Palmdale over 25 years (2020-2045). The General Plan serves as the City’s primary guide for land use and development decisions and is a key tool for influencing and improving the quality of life for residents and businesses. As such, it serves as the “blueprint” for future development and conservation of a community. The General Plan will help the City plan for important community issues such as new growth, housing and infrastructure needs, and environmental protection. It also sets the stage for future social, physical, and economic development of the City. It addresses issues that impact the entire community, such as how land is used, where buildings are constructed, and the locations of infrastructure.

Under State law, the General Plan must serve as the foundation upon which all land use decisions are to be based, and must also be comprehensive, internally consistent, and have a long-term perspective. State law further mandates that the General Plan:

- Identify land use, circulation, environmental, economic, and social goals and policies for the City and its surrounding planning area as they relate to future growth and development;
- Provide a basis for local government decision-making, including decisions on development approvals and exactions;

- Provide citizens the opportunity to participate in the planning and decision-making process of their communities; and
- Inform citizens, developers, decision-makers, and other cities and counties of the ground rules that guide development within a particular community.

According to State law, General Plans are required to cover nine topics: land use, circulation, housing, conservation, open space, noise, air quality, safety, and environmental justice. Jurisdictions may include any other topic that is relevant to planning its future. The updated City of Palmdale General Plan will include the State required topics plus economic development, urban design, infrastructure, military readiness, community facilities, sustainability and resilience, and climate change.

The General Plan will focus on enhancing the community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Palmdale 2045's vision for the future includes the following vision themes.

- **Unified and welcoming community.** The Palmdale community values opportunity, diversity, and unity, and seeks to promote Palmdale's positive reputation while boosting community beautification
- **Active and vibrant downtown.** Palmdale residents desire a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale
- **Diverse and high-quality job options.** Palmdale seeks to retain and expand its employment base through training for key industries, connecting residents to local jobs, and promoting telecommuting within the City
- **Diverse and resilient local economy.** The City of Palmdale values its existing aerospace presence and aims to leverage and diversify new economic opportunities from expanded transportation connections
- **Safe, healthy place to live and work.** Palmdale residents want to address crime and safety, increase access to parks and open space, and support marginalized communities like foster youth and those experiencing homelessness
- **High quality medical and mental healthcare.** As a medical provider shortage area, Palmdale seeks to improve access to quality medical and mental healthcare services and facilities by attracting physicians, maintaining the Palmdale Regional Medical Center, and expanding services
- **Housing options for residents at different stages of life and ability.** The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the City that support residents of all abilities through different stages of life
- **High quality and accessible educational opportunities.** Citizens of Palmdale seek to promote and expand educational opportunities in the City including higher education, trade school, and formal and informal training programs
- **Beautiful natural setting.** The Palmdale community values its natural setting and seeks to improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky

- **Forefront of transportation innovations.** On the cusp of major regional transportation improvements, Palmdale seeks to leverage planned investments and improve local transit opportunities
- **General Plan implementation.** Residents of Palmdale value the long-term vision of the General Plan Update and desire regular review and update of the Plan including metrics for tracking implementation

Palmdale 2045 identifies major strategies and physical improvements for the City over the next 25 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. These strategies will support existing and future employees, businesses, and residents by improving quality of life in Palmdale.

The following actions will also be taken by the City of Palmdale in connection with the General Plan Update and are also considered part of the proposed project to be analyzed in the forthcoming EIR:

- Adoption and implementation of the General Plan Update (Palmdale 2045 Plan)
- Adoption and implementation of the Climate Action Plan
- Adoption and implementation of the Zoning Ordinance Amendment

The Plan will also include an update of the City's Housing Element, in compliance with the requirements of State Housing Element law, which requires the City to adopt an updated Housing Element by October 2021. This Housing Element update will also be analyzed in the EIR.

Environmental Impact Report

The Draft EIR will be a program EIR. Per Section 15168 of the State *CEQA Guidelines*, a program EIR is an EIR that may be prepared on a series of actions that can be characterized as one large project. The purpose of a program EIR is to allow the lead agency to consider broad policy alternatives and program wide mitigation measures early in the process when the agency has greater flexibility to deal with basic problems or cumulative impacts.

The EIR will examine each of the issue areas on the City's environmental checklist. Issues to be discussed include the following:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology/Soils
- Mineral Resources
- Noise
- Population/Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources

- Greenhouse Gas Emissions
- Hazards & Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Utilities/Service Systems
- Wildfire
- Mandatory Findings of Significance

In addition to the CEQA-required “no project” alternative, the EIR will examine a range of land use scenarios that address one or more of the potential environmental effects of the proposed project.

The City of Palmdale would like to know your views or the views of your organization as to the scope and content of the environmental information that should be addressed in connection with the proposed project. Public agencies may need to use the EIR prepared by the City of Palmdale when considering permits or other approvals regarding certain aspects of the proposed actions. Due to time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Megan Taggart, Planning Manager, at:

City of Palmdale
Department of Economic and Community Development
38250 Sierra Highway
Palmdale, California 93550

Megan Taggart can be reached at 661-267-5213, or by emailing mtaggart@cityofpalmdale.org. When responding to the NOP, please provide the name for a contact person in your agency.

The City of Palmdale will hold an EIR Scoping Meeting to provide an additional opportunity for input on the scope and content of the EIR. The Scoping Meeting is scheduled for Wednesday, June 30, at 5:30 p.m. Please check the project website (<https://www.palmdale2045.org/>) to confirm this meeting time prior to the meeting. Due to ongoing restriction related to the COVID-19 pandemic, the meeting will be conducted virtually.

To join this meeting, please register in advance by clicking on, or pasting into your web browser, the following link:

[https://us02web.zoom.us/meeting/register/tZwoceMvrTIsHtYjmm9iVRZyXjtO -TEK9Rg](https://us02web.zoom.us/join/mtaggart@cityofpalmdale.org)

After registering, you will receive a confirmation email containing information about joining the meeting. Please note that this meeting will occur prior to a Joint General Plan Advisory Committee and Public Workshop (and will use the same meeting link).

Project Title: City of Palmdale 2045 General Plan Update (GPA 20-003 & ZOA 21-007)

Project Sponsor: City of Palmdale

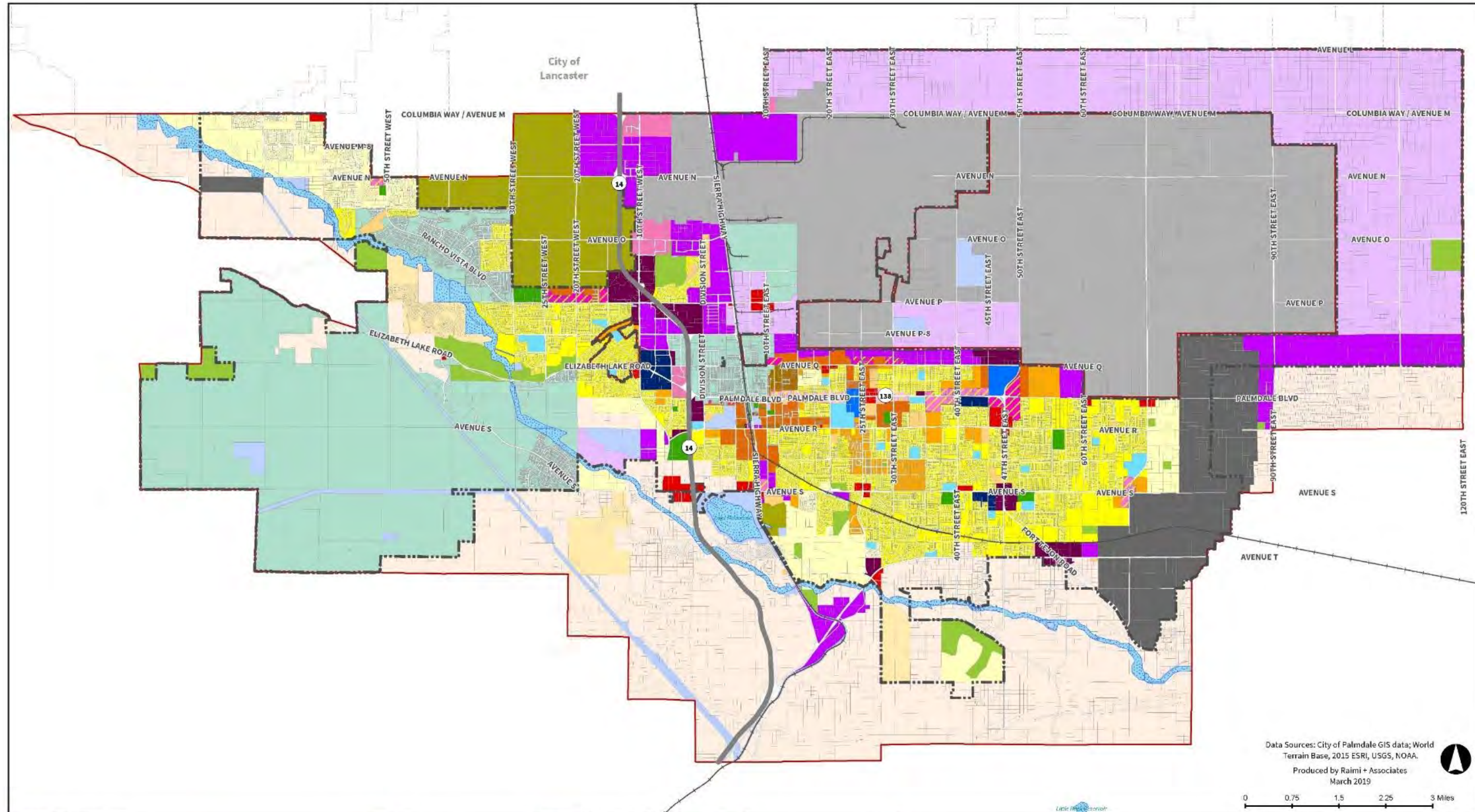
Date 6/23/21

Signature 

Title Planning Manager

Telephone 661-267-5213

City of Palmdale Proposed General Plan Land Use Map



Residential Designations		Mixed Use		Commercial/Office/Other		Industrial		Public	
Equestrian Residential	Residential Neighborhood 1	Mixed Use 1	Neighborhood Commercial	Employment Flex	Public Facility-School	Industrial	Public Facility-Civic	City Boundary	Public Facility-Park
Low Density Residential	Residential Neighborhood 2	Mixed Use 2	Regional Commercial	Aerospace Industrial	Public Facility-Civic	Mineral Resource Extraction	Open Space	Sphere of Influence	Open Space
Single Family Residential 1	Residential Neighborhood 3	Mixed Use 3	Visitor Commercial	Specific Plan	Public Facility-Civic	Mineral Resource Extraction	Open Space	Major Highway/Arterial	Open Space
Single Family Residential 2	Residential Neighborhood 4	Mixed Use 4	Health and Wellness	Specific Plan	Public Facility-Civic	Mineral Resource Extraction	Open Space	Railroad	Water Body/Aqueduct
Single Family Residential 3		Educational Flex							

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.
 Produced by Raimi + Associates
 March 2019

0 0.75 1.5 2.25 3 Miles

DEPARTMENT OF TRANSPORTATION

DISTRICT 7 – Office of Regional Planning
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 266-3562
FAX (213) 897-1337
TTY 711
www.dot.ca.gov



*Making Conservation
a California Way of Life.*

June 29, 2021

Megan Taggart
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

RE: City of Palmdale 2045 General Plan Update
– Notice of Preparation of an Environmental
Impact Report (NOP)
SCH # 2021060494
GTS # 07-LA-2021-03634
Vic. LA-138/PM: 44.445

Dear Megan Taggart:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced NOP. The proposed project (Palmdale 2045) is a three-plus-year comprehensive update to the City's General Plan, the guiding document for the future of Palmdale over 25 years (2020-2045). The General Plan will focus on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Palmdale 2045 identifies major strategies and physical improvements for the City over the next 25 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. The City of Palmdale is the Lead Agency under the California Environmental Quality Act (CEQA).

Since the project covers the entire City, it is located near State Routes 14 and 138. After reviewing the NOP, Caltrans looks forward to reviewing this project's forthcoming Vehicle Miles Traveled (VMT) analysis. As a reminder, Senate Bill 743 (2013) mandates that VMT be used as the primary metric in identifying transportation impacts of all future projects under CEQA, starting July 1, 2020.

For information on determining transportation impacts in terms of VMT on the State Highway System, see the *Technical Advisory on Evaluating Transportation Impacts in CEQA* by the California Governor's Office of Planning and Research (OPR), dated December 2018: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. The City can also refer to Caltrans' updated *Vehicle Miles Traveled-Focused Transportation Impact Study Guide* (TISG), dated May 2020 and released on Caltrans' website in July 2020: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-05-20-approved-vmt-focused-tisg-a11y.pdf>. Caltrans' new TISG is largely based on the OPR 2018 Technical Advisory.

Note that the updated TISG states, "Additional future guidance will include the basis for requesting

transportation impact analysis that is not based on VMT. This guidance will include a simplified safety analysis approach that reduces risks to all road users and that focuses on multi-modal conflict analysis as well as access management issues.” Since releasing the TISG, Caltrans has released interim safety analysis guidance, dated December 2020 and found here, for the City’s reference: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-12-22-updated-interim-ldigr-safety-review-guidance-a11y.pdf>. Caltrans encourages lead agencies to complete traffic safety impact analysis in the CEQA review process so that, through partnerships and collaboration, California can reach zero fatalities and serious injuries by 2050.

Caltrans also encourages lead agencies to promote alternative transportation, as the City of Palmdale will do by supporting local transit opportunities in the General Plan Update. This will increase accessibility and decrease Greenhouse Gas Emissions, which supports Caltrans’ mission to provide a safe and reliable transportation network that serves all people and respects the environment. For additional strategies to integrate into the General Plan Update that will promote equity and environmental preservation, please refer to:

- The 2010 *Quantifying Greenhouse Gas Mitigation Measures* report by the California Air Pollution Control Officers Association (CAPCOA), available at <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>, or
- *Integrating Demand Management into the Transportation Planning Process: A Desk Reference* (Chapter 8) by the Federal Highway Administration (FHWA), available at <https://ops.fhwa.dot.gov/publications/fhwahop12035/index.htm>.

If you have any questions about these comments, please contact Emily Gibson, the project coordinator, at Emily.Gibson@dot.ca.gov, and refer to GTS # 07-LA-2021-03634.

Sincerely,

Emily Gibson

EMILY GIBSON
Acting IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse



NATIVE AMERICAN HERITAGE COMMISSION

June 30, 2021

Megan Taggart
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

RECEIVED

JUL 06 2021

PLANNING DEPT.

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keller
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
William Mungary
Paiute/White Mountain
Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[Vacant]

COMMISSIONER
[Vacant]

COMMISSIONER
[Vacant]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

Re: 2021060494, City of Palmdale 2045 General Plan Update Project, Los Angeles County

Dear Ms. Taggart:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b))). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1))). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

- 1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project:** Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
 - a. A brief description of the project.
 - b. The lead agency contact information.
 - c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
 - d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

- 2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report:** A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subs. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
 - a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

- 3. Mandatory Topics of Consultation If Requested by a Tribe:** The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
 - a. Alternatives to the project.
 - b. Recommended mitigation measures.
 - c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

- 4. Discretionary Topics of Consultation:** The following topics are discretionary topics of consultation:
 - a. Type of environmental review necessary.
 - b. Significance of the tribal cultural resources.
 - c. Significance of the project's impacts on tribal cultural resources.
 - d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

- 5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process:** With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

- 6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document:** If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
 - a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
 - b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

- 7. Conclusion of Consultation:** Consultation with a tribe shall be considered concluded when either of the following occurs:
- a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
 - b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).
- 8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document:** Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).
- 9. Required Consideration of Feasible Mitigation:** If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).
- 10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:**
- a. Avoidance and preservation of the resources in place, including, but not limited to:
 - i. Planning and construction to avoid the resources and protect the cultural and natural context.
 - ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
 - b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - i. Protecting the cultural character and integrity of the resource.
 - ii. Protecting the traditional use of the resource.
 - iii. Protecting the confidentiality of the resource.
 - c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
 - d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
 - e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
 - f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

- 11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource:** An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
- a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
 - b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
 - c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. **Tribal Consultation:** If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation.** There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation:** Consultation should be concluded at the point in which:
 - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
 - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
 - a. If part or all of the APE has been previously surveyed for cultural resources.
 - b. If any known cultural resources have already been recorded on or adjacent to the APE.
 - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
 - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
 - b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
 - a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
 - b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
 - a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, § 15064.5(f) (CEQA Guidelines § 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
 - b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
 - c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code § 7050.5, Public Resources Code § 5097.98, and Cal. Code Regs., tit. 14, § 15064.5, subdivisions (d) and (e) (CEQA Guidelines § 15064.5, subs. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address:
Andrew.Green@nahc.ca.gov.

Sincerely,



Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse



July 16, 2021

Ref. DOC 6232747

Ms. Megan Taggart, Planning Manager
City of Palmdale
Department of Economic and Community Development
38250 Sierra Highway
Palmdale, CA 93550

Dear Ms. Taggart:

NOP Response for City of Palmdale 2045 General Plan Update

The Los Angeles County Sanitation Districts (Districts) received a Notice of Preparation of a Draft Environmental Impact Report (NOP) for the subject project on June 25, 2021. The City of Palmdale (City) is located within the jurisdictional boundaries of District Nos. 14 and 20. We offer the following comments regarding sewerage service:

1. The Districts own, operate, and maintain the large trunk sewers that form the backbone of the regional wastewater conveyance system. Local collector and/or lateral sewer lines are the responsibility of the jurisdiction in which they are located. As such, the Districts cannot comment on any deficiencies in the sewerage system in the City except to state that presently no deficiencies exist in Districts' facilities that serve the City. For information on deficiencies in the City sewerage system, please contact the City Department of Public Works and/or the Los Angeles County Department of Public Works.
2. The Districts should review individual developments within the City to determine whether or not sufficient trunk sewer capacity exists to serve each project and if Districts' facilities will be affected by the project.
3. The wastewater generated by the City is treated at the Palmdale Water Reclamation Plant, which has a capacity of 12 million gallons per day (mgd) and currently processes an average flow of 9.3 mgd, or the Lancaster Water Reclamation Plant, which has a capacity of 18 mgd and currently processes an average flow of 14.3 mgd.
4. In order to estimate the volume of wastewater the project will generate, go to www.lacsd.org, under Services, then Wastewater Program and Permits, select Will Serve Program, and scroll down to click on the [Table 1, Loadings for Each Class of Land Use](#) link for a copy of the Districts' average wastewater generation factors.
5. The Districts are empowered by the California Health and Safety Code to charge a fee to connect facilities (directly or indirectly) to the Districts' Sewerage System or to increase the strength or quantity of wastewater discharged from connected facilities. This connection fee is a capital facilities fee that is used by the Districts to upgrade or expand the Sewerage System. Payment of a connection fee may be required before this project is permitted to discharge to the Districts' Sewerage System. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, under Services, then Wastewater (Sewage) and select Rates & Fees. In determining the impact to the Sewerage System and applicable connection fees, the Districts will determine the user category (e.g. Condominium, Single Family home, etc.) that best represents the actual or anticipated use of the parcel(s) or facilities on the parcel(s) in the development. For more

specific information regarding the connection fee application procedure and fees, the developer should contact the Districts' Wastewater Fee Public Counter at (562) 908-4288, extension 2727.

6. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CCA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise the developer that the Districts intend to provide this service up to the levels that are legally permitted and to inform the developer of the currently existing capacity and any proposed expansion of the Districts' facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2743 or at mandyng@lacs.org.

Very truly yours,

Mandy Ng

Mandy Ng
Environmental Planner
Facilities Planning Department

MMN:mmn



**COUNTY OF LOS ANGELES
FIRE DEPARTMENT**

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
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www.fire.lacounty.gov

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FIFTH DISTRICT

July 20, 2021

RECEIVED

JUL 26 2021

PLANNING DEPT.

Megan Taggart, Planning Manager
City of Palmdale
Department of Economic and Community Development
38250 Sierra Highway
Palmdale, CA 93550

Dear Ms. Taggart:

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT, "PALMDALE 2045 GENERAL PLAN UPDATE," WILL HELP THE CITY PLAN FOR IMPORTANT COMMUNITY ISSUES SUCH AS NEW GROWTH, HOUSING AND INFRASTRUCTURE NEEDS, AND ENVIRONMENTAL PROTECTION, IT ALSO SETS THE STAGE FOR FUTURE SOCIAL, PHYSICAL, AND ECONOMIC DEVELOPMENT OF THE CITY, PALMDALE, FFER 2021006978

The Notice of Preparation of a Draft Environmental Impact Report has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department.

The following are their comments:

PLANNING DIVISION:

We have no comments.

For any questions regarding this response, please contact Kien Chin, Planning Analyst, at (323) 881-2404 or Kien.Chin@fire.lacounty.gov.

LAND DEVELOPMENT UNIT:

1. Each development must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.

SERVING THE UNINCORPORATED AREAS OF LOS ANGELES COUNTY AND THE CITIES OF:

AGOURA HILLS
ARTESIA
AZUSA
BALDWIN PARK
BELL
BELL GARDENS
BELLFLOWER
BRADBURY
CALABASAS

CARSON
CERRITOS
CLAREMONT
COMMERCE
COVINA
CUDAHY
DIAMOND BAR
DUARTE

EL MONTE
GARDENA
GLENORA
HAWAIIAN GARDENS
HAWTHORNE
HERMOSA BEACH
HIDDEN HILLS
HUNTINGTON PARK
INDUSTRY

INGLEWOOD
IRWINDALE
LA CANADA-FLINTRIDGE
LA HABRA
LA MIRADA
LA PUENTE
LAKEWOOD
LANCASTER

LAWNDALE
LOMITA
LYNWOOD
MALIBU
MAYWOOD
NORWALK
PALMDALE
PALOS VERDES ESTATES
PARAMOUNT

PICO RIVERA
POMONA
RANCHO PALOS VERDES
ROLLING HILLS
ROLLING HILLS ESTATES
ROSEMEAD
SAN DIMAS
SANTA CLARITA

SIGNAL HILL
SOUTH EL MONTE
SOUTH GATE
TEMPLE CITY
VERNON
WALNUT
WEST HOLLYWOOD
WESTLAKE VILLAGE
WHITTIER

2. Every building constructed shall be accessible to Fire Department apparatus by way of access roadways, with an all-weather surface of not less than 20 feet in width. The roadway width shall be increased based on the type development proposed by the applicant. The roadway shall be extended to within 150 feet of all portions of the exterior walls when measured by an unobstructed route around the exterior of the building. The roadway shall provide approved signs and/or stripping stating, "NO PARKING - FIRE LANE" and shall be maintained in accordance with the County of Los Angeles Fire Code.
3. Every building constructed shall provide an adequate water supply for fire protection purposes. The fire hydrant spacing shall be in compliance with Appendix C in the County of Los Angeles Fire Code (Title 32). The fire flow requirements should be addressed in Appendix B of the County of Los Angeles Fire Code (Title 32).
4. A property which is located within an area described by the Fire Department as a Fire Hazard Severity Zone, a "Fuel Modification Plan" shall be submitted for review by the Fuel Modification Unit prior to building plan approval. Please contact the Department's Fuel Modification Unit for details. The Fuel Modification Plan Review Unit is located at 605 North Angeleno Avenue in the City of Azusa CA 91702-2904. They may be reached at (626) 969-5205 or visit <https://www.fire.lacounty.gov/forestry-division/forestry-fuel-modification>
5. When involved with subdivision in a city contracting fire protection with the County of Los Angeles Fire Department, Fire Department requirements for access, fire flows, and hydrants are addressed during the subdivision tentative map stage by the Land Development Unit.
6. Specific fire and life safety requirements for the construction phase will be addressed at the Fire Department building plan check review. There may be additional fire and life safety requirements during this time.

The Land Development Unit appreciates the opportunity to comment on this project. Should any questions arise regarding the Land Development Unit response, please contact Wally Collins at (323) 890-4243 or Wally.Collins@fire.lacounty.gov.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

The statutory responsibilities of the County of Los Angeles Fire Department's Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed.

Under the Los Angeles County Oak tree Ordinance, a permit is required to cut, destroy, remove, relocate, inflict damage or encroach into the protected zone of any tree of the Oak genus which is 25 inches or more in circumference (eight inches in diameter), as measured 4 1/2 feet above mean natural grade.

Megan Taggart, Planning Manager

July 20, 2021

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If Oak trees are known to exist in the proposed project area further field studies should be conducted to determine the presence of this species on the project site.

The County of Los Angeles Fire Department's Forestry Division has no further comments regarding this project.

For any questions regarding this response, please contact Forestry Assistant, Nicholas Alegria at (818) 890-5719.

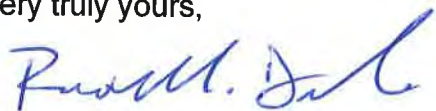
HEALTH HAZARDOUS MATERIALS DIVISION:

The Health Hazardous Materials Division of the Los Angeles County Fire Department has no comments or requirements for the project at this time.

Please contact HHMD senior typist-clerk, Perla Garcia at (323) 890-4035 or Perla.garcia@fire.lacounty.gov if you have any questions.

If you have any additional questions, please contact this office at (323) 890-4330

Very truly yours,



RONALD M. DURBIN, CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

RMD:ac



State of California – Natural Resources Agency

DEPARTMENT OF FISH AND WILDLIFE

South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201

www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



July 21, 2021

Megan Taggart
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550
MTaggart@cityofpalmdale.org

Subject: Notice of Preparation of a Draft Environmental Impact Report for City of Palmdale General Plan Update (Palmdale 2045) Project, SCH #2021060494, City of Palmdale, Los Angeles County

Dear Ms. Taggart:

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) from the City of Palmdale (City; Lead Agency) for the Palmdale General Plan Update (Project). Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State [Fish & G. Code, §§ 711.7, subdivision (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect State fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 *et seq.*). Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq.*), or CESA-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 *et seq.*), CDFW recommends the Project proponent obtain appropriate authorization under the Fish and Game Code.

Conserving California's Wildlife Since 1870

Megan Taggart
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Project Description and Summary

Objective: The proposed Project is a comprehensive update to the City's General Plan, which is the guiding document for the future of Palmdale over 25 years (2020-2045). The General Plan will focus on enhancing community identity, building on planned infrastructure investments, and improving multi-modal active transportation and connectivity. The Project identifies major strategies and physical improvements for the City over the next 25 years. These strategies include creating a downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, and transforming Palmdale Boulevard into a mixed-use corridor. The Project also aims to promote a diversity of housing types in the City, form village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. The following actions will also be taken by the City in connection with the General Plan Update and are also considered part of the proposed Project to be analyzed in the forthcoming DEIR: Adoption and implementation of the General Plan Update; Adoption and implementation of the Climate Action Plan; and Housing Element Update.

Location: The Project would apply to the entire geographic area located within the boundaries of the City of Palmdale. The City is located in the southern region of the Antelope Valley, approximately 60 miles northeast of downtown Los Angeles along State Highway 14.

Comments and Recommendations

CDFW offers the comments and recommendations below to assist the City in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources.

Specific Comments

- 1) Joshua tree. Joshua trees (*Yucca brevifolia*) are known to occur on vacant land within the City. Joshua tree is a CESA-listed candidate species. As a CESA-listed candidate species, western Joshua tree is granted full protection of a threatened species under CESA. Activities related to housing or infrastructure development may directly remove habitats or indirectly cause added pressures to the habitats in which these species reside, leading to further species decline. Any project activities that involve grading or vegetation removal would likely result in "take" or adverse impacts to western Joshua tree, its seed bank, and its sole pollinator, the Joshua tree yucca moth (*Tegeticula synthetica*).

Fish and Game Commission approved a Special Order (2084) on December 10, 2020, which delegated authority to the City of Palmdale for the issuance of some permits pertaining to new and existing single-family residences on behalf of CDFW. Special Order 749.11 authorizes the take of western Joshua trees during the candidacy period when a dead western Joshua tree needs to be removed or a western Joshua tree needs to be trimmed (CDFW 2021a). Special Order 749.12 authorizes the take of western Joshua trees by the City of Palmdale for certain projects pertaining to accessory structures in developed parcels within an existing single-family residence (CDFW 2021a). For this Project, take of western Joshua trees is not authorized by Special Order 749.11 or 749.12. Therefore, CDFW concurs, that the City require the Project Applicant to consult with CDFW for authorization to take western Joshua trees pursuant to Fish and Game Code section

Megan Taggert
 City of Palmdale
 July 21, 2021
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2080.1.

CDFW primarily recommends the City avoid impacts to western Joshua tree to the greatest extent feasible. If “take” or adverse impacts to western Joshua trees cannot be avoided during any project activities or over the life of the Project, the City should apply for a CESA Incidental Take Permit (ITP), pursuant to Fish and Game Code section 2080 *et seq.* Early consultation is encouraged, as significant modification to a Project and mitigation measures may be required to obtain a CESA Permit. The City should consult with CDFW to obtain additional Joshua tree survey requirements. CDFW may require separate CEQA documentation for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

- 2) Additional CESA- and Endangered Species Act (ESA)-Covered Species. The City and its surrounding vicinity may support additional CESA- and ESA-listed species. Activities related to housing or infrastructure development may directly remove habitats or indirectly cause added pressures to the habitats in which these species reside, leading to further species decline. CDFW recommends the DEIR discuss the Project’s potential impacts on the following species and associated habitat: tricolored blackbird (*Agelaius tricolor*), Swainson’s hawk (*Buteo swainsoni*), and Mohave ground squirrel (*Xerspermophilus mohavensis*), which are CESA-listed; and least Bell’s vireo (*Vireo bellii pusillus*), which is ESA- and CESA-listed.

CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species, or CESA-listed plant species that results from the Project is prohibited, except as authorized by State law (Fish & G. Code §§ 2080, 2085; Cal. Code Regs., tit. 14, §786.9). Consequently, if the Project or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends that the Project proponent seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from CDFW may include an ITP or a consistency determination in certain circumstances Please refer to Specific Comment #1 regarding consultation with CDFW on ITPs.

- 3) Additional Special Status Species. The City and its surrounding vicinity may also support additional special status species, namely, those considered Species of Special Concern by CDFW. Activities related to housing or infrastructure development may directly remove habitats or indirectly cause added pressures to the habitats in which these species reside, leading to further species decline. CDFW recommends the DEIR discuss the Project’s potential impacts on the following species and associated habitat: northern California legless lizard (*Anniella pulchra*), California glossy snake (*Arizona elegans occidentalis*), burrowing owl (*Athene cunicularia*), mountain plover (*Charadrius montanus*), western pond turtle (*Emys marmorata*), loggerhead shrike (*Lanius ludovicianus*), coast horned lizard (*Phrynosoma blainvillii*), two-striped garter snake (*Thamnophis hammondi*), and Le Conte’s thrasher (*Toxostoma lecontei*).

- 4) Crotch’s Bumble Bee. The City and its surrounding vicinity may also support additional

Megan Taggert
 City of Palmdale
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special status species, namely, Crotch's bumble bee (*Bombus crotchii*). Project activities related to housing or infrastructure development will involve ground disturbing activities in occupied habitat may result in loss of foraging habitat, crushing or filling of active bee colonies, causing the death or injury of adults, eggs, and larvae.

Crotch's bumble bee has a State ranking of S1/S2. This means that the Crotch's bumble bee is considered critically imperiled or imperiled and is extremely rare (often 5 or fewer populations). Also, Crotch's bumble bee has a very restricted range and steep population declines make the species vulnerable to extirpation from the State (CDFW 2017). Accordingly, Crotch's bumble bee meets the CEQA definition of rare, threatened, or endangered species (CEQA Guidelines, § 15380). Therefore, take of Crotch's bumble bee could require a mandatory finding of significance by the City (CEQA Guidelines, § 15065). The Project's associated housing and infrastructure development activities have the potential to substantially reduce or adversely modify habitat, impair the viability of populations, and reduce the number and range of the Crotch's bumble bee. CDFW recommends the DEIR discuss the Project's potential impacts on the Crotch's bumble bee and associated habitat.

- 5) Biologically Significant Sites Inventory. CDFW recommends the City identify and prepare a map of the following areas if present within or adjacent to the City boundary. In addition, the City should consider the Project's potential impacts on the following areas if present within or adjacent to the Project boundary:
- a) Conservation easements or mitigation lands;
 - b) U.S. Fish and Wildlife Service [Threatened & Endangered Species Active Critical Habitat](#) (USFWS 2020);
 - c) County of Los Angeles Significant Ecological Areas (SEAs);
 - d) Wildlife corridors;
 - e) Sensitive Natural Communities [see General Comment #3 (Biological Baseline Assessment)];
 - f) Aquatic and riparian resources including (but not limited to) rivers, channels, streams, wetlands, and vernal pools, and associated natural plant communities; and
 - g) City parks and open space, particularly areas with undeveloped land.

CDFW recommends the City avoid sites that may have a direct or indirect impact on conservation easements or lands set aside as mitigation. CDFW recommends the DEIR include measures where future housing development or infrastructure facilitated by the Project mitigate (avoid if feasible) for impacts on biological resources occurring within SEAs and critical habitat, as well as mitigate for impacts on wildlife corridors, sensitive natural communities, aquatic and riparian resources, and urban forests.

- 6) Development and Conservation. To accommodate increased housing and infrastructure needs, the City is expected to build more units in the coming years. CDFW recommends the City maximize development where it already exists in order to protect natural lands from development and habitat loss. CDFW recommends the City consider regional and State-wide natural resource conservation strategies outlined in the following reports: [Safeguarding California Plan: 2018 Update](#) (CNRA 2018); [California State Wildlife Action Plan: A Conservation Legacy for Californians](#) (CDFW 2015); and, [California 2030 Natural and Working Lands Climate Change Implementation Plan: January 2019 Draft](#) (CalEPA et al.

Megan Taggert
City of Palmdale
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2019).

- 7) Jurisdictional Waters. According to the US Fish and Wildlife Service (USFWS) [National Wetlands Inventory](#), there are multiple segments of streams running throughout the City (USFWS 2021). As a Responsible Agency under CEQA, CDFW has authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (including vegetation associated with the stream or lake) of a river or stream, or use material from a streambed. For any such activities, the project applicant (or "entity") must provide written notification to CDFW pursuant to Fish and Game Code Section 1600 *et seq.*
- a) CDFW's issuance of a Lake and Streambed Alteration (LSA) Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the environmental document of the local jurisdiction (Lead Agency) for the project. To minimize additional requirements by CDFW pursuant to section 1600 *et seq.* and/or under CEQA, the environmental document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA Agreement. Please visit CDFW's [Lake and Streambed Alteration Program](#) webpage for information about LSA Notification (CDFW 2021f).
 - b) In the event the project area may support aquatic, riparian, and wetland habitats; a preliminary delineation of the streams and their associated riparian habitats should be included in the environmental document. The delineation should be conducted pursuant to the U.S. Fish and Wildlife Service (USFWS) wetland definition adopted by CDFW (Cowardin et al. 1970). Be advised that some wetland and riparian habitats subject to CDFW's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers' Section 404 permit and Regional Water Quality Control Board Section 401 Certification.
 - c) In project areas which may support ephemeral or episodic streams, herbaceous vegetation, woody vegetation, and woodlands also serve to protect the integrity of these resources and help maintain natural sedimentation processes; therefore, CDFW recommends effective setbacks be established to maintain appropriately sized vegetated buffer areas adjoining ephemeral drainages.
 - d) Project-related changes in upstream and downstream drainage patterns, runoff, and sedimentation should be included and evaluated in the environmental document.
 - e) As part of the LSA Notification process, CDFW requests a hydrological evaluation of the 100, 50, 25, 10, 5, and 2-year frequency storm event for existing and proposed conditions. CDFW recommends the environmental document evaluate the results and address avoidance, minimization, and/or mitigation measures that may be necessary to reduce potential significant impacts.
- 8) Wetland Resources. According to the US Fish and Wildlife Service (USFWS) [National Wetlands Inventory](#), there are a number of wetland sites throughout the City (USFWS 2021). CDFW, as described in Fish and Game Code section 703(a), is guided by the Fish and

Megan Taggart
City of Palmdale
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Game Commission's (Commission) policies. The [Wetlands Resources](#) policy the Commission "...seek[s] to provide for the protection, preservation, restoration, enhancement and expansion of wetland habitat in California. Further, it is the policy of the Fish and Game Commission to strongly discourage development in or conversion of wetlands. It opposes, consistent with its legal authority, any development or conversion that would result in a reduction of wetland acreage or wetland habitat values. To that end, the Commission opposes wetland development proposals unless, at a minimum, project mitigation assures there will be 'no net loss' of either wetland habitat values or acreage. The Commission strongly prefers mitigation which would achieve expansion of wetland acreage and enhancement of wetland habitat values" (CFGF 2005).

- a) The Wetlands Resources policy provides a framework for maintaining wetland resources and establishes mitigation guidance. CDFW encourages avoidance of wetland resources as a primary mitigation measure and discourages the development or type conversion of wetlands to uplands. These wetlands include, but are not limited to, those along Anaverde Creek, Amargosa Creek, Lake Palmdale, Little Rock Wash, Rogers Creek, and Pine Creek. CDFW encourages activities that would avoid the reduction of wetland acreage, function, or habitat values. Once avoidance and minimization measures have been exhausted, a project must include mitigation measures to assure a "no net loss" of either wetland habitat values, or acreage, for unavoidable impacts to wetland resources. Conversions include, but are not limited to, conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether ephemeral, intermittent, or perennial, should be retained and provided with substantial setbacks, which preserve the riparian and aquatic values and functions for the benefit to on-site and off-site wildlife populations. CDFW recommends mitigation measures to compensate for unavoidable impacts be included in an environmental document and these measures should compensate for the loss of function and value.
 - b) The Fish and Game Commission's [Water policy](#) guides CDFW on the quantity and quality of the waters of this State that should be apportioned and maintained respectively so as to produce and sustain maximum numbers of fish and wildlife; to provide maximum protection and enhancement of fish and wildlife and their habitat; encourage and support programs to maintain or restore a high quality of the waters of this State; prevent the degradation thereof caused by pollution and contamination; and, endeavor to keep as much water as possible open and accessible to the public for the use and enjoyment of fish and wildlife (CFGF 1994). CDFW recommends avoidance of water practices and structures that use excessive amounts of water, and minimization of impacts that negatively affect water quality, to the extent feasible (Fish & G. Code, § 5650).
- 9) [Nesting Birds](#). The City supports habitats, such as Joshua tree woodland, that numerous bird species depend on. CDFW recommends the DEIR include measures where future housing and infrastructure development facilitated by the Project avoids potential impacts to nesting birds. Project activities occurring during the bird and raptor breeding and nesting season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.
- a) Migratory nongame native bird species are protected by international treaty under the

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Federal Migratory Bird Treaty Act (MBTA) of 1918 (Code of Federal Regulations, Title 50, § 10.13). Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA). It is unlawful to take, possess, or needlessly destroy the nest or eggs of any raptor.

- b) CDFW recommends that measures be taken to fully avoid impacts to nesting birds and raptors. Ground-disturbing activities (e.g., mobilizing, staging, drilling, and excavating) and vegetation removal should occur outside of the avian breeding season which generally runs from February 15 through September 15 (as early as January 1 for some raptors) to avoid take of birds, raptors, or their eggs.
 - c) If impacts to nesting birds and raptors cannot be avoided, CDFW recommends the DEIR include measures where future housing development facilitated by the Project mitigates for impacts. CDFW recommends surveys by a qualified biologist with experience conducting breeding bird and raptor surveys. Surveys are needed to detect protected native birds and raptors occurring in suitable nesting habitat that may be disturbed and any other such habitat within 300 feet of the project disturbance area, to the extent allowable and accessible. For raptors, this radius should be expanded to 500 feet and 0.5 mile for special status species, if feasible. Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.
- 10) Loss of Bird and Raptor Nesting and Foraging Habitat. Joshua tree woodland habitat in the City supports nesting birds, including sensitive and special status species. Development occurring adjacent to the wildlife urban interface and habitats such as Joshua tree woodland could impact nesting and breeding habitat for birds and raptors. Direct impacts such as habitat loss and indirect impacts such as increased edge effects could eliminate habitat or reduce habitat quality.
- a) CDFW recommends the DEIR analyze and discuss the Project's impacts on bird and raptor nesting and breeding habitat. Edge effects should also be analyzed and discussed. CDFW recommends the DEIR disclose the amount of bird and raptor nesting and breeding habitat that would be impacted and lost as a result of the proposed Project.
 - b) CDFW recommends the Project avoid developing and encroaching onto nesting and breeding habitat for birds and raptors. If avoidance is not feasible, CDFW recommends the DEIR provide measures to mitigate for impacts on bird and raptor nesting and breeding habitat. Depending on the status of the bird or raptor species impacted, replacement habitat acres should increase with the occurrence of a Species of Special Concern. Replacement habitat acres should further increase with the occurrence of a CESA-listed threatened or endangered species.
 - c) CDFW recommends the DEIR provide measures where future development facilitated by the Project avoids removal of any native trees, large and dense-canopied native and non-native trees, and trees occurring in high density. CDFW also recommends avoiding impacts to understory vegetation (e.g., ground cover, subshrubs, and shrubs). If trees are removed, CDFW recommends future development facilitated by the Project provides

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replacement to compensate for temporal or permanent loss habitat within a project site. CDFW recommends planting native tree and shrub species preferred by birds and are native to the area.

General Comments

- 1) **Disclosure.** An environmental document should provide an adequate, complete, and detailed disclosure about the effect which a proposed project is likely to have on the environment (Pub. Resources Code, § 20161; CEQA Guidelines, §15151). Adequate disclosure is necessary so CDFW may provide comments on the adequacy of proposed avoidance, minimization, or mitigation measures, as well as to assess the significance of the specific impact relative to the species (e.g., current range, distribution, population trends, and connectivity).
- 2) **Mitigation Measures.** Public agencies have a duty under CEQA to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of feasible alternatives or mitigation measures [CEQA Guidelines, §§ 15002(a)(3), 15021]. Pursuant to CEQA Guidelines section 15126.4, an environmental document shall describe feasible measures which could mitigate for impacts below a significant level under CEQA.
 - a) **Level of Detail.** Mitigation measures must be feasible, effective, implemented, and fully enforceable/imposed by the lead agency through permit conditions, agreements, or other legally binding instruments (Pub. Resources Code, § 21081.6(b); CEQA Guidelines, §§ 15126.4, 15041). A public agency shall provide the measures that are fully enforceable through permit conditions, agreements, or other measures (Pub. Resources Code, § 21081.6). CDFW recommends that the City prepare mitigation measures that are specific, detailed (i.e., responsible party, timing, specific actions, location), and clear in order for a measure to be fully enforceable and implemented successfully via a mitigation monitoring and/or reporting program (CEQA Guidelines, § 15097; Pub. Resources Code, § 21081.6). Adequate disclosure is necessary so CDFW may provide comments on the adequacy and feasibility of proposed mitigation measures.
 - b) **Disclosure of Impacts.** If a proposed mitigation measure would cause one or more significant effects, in addition to impacts caused by the Project as proposed, the environmental document should include a discussion of the effects of proposed mitigation measures [CEQA Guidelines, § 15126.4(a)(1)]. In that regard, the environmental document should provide an adequate, complete, and detailed disclosure about a project's proposed mitigation measure(s). Adequate disclosure is necessary so CDFW may assess the potential impacts of proposed mitigation measures.
- 3) **Biological Baseline Assessment.** An adequate biological resources assessment should provide a complete assessment and impact analysis of the flora and fauna within and adjacent to a project site and where a project may result in ground disturbance. The assessment and analysis should place emphasis upon identifying endangered, threatened, sensitive, regionally, and locally unique species, and sensitive habitats. Impact analysis will aid in determining any direct, indirect, and cumulative biological impacts, as well as specific mitigation or avoidance measures necessary to offset those impacts. CDFW recommends avoiding any sensitive natural communities found on or adjacent to a project. CDFW also

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considers impacts to Species of Special Concern a significant direct and cumulative adverse effect without implementing appropriate avoid and/or mitigation measures. A project-level environmental document should include the following information:

- a) Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region [CEQA Guidelines, § 15125(c)]. An environmental document should include measures to fully avoid and otherwise protect Sensitive Natural Communities from project-related impacts. CDFW considers these communities as threatened habitats having both regional and local significance. Plant communities, alliances, and associations with a state-wide ranking of S1, S2, S3 and S4 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by visiting [Vegetation Classification and Mapping Program - Natural Communities](#) webpage (CDFW 2021b);
- b) A thorough, recent, floristic-based assessment of special status plants and natural communities following CDFW's [Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities](#) (CDFW 2018). Adjoining habitat areas should be included where project construction and activities could lead to direct or indirect impacts off site;
- c) Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at a project site and within the neighboring vicinity. The [Manual of California Vegetation](#) (MCV), second edition, should also be used to inform this mapping and assessment (Sawyer et al. 2009). Adjoining habitat areas should be included in this assessment where project activities could lead to direct or indirect impacts off site. Habitat mapping at the alliance level will help establish baseline vegetation conditions;
- d) A complete, recent, assessment of the biological resources associated with each habitat type on site and within adjacent areas that could also be affected by a project. CDFW's [California Natural Diversity Database](#) (CNDDDB) in Sacramento should be contacted to obtain current information on any previously reported sensitive species and habitat (CDFW 2021c). An assessment should include a nine-quadrangle search of the CNDDDB to determine a list of species potentially present at a project site. A lack of records in the CNDDDB does not mean that rare, threatened, or endangered plants and wildlife do not occur in the project site. Field verification for the presence or absence of sensitive species is necessary to provide a complete biological assessment for adequate CEQA review [CEQA Guidelines, § 15003(i)];
- e) A complete, recent, assessment of rare, threatened, and endangered, and other sensitive species on site and within the area of potential effect, including California Species of Special Concern, and California Fully Protected Species (Fish & G. Code, §§ 3511, 4700, 5050, and 5515). Species to be addressed should include all those which meet the CEQA definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of a project site should also be addressed such as wintering, roosting, nesting, and foraging habitat. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, may be required if suitable habitat is present. See CDFW's [Survey and Monitoring Protocols and Guidelines](#) for established

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- survey protocol for select species (CDFW 2021d). Acceptable species-specific survey procedures may be developed in consultation with CDFW and the U.S. Fish and Wildlife Service; and,
- f) A recent wildlife and rare plant survey. CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of a proposed project may warrant periodic updated surveys for certain sensitive taxa, particularly if build out could occur over a protracted time frame or in phases.
 - g) A biological resources survey should include identification and delineation of any rivers, streams, and lakes and their associated natural plant communities/habitats. This includes any culverts, ditches, storm channels that may transport water, sediment, pollutants, and discharge into rivers, streams, and lakes.
- 4) Data. CEQA requires that information developed in environmental impact reports be incorporated into a database which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special status species and natural communities detected by completing and submitting [CNDDDB Field Survey Forms](#) (CDFW 2021e). The City should ensure data collected at a project-level has been properly submitted, with all data fields applicable filled out. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred.
- 5) Biological Direct, Indirect, and Cumulative Impacts. CDFW recommends providing a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts. The DEIR should address the following:
- a) A discussion regarding Project-related indirect impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands [e.g., preserve lands associated with a Natural Community Conservation Plan (NCCP, Fish & G. Code, § 2800 et. seq.)]. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the DEIR;
 - b) A discussion of both the short-term and long-term effects to species population distribution and concentration and alterations of the ecosystem supporting the species impacted [CEQA Guidelines, § 15126.2(a)];
 - c) A discussion of potential adverse impacts from lighting, noise, temporary and permanent human activity, and exotic species, and identification of any mitigation measures;
 - d) A discussion on Project-related changes on drainage patterns; the volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and, post-Project fate of runoff from the Project sites. The discussion should also address the potential water extraction activities and the potential resulting impacts on the habitat (if any) supported by the groundwater.

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Mitigation measures proposed to alleviate such Project impacts should be included;

- e) An analysis of impacts from proposed changes to land use designations and zoning, and existing land use designation and zoning located nearby or adjacent to natural areas that may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the DEIR; and,
 - f) A cumulative effects analysis, as described under CEQA Guidelines section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant and wildlife species, habitat, and vegetation communities. If the City determines that the Project would not have a cumulative impact, the environmental document should indicate why the cumulative impact is not significant. The City's conclusion should be supported by facts and analyses [CEQA Guidelines, § 15130(a)(2)].
- 6) Project Description and Alternatives. To enable CDFW to adequately review and comment on the proposed Project from the standpoint of the protection of plants, fish, and wildlife, we recommend the following information be included in the DEIR:
- a) A complete discussion of the purpose and need for, and description of, the proposed Project;
 - b) CEQA Guidelines section 15126.6(a) states that an environmental document shall describe a reasonable range of potentially feasible alternatives to the Project, or to the location of the Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project. CEQA Guidelines section 15126.6(f)(2) states if the Lead Agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion and should include reasons in the environmental document; and,
 - c) A range of feasible alternatives to Project component location and design features to avoid or otherwise minimize direct and indirect impacts to sensitive biological resources and wildlife movement areas. CDFW recommends the City consider configuring Project construction and activities, as well as the development footprint, in such a way as to fully avoid impacts to sensitive and special status plants and wildlife species, habitat, and sensitive vegetation communities. CDFW also recommends the City consider establishing appropriate setbacks from sensitive and special status biological resources. Setbacks should not be impacted by ground disturbance or hydrological changes for the duration of the Project and from any future development. As a general rule, CDFW recommends reducing or clustering the development footprint to retain unobstructed spaces for vegetation and wildlife and provide connections for wildlife between properties and minimize obstacles to open space.

Project alternatives should be thoroughly evaluated, even if an alternative would impede, to some degree, the attainment of the Project objectives or would be more costly (CEQA Guidelines, § 15126.6).

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- d) Where the Project may impact aquatic and riparian resources, CDFW recommends the City consider alternatives that would fully avoid impacts to such resources. CDFW also recommends alternatives that would allow not impede, alter, or otherwise modify existing surface flow; watercourse and meander; and water-dependent ecosystems and vegetation communities. Project-related designs should consider elevated crossings to avoid channelizing or narrowing of streams. Any modifications to a river, creek, or stream may cause or magnify upstream bank erosion, channel incision, and drop in water level and cause the stream to alter its course of flow.
- 7) Translocation/Salvage of Plants and Animal Species. Translocation and transplantation is the process of moving an individual from a project site and permanently moving it to a new location. CDFW generally does not support the use of, translocation or transplantation as the primary mitigation strategy for unavoidable impacts to rare, threatened, or endangered plant or animal species. Studies have shown that these efforts are experimental and the outcome unreliable. CDFW has found that permanent preservation and management of habitat capable of supporting these species is often a more effective long-term strategy for conserving sensitive plants and animals and their habitats.
- 8) Compensatory Mitigation. An environmental document should include mitigation measures for adverse Project related direct or indirect impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of project-related impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed. Areas proposed as mitigation lands should be protected in perpetuity with a conservation easement, financial assurance and dedicated to a qualified entity for long-term management and monitoring. Under Government Code, section 65967, the Lead Agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves.
- 9) Long-term Management of Mitigation Lands. For proposed preservation and/or restoration, an environmental document should include measures to protect the targeted habitat values from direct and indirect negative impacts in perpetuity. The objective should be to offset the project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include (but are not limited to) restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, and increased human intrusion. An appropriate non-wasting endowment should be set aside to provide for long-term management of mitigation lands.

Conclusion

We appreciate the opportunity to comment on the NOP for the Palmdale General Plan Update to assist the City of Palmdale in identifying and mitigating Project impacts on biological resources. If you have any questions or comments regarding this letter, please contact Felicia Silva, Environmental Scientist, at Felicia.Silva@wildlife.ca.gov or (562) 292-8105.

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Sincerely,

DocuSigned by:



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Victoria Tang signing for

Erinn Wilson-Olgin
Environmental Program Manager I
South Coast Region

ec: CDFW

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July 28, 2021

Ms. Megan Taggart, Planning Manager
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RE: SCAG Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Palmdale 2045 General Plan Update [SCAG NO. IGR10425]

Dear Ms. Taggart,

Thank you for submitting the Notice of Preparation of a Draft Environmental Impact Report for the Palmdale 2045 General Plan Update ("proposed project") to the Southern California Association of Governments (SCAG) for review and comment.

Pursuant to Senate Bill (SB) 375, SCAG is the designated Regional Transportation Planning Agency under state law and is responsible for preparation of the Regional Transportation Plan (RTP) including the Sustainable Communities Strategy (SCS).

SCAG staff has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the Palmdale 2045 General Plan Update in Los Angeles County. The proposed project is a General Plan Update for 2020 – 2045 that covers the state-required nine topics and economic development, urban design, infrastructure, military readiness, community facilities, sustainability and resilience, and climate change.

When available, please email environmental documentation to IGR@scag.ca.gov providing, at a minimum, the full public comment period for review.

If you have any questions regarding the attached comments, please contact the Inter-Governmental Review (IGR) Program, attn.: Anita Au, Senior Regional Planner, at (213) 236-1874 or IGR@scag.ca.gov. Thank you.

Sincerely,

[Handwritten signature of Rongsheng Luo]

Rongsheng Luo
Acting Manager, Compliance and Performance Monitoring

1 Lead agencies such as local jurisdictions have the sole discretion in determining a local project's consistency with the 2020 RTP/SCS (Connect SoCal) for the purpose of determining consistency for CEQA.

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**COMMENTS ON THE NOTICE OF PREPARATION OF A
DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE
PALMDALE 2045 GENERAL PLAN UPDATE [SCAG NO. IGR10425]**

CONSISTENCY WITH CONNECT SOCIAL

SCAG provides informational resources to facilitate the consistency of the proposed project with the adopted 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS or Connect SoCal). For the purpose of determining consistency with CEQA, lead agencies such as local jurisdictions have the sole discretion in determining a local project’s consistency with Connect SoCal.

CONNECT SOCIAL GOALS

The SCAG Regional Council fully adopted [Connect SoCal](#) in September 2020. Connect SoCal, also known as the 2020 – 2045 RTP/SCS, builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. The long-range visioning plan balances future mobility and housing needs with goals for the environment, the regional economy, social equity and environmental justice, and public health. The goals included in Connect SoCal may be pertinent to the proposed project. These goals are meant to provide guidance for considering the proposed project. Among the relevant goals of Connect SoCal are the following:

SCAG CONNECT SOCIAL GOALS	
Goal #1:	<i>Encourage regional economic prosperity and global competitiveness</i>
Goal #2:	<i>Improve mobility, accessibility, reliability and travel safety for people and goods</i>
Goal #3:	<i>Enhance the preservation, security, and resilience of the regional transportation system</i>
Goal #4:	<i>Increase person and goods movement and travel choices within the transportation system</i>
Goal #5:	<i>Reduce greenhouse gas emissions and improve air quality</i>
Goal #6:	<i>Support healthy and equitable communities</i>
Goal #7:	<i>Adapt to a changing climate and support an integrated regional development pattern and transportation network</i>
Goal #8:	<i>Leverage new transportation technologies and data-driven solutions that result in more efficient travel</i>
Goal #9:	<i>Encourage development of diverse housing types in areas that are supported by multiple transportation options</i>
Goal #10:	<i>Promote conservation of natural and agricultural lands and restoration of habitats</i>

For ease of review, we encourage the use of a side-by-side comparison of SCAG goals with discussions of the consistency, non-consistency or non-applicability of the goals and supportive analysis in a table format. Suggested format is as follows:

SCAG CONNECT SOCIAL GOALS	
Goal	Analysis
Goal #1: <i>Encourage regional economic prosperity and global competitiveness</i>	<i>Consistent: Statement as to why; Not-Consistent: Statement as to why; Or Not Applicable: Statement as to why; DEIR page number reference</i>
Goal #2: <i>Improve mobility, accessibility, reliability and travel safety for people and goods</i>	<i>Consistent: Statement as to why; Not-Consistent: Statement as to why; Or Not Applicable: Statement as to why; DEIR page number reference</i>
etc.	etc.

Connect SoCal Strategies

To achieve the goals of Connect SoCal, a wide range of land use and transportation strategies are included in the accompanying twenty (20) technical reports. Of particular note are multiple strategies included in Chapter 3 of Connect SoCal intended to support implementation of the regional Sustainable Communities Strategy (SCS) framed within the context of focusing growth near destinations and mobility options; promoting diverse housing choices; leveraging technology innovations; supporting implementation of sustainability policies; and promoting a Green Region. To view Connect SoCal and the accompanying technical reports, please visit the [Connect SoCal webpage](#). Connect SoCal builds upon the progress from previous RTP/SCS cycles and continues to focus on integrated, coordinated, and balanced planning for land use and transportation that helps the SCAG region strive towards a more sustainable region, while meeting statutory requirements pertinent to RTP/SCSs. These strategies within the regional context are provided as guidance for lead agencies such as local jurisdictions when the proposed project is under consideration.

SCAG staff would like to call your attention to resources available from SCAG’s [Regional Climate Adaptation Framework](#) including the [Southern California Climate Adaptation Planning Guide](#), [Communication and Outreach Toolkit](#), [Library of Model Policies](#), and [SB 379 Compliance Curriculum for Local Jurisdictions](#).

DEMOGRAPHICS AND GROWTH FORECASTS

A key, formative step in projecting future population, households, and employment through 2045 for Connect SoCal was the generation of a forecast of regional and county level growth in collaboration with expert demographers and economists on Southern California. From there, jurisdictional level forecasts were ground-truthed by subregions and local agencies, which helped SCAG identify opportunities and barriers to future development. This forecast helps the region understand, in a very general sense, where we are expected to grow, and allows SCAG to focus attention on areas that are experiencing change and may have increased transportation needs. After a year-long engagement effort with all 197 jurisdictions one-on-one, 82 percent of SCAG’s 197 jurisdictions provided feedback on the forecast of future growth for Connect SoCal. SCAG also sought feedback on potential sustainable growth strategies from a broad range of stakeholder groups – including local jurisdictions, county transportation commissions, other partner agencies, industry groups, community-based organizations, and the general public. Connect SoCal utilizes a bottom-up approach in that total projected growth for each jurisdiction reflects feedback received from jurisdiction staff, including city managers, community development/planning directors, and local staff. Growth at the neighborhood level (i.e., transportation analysis zone (TAZ) reflects entitled projects and adheres to current general and specific plan maximum densities as conveyed by jurisdictions (except in cases where entitled projects and development agreements exceed these capacities as calculated by SCAG). Neighborhood level growth projections also feature strategies that help to reduce greenhouse gas emissions (GHG) from automobiles and light trucks to achieve Southern California’s GHG reduction target, approved by the California Air Resources Board (CARB) in accordance

with state planning law. Connect SoCal’s Forecasted Development Pattern is utilized for long range modeling purposes and does not supersede actions taken by elected bodies on future development, including entitlements and development agreements. SCAG does not have the authority to implement the plan -- neither through decisions about what type of development is built where, nor what transportation projects are ultimately built, as Connect SoCal is adopted at the jurisdictional level. Achieving a sustained regional outcome depends upon informed and intentional local action. To access jurisdictional level growth estimates and forecasts for years 2016 and 2045, please refer to the [Connect SoCal Demographics and Growth Forecast Technical Report](#). The growth forecasts for the region and applicable jurisdictions are below.

	Adopted SCAG Region Wide Forecasts				Adopted City of Palmdale Forecasts			
	Year 2020	Year 2030	Year 2035	Year 2045	Year 2020	Year 2030	Year 2035	Year 2045
Population	19,517,731	20,821,171	21,443,006	22,503,899	162,262	179,535	188,171	207,047
Households	6,333,458	6,902,821	7,170,110	7,633,451	45,820	53,046	56,660	61,798
Employment	8,695,427	9,303,627	9,566,384	10,048,822	38,610	41,655	43,178	45,938

MITIGATION MEASURES

SCAG staff recommends that you review the [Final Program Environmental Impact Report](#) (Final PEIR) for Connect SoCal for guidance, as appropriate. SCAG’s Regional Council certified the PEIR and adopted the associated Findings of Fact and a Statement of Overriding Considerations (FOF/SOC) and Mitigation Monitoring and Reporting Program (MMRP) on May 7, 2020 and also adopted a PEIR Addendum and amended the MMRP on September 3, 2020 (please see the [PEIR webpage](#) and scroll to the bottom of the page for the PEIR Addendum). The PEIR includes a list of project-level performance standards-based mitigation measures that may be considered for adoption and implementation by lead, responsible, or trustee agencies in the region, as applicable and feasible. Project-level mitigation measures are within responsibility, authority, and/or jurisdiction of project-implementing agency or other public agency serving as lead agency under CEQA in subsequent project- and site- specific design, CEQA review, and decision-making processes, to meet the performance standards for each of the CEQA resource categories.

REGIONAL HOUSING NEEDS ALLOCATION

On March 4, 2021 SCAG’s Regional Council adopted the [6th cycle Final Regional Housing Needs Assessment \(RHNA\) Allocation Plan](#) which covers the planning period October 2021 through October 2029. The 6th cycle Final RHNA allocation for the applicable jurisdiction is below.

SCAG 6 th Cycle Final RHNA Allocation for City of Palmdale	
Very low income	1,777
Low income	935
Moderate income	1,004
Above moderate income	2,924
Total RHNA Allocation	6,640

Sixth cycle housing elements are due to the California Department of Housing and Community Development (HCD) by October 15, 2021. SCAG encourages jurisdictions to prepare the draft housing element in advance of the due date to ensure adequate time to address HCD comments and adopt a final housing element. Jurisdictions that do not have a compliant housing element may be ineligible for certain State funding and grant opportunities and may be at risk for legal action from stakeholders or HCD.

SCAG staff would like to call your attention to SCAG's [HELPR 2.0](#), a web-mapping tool developed by SCAG to help local jurisdictions and stakeholders understand local land use, site opportunities, and environmental sensitivities for aligning housing planning with the state Department of Housing and Community Development's (HCD) [6th cycle housing element requirements](#).

ENVIRONMENTAL JUSTICE

Per [Senate Bill 1000](#) (SB 1000), local jurisdictions in California with disadvantaged communities are required to develop an Environmental Justice (EJ) Element or consider EJ goals, policies, and objectives in their General Plans when updating two or more General Plan Elements. SCAG staff recommends that you review the [Environmental Justice Technical Report](#) and the updated [Environmental Justice Toolbox](#), which is a resource document to assist local jurisdictions in developing EJ-related goals and policies regarding solutions for EJ-related community issues.

Appendix B

CalEEMod Modeling Outputs

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Palmdale GPU - General Office -Construction Only**

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	171.28	1000sqft	3.93	171,275.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	2/23/2023	12/28/2022
tblConstructionPhase	PhaseEndDate	1/4/2023	12/26/2022
tblConstructionPhase	PhaseEndDate	2/16/2022	2/8/2022
tblConstructionPhase	PhaseEndDate	1/30/2023	3/3/2022
tblConstructionPhase	PhaseStartDate	1/31/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	2/17/2022	2/8/2022
tblConstructionPhase	PhaseStartDate	2/5/2022	1/28/2022
tblConstructionPhase	PhaseStartDate	1/5/2023	2/8/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	159.29	0.00
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblWater	IndoorWaterUseRate	30,442,236.36	0.00
tblWater	OutdoorWaterUseRate	18,658,144.86	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.8624	2.4231	2.5264	4.9600e-003	0.1048	0.1163	0.2211	0.0345	0.1092	0.1437	0.0000	438.1743	438.1743	0.0852	0.0107	443.4869
Maximum	0.8624	2.4231	2.5264	4.9600e-003	0.1048	0.1163	0.2211	0.0345	0.1092	0.1437	0.0000	438.1743	438.1743	0.0852	0.0107	443.4869

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.6623	0.3659	2.5294	4.6600e-003	0.0891	7.4200e-003	0.0966	0.0269	7.3200e-003	0.0343	0.0000	415.9099	415.9099	0.0826	0.0107	421.1561
Maximum	0.6623	0.3659	2.5294	4.6600e-003	0.0891	7.4200e-003	0.0966	0.0269	7.3200e-003	0.0343	0.0000	415.9099	415.9099	0.0826	0.0107	421.1561

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/28/2022	2/8/2022	5	8	
3	Building Construction	Building Construction	2/8/2022	12/26/2022	5	230	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Paving	Paving	2/8/2022	3/3/2022	5	18
5	Architectural Coating	Architectural Coating	12/5/2022	12/28/2022	5	18

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 8

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 256,913; Non-Residential Outdoor: 85,638; Striped Parking Area: 0
(Architectural Coating – sqft)**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Welders	1	8.00	46	0.45
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Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	55.00	28.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.0000e-005	0.0000	8.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	0.0264	0.2572	0.2059	3.9000e-004	8.0000e-005	0.0124	0.0125	1.0000e-005	0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	9.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0309	0.0309	0.0000	0.0000	0.0324
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.3000e-004	4.2900e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0003	1.0003	3.0000e-005	3.0000e-005	1.0099
Total	4.3000e-004	4.2000e-004	4.3100e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0312	1.0312	3.0000e-005	3.0000e-005	1.0423

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6200e-003	0.0200	0.2328	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	4.6200e-003	0.0200	0.2328	3.9000e-004	4.0000e-005	6.2000e-004	6.6000e-004	1.0000e-005	6.2000e-004	6.3000e-004	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	9.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0309	0.0309	0.0000	0.0000	0.0324
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.3000e-004	4.2900e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0003	1.0003	3.0000e-005	3.0000e-005	1.0099
Total	4.3000e-004	4.2000e-004	4.3100e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0312	1.0312	3.0000e-005	3.0000e-005	1.0423

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0283	0.0000	0.0283	0.0137	0.0000	0.0137	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7900e-003	0.0834	0.0611	1.2000e-004		3.7600e-003	3.7600e-003		3.4600e-003	3.4600e-003	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
Total	7.7900e-003	0.0834	0.0611	1.2000e-004	0.0283	3.7600e-003	0.0321	0.0137	3.4600e-003	0.0172	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.3000e-004	1.7200e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4001	0.4001	1.0000e-005	1.0000e-005	0.4040
Total	1.7000e-004	1.3000e-004	1.7200e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4001	0.4001	1.0000e-005	1.0000e-005	0.4040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0128	0.0000	0.0128	6.1600e-003	0.0000	6.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	6.2900e-003	0.0710	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
Total	1.4500e-003	6.2900e-003	0.0710	1.2000e-004	0.0128	1.9000e-004	0.0129	6.1600e-003	1.9000e-004	6.3500e-003	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.3000e-004	1.7200e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4001	0.4001	1.0000e-005	1.0000e-005	0.4040
Total	1.7000e-004	1.3000e-004	1.7200e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4001	0.4001	1.0000e-005	1.0000e-005	0.4040

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1962	1.7958	1.8818	3.1000e-003		0.0930	0.0930		0.0875	0.0875	0.0000	266.4840	266.4840	0.0638	0.0000	268.0801
Total	0.1962	1.7958	1.8818	3.1000e-003		0.0930	0.0930		0.0875	0.0875	0.0000	266.4840	266.4840	0.0638	0.0000	268.0801

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5300e-003	0.1730	0.0564	6.6000e-004	0.0215	1.5900e-003	0.0231	6.1900e-003	1.5200e-003	7.7200e-003	0.0000	64.7691	64.7691	2.1600e-003	9.3400e-003	67.6060
Worker	0.0180	0.0141	0.1811	4.6000e-004	0.0509	3.4000e-004	0.0513	0.0135	3.1000e-004	0.0138	0.0000	42.1809	42.1809	1.4000e-003	1.2400e-003	42.5852
Total	0.0245	0.1871	0.2375	1.1200e-003	0.0724	1.9300e-003	0.0743	0.0197	1.8300e-003	0.0216	0.0000	106.9500	106.9500	3.5600e-003	0.0106	110.1912

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0327	0.1415	1.8358	2.8000e-003		4.3500e-003	4.3500e-003		4.3500e-003	4.3500e-003	0.0000	244.8384	244.8384	0.0613	0.0000	246.3697
Total	0.0327	0.1415	1.8358	2.8000e-003		4.3500e-003	4.3500e-003		4.3500e-003	4.3500e-003	0.0000	244.8384	244.8384	0.0613	0.0000	246.3697

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5300e-003	0.1730	0.0564	6.6000e-004	0.0215	1.5900e-003	0.0231	6.1900e-003	1.5200e-003	7.7200e-003	0.0000	64.7691	64.7691	2.1600e-003	9.3400e-003	67.6060
Worker	0.0180	0.0141	0.1811	4.6000e-004	0.0509	3.4000e-004	0.0513	0.0135	3.1000e-004	0.0138	0.0000	42.1809	42.1809	1.4000e-003	1.2400e-003	42.5852
Total	0.0245	0.1871	0.2375	1.1200e-003	0.0724	1.9300e-003	0.0743	0.0197	1.8300e-003	0.0216	0.0000	106.9500	106.9500	3.5600e-003	0.0106	110.1912

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003		4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003		4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	4.0000e-004	5.1500e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.2004	1.2004	4.0000e-005	4.0000e-005	1.2119
Total	5.1000e-004	4.0000e-004	5.1500e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.2004	1.2004	4.0000e-005	4.0000e-005	1.2119

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9700e-003	8.5600e-003	0.1218	1.6000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	14.1196	14.1196	4.5700e-003	0.0000	14.2338
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.9700e-003	8.5600e-003	0.1218	1.6000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	14.1196	14.1196	4.5700e-003	0.0000	14.2338

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	4.0000e-004	5.1500e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.2004	1.2004	4.0000e-005	4.0000e-005	1.2119
Total	5.1000e-004	4.0000e-004	5.1500e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.2004	1.2004	4.0000e-005	4.0000e-005	1.2119

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5954					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	0.5972	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.2000e-004	2.8300e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6602	0.6602	2.0000e-005	2.0000e-005	0.6666
Total	2.8000e-004	2.2000e-004	2.8300e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6602	0.6602	2.0000e-005	2.0000e-005	0.6666

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5954					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	1.1600e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	0.5957	1.1600e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
-------------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
General Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
General Office Building	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
General Office Building	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
General Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
General Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Palmdale GPU - General Office -Construction Only**

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	171.28	1000sqft	3.93	171,275.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	2/23/2023	12/28/2022
tblConstructionPhase	PhaseEndDate	1/4/2023	12/26/2022
tblConstructionPhase	PhaseEndDate	2/16/2022	2/8/2022
tblConstructionPhase	PhaseEndDate	1/30/2023	3/3/2022
tblConstructionPhase	PhaseStartDate	1/31/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	2/17/2022	2/8/2022
tblConstructionPhase	PhaseStartDate	2/5/2022	1/28/2022
tblConstructionPhase	PhaseStartDate	1/5/2023	2/8/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	159.29	0.00
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblWater	IndoorWaterUseRate	30,442,236.36	0.00
tblWater	OutdoorWaterUseRate	18,658,144.86	0.00

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**2.0 Emissions Summary****2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	68.3146	47.6035	47.0238	0.0881	8.0116	2.2562	10.2678	3.6755	2.0948	5.7702	0.0000	8,540.3337	8,540.3337	2.1502	0.1074	8,626.0849
Maximum	68.3146	47.6035	47.0238	0.0881	8.0116	2.2562	10.2678	3.6755	2.0948	5.7702	0.0000	8,540.3337	8,540.3337	2.1502	0.1074	8,626.0849

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	66.7175	5.3659	50.4421	0.0845	4.1162	0.1342	4.2504	1.7919	0.1332	1.9251	0.0000	8,257.0815	8,257.0815	2.1175	0.1074	8,342.0154
Maximum	66.7175	5.3659	50.4421	0.0845	4.1162	0.1342	4.2504	1.7919	0.1332	1.9251	0.0000	8,257.0815	8,257.0815	2.1175	0.1074	8,342.0154

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Percent Reduction	2.34	88.73	-7.27	4.11	48.62	94.05	58.60	51.25	93.64	66.64	0.00	3.32	3.32	1.52	0.00	3.29
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2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.6200e-003	1.6000e-004	0.0175	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004	0.0000	0.0399

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.6200e-003	1.6000e-004	0.0175	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004	0.0000	0.0399

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/28/2022	2/8/2022	5	8	
3	Building Construction	Building Construction	2/8/2022	12/26/2022	5	230	
4	Paving	Paving	2/8/2022	3/3/2022	5	18	
5	Architectural Coating	Architectural Coating	12/5/2022	12/28/2022	5	18	

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 8****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 256,913; Non-Residential Outdoor: 85,638; Striped Parking Area: 0
(Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	55.00	28.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Use Alternative Fuel for Construction Equipment
- Use Cleaner Engines for Construction Equipment
- Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4300e-003	0.0000	8.4300e-003	1.2800e-003	0.0000	1.2800e-003			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	2.6392	25.7194	20.5941	0.0388	8.4300e-003	1.2427	1.2511	1.2800e-003	1.1553	1.1565		3,746.7812	3,746.7812	1.0524		3,773.0920

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	8.4000e-003	1.9600e-003	3.0000e-005	8.8000e-004	6.0000e-005	9.4000e-004	2.4000e-004	6.0000e-005	3.0000e-004		3.4039	3.4039	1.8000e-004	5.4000e-004	3.5693
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	0.0437	0.0381	0.4537	1.1600e-003	0.1241	8.7000e-004	0.1250	0.0329	8.0000e-004	0.0337		118.0848	118.0848	3.7600e-003	3.5300e-003	119.2317

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7900e-003	0.0000	3.7900e-003	5.7000e-004	0.0000	5.7000e-004			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	0.4623	2.0032	23.2798	0.0388	3.7900e-003	0.0616	0.0654	5.7000e-004	0.0616	0.0622	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	8.4000e-003	1.9600e-003	3.0000e-005	8.8000e-004	6.0000e-005	9.4000e-004	2.4000e-004	6.0000e-005	3.0000e-004		3.4039	3.4039	1.8000e-004	5.4000e-004	3.5693
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	0.0437	0.0381	0.4537	1.1600e-003	0.1241	8.7000e-004	0.1250	0.0329	8.0000e-004	0.0337		118.0848	118.0848	3.7600e-003	3.5300e-003	119.2317

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	7.0826	0.9409	8.0234	3.4247	0.8656	4.2903		2,872.0464	2,872.0464	0.9289		2,895.2684

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.3632	1.5737	17.7527	0.0297		0.0484	0.0484		0.0484	0.0484	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	0.3632	1.5737	17.7527	0.0297	3.1872	0.0484	3.2356	1.5411	0.0484	1.5896	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0572	1.4323	0.4833	5.7800e-003	0.1897	0.0138	0.2035	0.0546	0.0132	0.0678		620.7386	620.7386	0.0207	0.0894	647.9009
Worker	0.1595	0.1090	1.6563	4.1600e-003	0.4518	2.9600e-003	0.4548	0.1198	2.7300e-003	0.1226		420.4966	420.4966	0.0131	0.0110	424.0955
Total	0.2167	1.5413	2.1396	9.9400e-003	0.6415	0.0168	0.6583	0.1745	0.0159	0.1904		1,041.2352	1,041.2352	0.0339	0.1004	1,071.9964

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2840	1.2307	15.9634	0.0244		0.0379	0.0379		0.0379	0.0379	0.0000	2,346.8559	2,346.8559	0.5871		2,361.5338
Total	0.2840	1.2307	15.9634	0.0244		0.0379	0.0379		0.0379	0.0379	0.0000	2,346.8559	2,346.8559	0.5871		2,361.5338

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0572	1.4323	0.4833	5.7800e-003	0.1897	0.0138	0.2035	0.0546	0.0132	0.0678		620.7386	620.7386	0.0207	0.0894	647.9009
Worker	0.1595	0.1090	1.6563	4.1600e-003	0.4518	2.9600e-003	0.4548	0.1198	2.7300e-003	0.1226		420.4966	420.4966	0.0131	0.0110	424.0955
Total	0.2167	1.5413	2.1396	9.9400e-003	0.6415	0.0168	0.6583	0.1745	0.0159	0.1904		1,041.2352	1,041.2352	0.0339	0.1004	1,071.9964

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9765	9.5221	12.1940	0.0189		0.4877	0.4877		0.4504	0.4504		1,805.1297	1,805.1297	0.5672		1,819.3091
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9765	9.5221	12.1940	0.0189		0.4877	0.4877		0.4504	0.4504		1,805.1297	1,805.1297	0.5672		1,819.3091

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165
Total	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2194	0.9509	13.5323	0.0179		0.0293	0.0293		0.0293	0.0293	0.0000	1,729.3552	1,729.3552	0.5593		1,743.3379
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2194	0.9509	13.5323	0.0179		0.0293	0.0293		0.0293	0.0293	0.0000	1,729.3552	1,729.3552	0.5593		1,743.3379

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165
Total	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	66.1552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	66.3598	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0319	0.0218	0.3313	8.3000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		84.0993	84.0993	2.6200e-003	2.2000e-003	84.8191
Total	0.0319	0.0218	0.3313	8.3000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		84.0993	84.0993	2.6200e-003	2.2000e-003	84.8191

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	66.1552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	66.1849	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0319	0.0218	0.3313	8.3000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		84.0993	84.0993	2.6200e-003	2.2000e-003	84.8191
Total	0.0319	0.0218	0.3313	8.3000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		84.0993	84.0993	2.6200e-003	2.2000e-003	84.8191

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Unmitigated	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Total	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Total	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Palmdale GPU - General Office -Construction Only**

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	171.28	1000sqft	3.93	171,275.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	2/23/2023	12/28/2022
tblConstructionPhase	PhaseEndDate	1/4/2023	12/26/2022
tblConstructionPhase	PhaseEndDate	2/16/2022	2/8/2022
tblConstructionPhase	PhaseEndDate	1/30/2023	3/3/2022
tblConstructionPhase	PhaseStartDate	1/31/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	2/17/2022	2/8/2022
tblConstructionPhase	PhaseStartDate	2/5/2022	1/28/2022
tblConstructionPhase	PhaseStartDate	1/5/2023	2/8/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	159.29	0.00
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblWater	IndoorWaterUseRate	30,442,236.36	0.00
tblWater	OutdoorWaterUseRate	18,658,144.86	0.00

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	68.3246	47.6811	46.8481	0.0877	8.0116	2.2562	10.2678	3.6755	2.0948	5.7703	0.0000	8,504.3791	8,504.3791	2.1508	0.1087	8,590.5437
Maximum	68.3246	47.6811	46.8481	0.0877	8.0116	2.2562	10.2678	3.6755	2.0948	5.7703	0.0000	8,504.3791	8,504.3791	2.1508	0.1087	8,590.5437

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	66.7276	5.4436	50.2663	0.0841	4.1162	0.1343	4.2504	1.7919	0.1333	1.9251	0.0000	8,221.1269	8,221.1269	2.1181	0.1087	8,306.4742
Maximum	66.7276	5.4436	50.2663	0.0841	4.1162	0.1343	4.2504	1.7919	0.1333	1.9251	0.0000	8,221.1269	8,221.1269	2.1181	0.1087	8,306.4742

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Percent Reduction	2.34	88.58	-7.30	4.13	48.62	94.05	58.60	51.25	93.64	66.64	0.00	3.33	3.33	1.52	0.00	3.31
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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.6200e-003	1.6000e-004	0.0175	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004	0.0000	0.0399

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.6200e-003	1.6000e-004	0.0175	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004	0.0000	0.0399

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/28/2022	2/8/2022	5	8	
3	Building Construction	Building Construction	2/8/2022	12/26/2022	5	230	
4	Paving	Paving	2/8/2022	3/3/2022	5	18	
5	Architectural Coating	Architectural Coating	12/5/2022	12/28/2022	5	18	

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 8****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 256,913; Non-Residential Outdoor: 85,638; Striped Parking Area: 0
(Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	55.00	28.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Use Alternative Fuel for Construction Equipment
- Use Cleaner Engines for Construction Equipment
- Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4300e-003	0.0000	8.4300e-003	1.2800e-003	0.0000	1.2800e-003			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	2.6392	25.7194	20.5941	0.0388	8.4300e-003	1.2427	1.2511	1.2800e-003	1.1553	1.1565		3,746.7812	3,746.7812	1.0524		3,773.0920

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	8.7400e-003	1.9900e-003	3.0000e-005	8.8000e-004	6.0000e-005	9.4000e-004	2.4000e-004	6.0000e-005	3.0000e-004		3.4049	3.4049	1.8000e-004	5.4000e-004	3.5704
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	0.0462	0.0416	0.4217	1.1000e-003	0.1241	8.7000e-004	0.1250	0.0329	8.0000e-004	0.0337		112.0565	112.0565	3.8600e-003	3.7400e-003	113.2670

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7900e-003	0.0000	3.7900e-003	5.7000e-004	0.0000	5.7000e-004			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	0.4623	2.0032	23.2798	0.0388	3.7900e-003	0.0616	0.0654	5.7000e-004	0.0616	0.0622	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	8.7400e-003	1.9900e-003	3.0000e-005	8.8000e-004	6.0000e-005	9.4000e-004	2.4000e-004	6.0000e-005	3.0000e-004		3.4049	3.4049	1.8000e-004	5.4000e-004	3.5704
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	0.0462	0.0416	0.4217	1.1000e-003	0.1241	8.7000e-004	0.1250	0.0329	8.0000e-004	0.0337		112.0565	112.0565	3.8600e-003	3.7400e-003	113.2670

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	7.0826	0.9409	8.0234	3.4247	0.8656	4.2903		2,872.0464	2,872.0464	0.9289		2,895.2684

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.3632	1.5737	17.7527	0.0297		0.0484	0.0484		0.0484	0.0484	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	0.3632	1.5737	17.7527	0.0297	3.1872	0.0484	3.2356	1.5411	0.0484	1.5896	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0566	1.4912	0.4994	5.7800e-003	0.1897	0.0139	0.2036	0.0546	0.0133	0.0679		620.9598	620.9598	0.0207	0.0895	648.1542
Worker	0.1684	0.1204	1.5391	3.9400e-003	0.4518	2.9600e-003	0.4548	0.1198	2.7300e-003	0.1226		398.3892	398.3892	0.0135	0.0117	402.2210
Total	0.2249	1.6116	2.0385	9.7200e-003	0.6415	0.0168	0.6583	0.1745	0.0160	0.1904		1,019.3491	1,019.3491	0.0342	0.1013	1,050.3752

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2840	1.2307	15.9634	0.0244		0.0379	0.0379		0.0379	0.0379	0.0000	2,346.8559	2,346.8559	0.5871		2,361.5338
Total	0.2840	1.2307	15.9634	0.0244		0.0379	0.0379		0.0379	0.0379	0.0000	2,346.8559	2,346.8559	0.5871		2,361.5338

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0566	1.4912	0.4994	5.7800e-003	0.1897	0.0139	0.2036	0.0546	0.0133	0.0679		620.9598	620.9598	0.0207	0.0895	648.1542
Worker	0.1684	0.1204	1.5391	3.9400e-003	0.4518	2.9600e-003	0.4548	0.1198	2.7300e-003	0.1226		398.3892	398.3892	0.0135	0.0117	402.2210
Total	0.2249	1.6116	2.0385	9.7200e-003	0.6415	0.0168	0.6583	0.1745	0.0160	0.1904		1,019.3491	1,019.3491	0.0342	0.1013	1,050.3752

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9765	9.5221	12.1940	0.0189		0.4877	0.4877		0.4504	0.4504		1,805.1297	1,805.1297	0.5672		1,819.3091
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9765	9.5221	12.1940	0.0189		0.4877	0.4877		0.4504	0.4504		1,805.1297	1,805.1297	0.5672		1,819.3091

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622
Total	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2194	0.9509	13.5323	0.0179		0.0293	0.0293		0.0293	0.0293	0.0000	1,729.3552	1,729.3552	0.5593		1,743.3379
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2194	0.9509	13.5323	0.0179		0.0293	0.0293		0.0293	0.0293	0.0000	1,729.3552	1,729.3552	0.5593		1,743.3379

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622
Total	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	66.1552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	66.3598	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0337	0.0241	0.3078	7.9000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		79.6779	79.6779	2.7000e-003	2.3500e-003	80.4442
Total	0.0337	0.0241	0.3078	7.9000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		79.6779	79.6779	2.7000e-003	2.3500e-003	80.4442

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	66.1552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	66.1849	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0337	0.0241	0.3078	7.9000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		79.6779	79.6779	2.7000e-003	2.3500e-003	80.4442
Total	0.0337	0.0241	0.3078	7.9000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		79.6779	79.6779	2.7000e-003	2.3500e-003	80.4442

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
-------------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Unmitigated	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Total	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Total	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - Government Office - Construction**

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1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	7.30	1000sqft	0.17	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQM regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	6/22/2022	6/8/2022
tblConstructionPhase	PhaseEndDate	6/8/2022	6/7/2022
tblConstructionPhase	PhaseEndDate	1/19/2022	1/18/2022
tblConstructionPhase	PhaseEndDate	6/15/2022	1/25/2022
tblConstructionPhase	PhaseStartDate	6/16/2022	6/2/2022
tblConstructionPhase	PhaseStartDate	1/20/2022	1/19/2022
tblConstructionPhase	PhaseStartDate	1/18/2022	1/15/2022

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseStartDate	6/9/2022	1/19/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	6.79	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblWater	IndoorWaterUseRate	1,450,215.71	0.00
tblWater	OutdoorWaterUseRate	888,841.88	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0672	0.4197	0.4304	7.1000e-004	0.0111	0.0218	0.0329	3.7100e-003	0.0201	0.0239	0.0000	62.8937	62.8937	0.0184	3.5000e-004	63.4574
Maximum	0.0672	0.4197	0.4304	7.1000e-004	0.0111	0.0218	0.0329	3.7100e-003	0.0201	0.0239	0.0000	62.8937	62.8937	0.0184	3.5000e-004	63.4574

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0499	0.2275	0.4483	7.1000e-004	6.2400e-003	0.0115	0.0178	2.0100e-003	0.0106	0.0126	0.0000	62.5500	62.5500	0.0184	3.5000e-004	63.1127
Maximum	0.0499	0.2275	0.4483	7.1000e-004	6.2400e-003	0.0115	0.0178	2.0100e-003	0.0106	0.0126	0.0000	62.5500	62.5500	0.0184	3.5000e-004	63.1127

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	25.70	45.79	-4.16	0.00	43.83	47.20	46.07	45.82	47.22	47.02	0.00	0.55	0.55	0.22	0.00	0.54

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	0.2742	0.1564
2	4-1-2022	6-30-2022	0.2182	0.1249
		Highest	0.2742	0.1564

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/14/2022	5	10	
2	Grading	Grading	1/15/2022	1/18/2022	5	2	
3	Building Construction	Building Construction	1/19/2022	6/7/2022	5	100	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	1/19/2022	1/25/2022	5	5
5	Architectural Coating	Architectural Coating	6/2/2022	6/8/2022	5	5

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 10,950; Non-Residential Outdoor: 3,650; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	33.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.5400e-003	0.0000	3.5400e-003	5.4000e-004	0.0000	5.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5500e-003	0.0321	0.0374	6.0000e-005		1.6900e-003	1.6900e-003		1.6100e-003	1.6100e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	3.5500e-003	0.0321	0.0374	6.0000e-005	3.5400e-003	1.6900e-003	5.2300e-003	5.4000e-004	1.6100e-003	2.1500e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	2.9200e-003	6.5000e-004	1.0000e-005	2.8000e-004	2.0000e-005	3.0000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.0192	1.0192	5.0000e-005	1.6000e-004	1.0687
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.1000e-004	1.4300e-003	0.0000	4.0000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3356	0.3356	1.0000e-005	1.0000e-005	0.3388
Total	2.2000e-004	3.0300e-003	2.0800e-003	1.0000e-005	6.8000e-004	2.0000e-005	7.1000e-004	1.9000e-004	2.0000e-005	2.1000e-004	0.0000	1.3548	1.3548	6.0000e-005	1.7000e-004	1.4075

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5900e-003	0.0000	1.5900e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0700e-003	0.0194	0.0383	6.0000e-005		9.8000e-004	9.8000e-004		9.0000e-004	9.0000e-004	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	2.0700e-003	0.0194	0.0383	6.0000e-005	1.5900e-003	9.8000e-004	2.5700e-003	2.4000e-004	9.0000e-004	1.1400e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	2.9200e-003	6.5000e-004	1.0000e-005	2.8000e-004	2.0000e-005	3.0000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.0192	1.0192	5.0000e-005	1.6000e-004	1.0687
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.1000e-004	1.4300e-003	0.0000	4.0000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3356	0.3356	1.0000e-005	1.0000e-005	0.3388
Total	2.2000e-004	3.0300e-003	2.0800e-003	1.0000e-005	6.8000e-004	2.0000e-005	7.1000e-004	1.9000e-004	2.0000e-005	2.1000e-004	0.0000	1.3548	1.3548	6.0000e-005	1.7000e-004	1.4075

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3100e-003	0.0000	5.3100e-003	2.5700e-003	0.0000	2.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0800e-003	0.0120	5.9400e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482
Total	1.0800e-003	0.0120	5.9400e-003	1.0000e-005	5.3100e-003	5.2000e-004	5.8300e-003	2.5700e-003	4.8000e-004	3.0500e-003	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0537	0.0537	0.0000	0.0000	0.0542
Total	2.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0537	0.0537	0.0000	0.0000	0.0542

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	1.1600e-003	0.0000	1.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	8.3300e-003	6.8800e-003	1.0000e-005		4.0000e-004	4.0000e-004		3.7000e-004	3.7000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482
Total	8.3000e-004	8.3300e-003	6.8800e-003	1.0000e-005	2.3900e-003	4.0000e-004	2.7900e-003	1.1600e-003	3.7000e-004	1.5300e-003	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0537	0.0537	0.0000	0.0000	0.0542
Total	2.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0537	0.0537	0.0000	0.0000	0.0542

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0343	0.3513	0.3576	5.7000e-004		0.0186	0.0186		0.0171	0.0171	0.0000	50.0739	50.0739	0.0162	0.0000	50.4787
Total	0.0343	0.3513	0.3576	5.7000e-004		0.0186	0.0186		0.0171	0.0171	0.0000	50.0739	50.0739	0.0162	0.0000	50.4787

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	2.6900e-003	8.8000e-004	1.0000e-005	3.3000e-004	2.0000e-005	3.6000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.0057	1.0057	3.0000e-005	1.5000e-004	1.0498
Worker	2.8000e-004	2.2000e-004	2.8700e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.1000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6712	0.6712	2.0000e-005	2.0000e-005	0.6776
Total	3.8000e-004	2.9100e-003	3.7500e-003	2.0000e-005	1.1400e-003	3.0000e-005	1.1700e-003	3.1000e-004	2.0000e-005	3.4000e-004	0.0000	1.6769	1.6769	5.0000e-005	1.7000e-004	1.7274

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0197	0.1814	0.3759	5.7000e-004		9.4400e-003	9.4400e-003		8.7200e-003	8.7200e-003	0.0000	50.0738	50.0738	0.0162	0.0000	50.4787
Total	0.0197	0.1814	0.3759	5.7000e-004		9.4400e-003	9.4400e-003		8.7200e-003	8.7200e-003	0.0000	50.0738	50.0738	0.0162	0.0000	50.4787

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	2.6900e-003	8.8000e-004	1.0000e-005	3.3000e-004	2.0000e-005	3.6000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.0057	1.0057	3.0000e-005	1.5000e-004	1.0498
Worker	2.8000e-004	2.2000e-004	2.8700e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.1000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6712	0.6712	2.0000e-005	2.0000e-005	0.6776
Total	3.8000e-004	2.9100e-003	3.7500e-003	2.0000e-005	1.1400e-003	3.0000e-005	1.1700e-003	3.1000e-004	2.0000e-005	3.4000e-004	0.0000	1.6769	1.6769	5.0000e-005	1.7000e-004	1.7274

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6200e-003	0.0148	0.0176	3.0000e-005		7.4000e-004	7.4000e-004		6.9000e-004	6.9000e-004	0.0000	2.3492	2.3492	6.8000e-004	0.0000	2.3663
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.6200e-003	0.0148	0.0176	3.0000e-005		7.4000e-004	7.4000e-004		6.9000e-004	6.9000e-004	0.0000	2.3492	2.3492	6.8000e-004	0.0000	2.3663

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.0000e-004	1.2900e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3020	0.3020	1.0000e-005	1.0000e-005	0.3049
Total	1.3000e-004	1.0000e-004	1.2900e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3020	0.3020	1.0000e-005	1.0000e-005	0.3049

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1800e-003	0.0120	0.0153	2.0000e-005		6.3000e-004	6.3000e-004		5.8000e-004	5.8000e-004	0.0000	2.0055	2.0055	6.5000e-004	0.0000	2.0217
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.1800e-003	0.0120	0.0153	2.0000e-005		6.3000e-004	6.3000e-004		5.8000e-004	5.8000e-004	0.0000	2.0055	2.0055	6.5000e-004	0.0000	2.0217

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.0000e-004	1.2900e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3020	0.3020	1.0000e-005	1.0000e-005	0.3049
Total	1.3000e-004	1.0000e-004	1.2900e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3020	0.3020	1.0000e-005	1.0000e-005	0.3049

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0254					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	0.0259	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0254					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-005	3.2000e-004	4.5800e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	0.0255	3.2000e-004	4.5800e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Government Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Government Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Government Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Government Office Building	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated**

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Government Office Building	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Government Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Government Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - Government Office - Construction**

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	7.30	1000sqft	0.17	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	6/22/2022	6/8/2022
tblConstructionPhase	PhaseEndDate	6/8/2022	6/7/2022
tblConstructionPhase	PhaseEndDate	1/19/2022	1/18/2022
tblConstructionPhase	PhaseEndDate	6/15/2022	1/25/2022
tblConstructionPhase	PhaseStartDate	6/16/2022	6/2/2022
tblConstructionPhase	PhaseStartDate	1/20/2022	1/19/2022
tblConstructionPhase	PhaseStartDate	1/18/2022	1/15/2022

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseStartDate	6/9/2022	1/19/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	6.79	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblWater	IndoorWaterUseRate	1,450,215.71	0.00
tblWater	OutdoorWaterUseRate	888,841.88	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	11.0493	13.0340	14.8079	0.0244	5.3777	0.6696	5.8954	2.5860	0.6195	3.0623	0.0000	2,315.8301	2,315.8301	0.6643	0.0376	2,334.5779
Maximum	11.0493	13.0340	14.8079	0.0244	5.3777	0.6696	5.8954	2.5860	0.6195	3.0623	0.0000	2,315.8301	2,315.8301	0.6643	0.0376	2,334.5779

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	10.5813	8.5310	14.2477	0.0223	2.4561	0.4434	2.8565	1.1733	0.4087	1.5423	0.0000	2,164.2812	2,164.2812	0.6485	0.0376	2,182.6357
Maximum	10.5813	8.5310	14.2477	0.0223	2.4561	0.4434	2.8565	1.1733	0.4087	1.5423	0.0000	2,164.2812	2,164.2812	0.6485	0.0376	2,182.6357

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	4.24	34.55	3.78	8.77	54.33	33.77	51.55	54.63	34.03	49.63	0.00	6.54	6.54	2.37	0.00	6.51

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Total	7.0000e-005	1.0000e-005	7.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.6000e-003	1.6000e-003	0.0000	0.0000	1.7000e-003
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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	7.0000e-005	1.0000e-005	7.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000	0.0000	1.7000e-003

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/14/2022	5	10	
2	Grading	Grading	1/15/2022	1/18/2022	5	2	
3	Building Construction	Building Construction	1/19/2022	6/7/2022	5	100	
4	Paving	Paving	1/19/2022	1/25/2022	5	5	
5	Architectural Coating	Architectural Coating	6/2/2022	6/8/2022	5	5	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 1.5****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 10,950; Non-Residential Outdoor: 3,650; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	lb/day										lb/day					
Fugitive Dust					0.7087	0.0000	0.7087	0.1073	0.0000	0.1073			0.0000			0.0000
Off-Road	0.7094	6.4138	7.4693	0.0120		0.3375	0.3375		0.3225	0.3225		1,147.9025	1,147.9025	0.2119		1,153.2001
Total	0.7094	6.4138	7.4693	0.0120	0.7087	0.3375	1.0463	0.1073	0.3225	0.4299		1,147.9025	1,147.9025	0.2119		1,153.2001

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0154	0.5542	0.1292	2.0500e-003	0.0578	4.1200e-003	0.0619	0.0158	3.9400e-003	0.0198		224.6560	224.6560	0.0119	0.0356	235.5763
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	0.0444	0.5741	0.4308	2.8100e-003	0.1399	4.6600e-003	0.1446	0.0376	4.4400e-003	0.0421		301.6045	301.6045	0.0143	0.0376	313.1792

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3189	0.0000	0.3189	0.0483	0.0000	0.0483			0.0000			0.0000
Off-Road	0.4143	3.8838	7.6633	0.0120		0.1957	0.1957		0.1807	0.1807	0.0000	1,147.9025	1,147.9025	0.2119		1,153.2001
Total	0.4143	3.8838	7.6633	0.0120	0.3189	0.1957	0.5146	0.0483	0.1807	0.2290	0.0000	1,147.9025	1,147.9025	0.2119		1,153.2001

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0154	0.5542	0.1292	2.0500e-003	0.0578	4.1200e-003	0.0619	0.0158	3.9400e-003	0.0198		224.6560	224.6560	0.0119	0.0356	235.5763
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	0.0444	0.5741	0.4308	2.8100e-003	0.1399	4.6600e-003	0.1446	0.0376	4.4400e-003	0.0421		301.6045	301.6045	0.0143	0.0376	313.1792

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.3119	0.0000	5.3119	2.5686	0.0000	2.5686			0.0000			0.0000
Off-Road	1.0832	12.0046	5.9360	0.0141		0.5173	0.5173		0.4759	0.4759		1,364.8198	1,364.8198	0.4414		1,375.8551
Total	1.0832	12.0046	5.9360	0.0141	5.3119	0.5173	5.8292	2.5686	0.4759	3.0445		1,364.8198	1,364.8198	0.4414		1,375.8551

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0232	0.0159	0.2413	6.1000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		61.5588	61.5588	1.9100e-003	1.6000e-003	62.0823
Total	0.0232	0.0159	0.2413	6.1000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		61.5588	61.5588	1.9100e-003	1.6000e-003	62.0823

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3904	0.0000	2.3904	1.1559	0.0000	1.1559			0.0000			0.0000
Off-Road	0.8328	8.3251	6.8759	0.0141		0.4000	0.4000		0.3686	0.3686	0.0000	1,364.8198	1,364.8198	0.4414		1,375.8551
Total	0.8328	8.3251	6.8759	0.0141	2.3904	0.4000	2.7904	1.1559	0.3686	1.5245	0.0000	1,364.8198	1,364.8198	0.4414		1,375.8551

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0232	0.0159	0.2413	6.1000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		61.5588	61.5588	1.9100e-003	1.6000e-003	62.0823
Total	0.0232	0.0159	0.2413	6.1000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		61.5588	61.5588	1.9100e-003	1.6000e-003	62.0823

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0512	0.0173	2.1000e-004	6.7800e-003	4.9000e-004	7.2700e-003	1.9500e-003	4.7000e-004	2.4200e-003		22.1692	22.1692	7.4000e-004	3.1900e-003	23.1393
Worker	5.8000e-003	3.9600e-003	0.0603	1.5000e-004	0.0164	1.1000e-004	0.0165	4.3600e-003	1.0000e-004	4.4600e-003		15.3897	15.3897	4.8000e-004	4.0000e-004	15.5206
Total	7.8400e-003	0.0551	0.0776	3.6000e-004	0.0232	6.0000e-004	0.0238	6.3100e-003	5.7000e-004	6.8800e-003		37.5589	37.5589	1.2200e-003	3.5900e-003	38.6599

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3931	3.6273	7.5179	0.0114		0.1887	0.1887		0.1743	0.1743	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	0.3931	3.6273	7.5179	0.0114		0.1887	0.1887		0.1743	0.1743	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0512	0.0173	2.1000e-004	6.7800e-003	4.9000e-004	7.2700e-003	1.9500e-003	4.7000e-004	2.4200e-003		22.1692	22.1692	7.4000e-004	3.1900e-003	23.1393
Worker	5.8000e-003	3.9600e-003	0.0603	1.5000e-004	0.0164	1.1000e-004	0.0165	4.3600e-003	1.0000e-004	4.4600e-003		15.3897	15.3897	4.8000e-004	4.0000e-004	15.5206
Total	7.8400e-003	0.0551	0.0776	3.6000e-004	0.0232	6.0000e-004	0.0238	6.3100e-003	5.7000e-004	6.8800e-003		37.5589	37.5589	1.2200e-003	3.5900e-003	38.6599

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.8246	1,035.8246	0.3017		1,043.3677

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0522	0.0357	0.5428	1.3600e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		138.5073	138.5073	4.2900e-003	3.5900e-003	139.6851
Total	0.0522	0.0357	0.5428	1.3600e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		138.5073	138.5073	4.2900e-003	3.5900e-003	139.6851

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4707	4.8129	6.1094	9.1300e-003		0.2531	0.2531		0.2329	0.2329	0.0000	884.2756	884.2756	0.2860		891.4254
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.4707	4.8129	6.1094	9.1300e-003		0.2531	0.2531		0.2329	0.2329	0.0000	884.2756	884.2756	0.2860		891.4254

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0522	0.0357	0.5428	1.3600e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		138.5073	138.5073	4.2900e-003	3.5900e-003	139.6851
Total	0.0522	0.0357	0.5428	1.3600e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		138.5073	138.5073	4.2900e-003	3.5900e-003	139.6851

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.1507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	10.3552	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.1507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	10.1804	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Government Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Government Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Unmitigated	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Total	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Total	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - Government Office - Construction**

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	7.30	1000sqft	0.17	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	6/22/2022	6/8/2022
tblConstructionPhase	PhaseEndDate	6/8/2022	6/7/2022
tblConstructionPhase	PhaseEndDate	1/19/2022	1/18/2022
tblConstructionPhase	PhaseEndDate	6/15/2022	1/25/2022
tblConstructionPhase	PhaseStartDate	6/16/2022	6/2/2022
tblConstructionPhase	PhaseStartDate	1/20/2022	1/19/2022
tblConstructionPhase	PhaseStartDate	1/18/2022	1/15/2022

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseStartDate	6/9/2022	1/19/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	6.79	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblWater	IndoorWaterUseRate	1,450,215.71	0.00
tblWater	OutdoorWaterUseRate	888,841.88	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	11.0496	13.0402	14.7657	0.0243	5.3777	0.6696	5.8954	2.5860	0.6195	3.0623	0.0000	2,307.7467	2,307.7467	0.6644	0.0378	2,326.5804
Maximum	11.0496	13.0402	14.7657	0.0243	5.3777	0.6696	5.8954	2.5860	0.6195	3.0623	0.0000	2,307.7467	2,307.7467	0.6644	0.0378	2,326.5804

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	10.5816	8.5372	14.2056	0.0222	2.4561	0.4435	2.8565	1.1733	0.4087	1.5423	0.0000	2,156.1978	2,156.1978	0.6487	0.0378	2,174.6381
Maximum	10.5816	8.5372	14.2056	0.0222	2.4561	0.4435	2.8565	1.1733	0.4087	1.5423	0.0000	2,156.1978	2,156.1978	0.6487	0.0378	2,174.6381

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	4.24	34.53	3.79	8.80	54.33	33.77	51.55	54.63	34.03	49.63	0.00	6.57	6.57	2.37	0.00	6.53

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Total	7.0000e-005	1.0000e-005	7.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.6000e-003	1.6000e-003	0.0000	0.0000	1.7000e-003
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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	7.0000e-005	1.0000e-005	7.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000	0.0000	1.7000e-003

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/14/2022	5	10	
2	Grading	Grading	1/15/2022	1/18/2022	5	2	
3	Building Construction	Building Construction	1/19/2022	6/7/2022	5	100	
4	Paving	Paving	1/19/2022	1/25/2022	5	5	
5	Architectural Coating	Architectural Coating	6/2/2022	6/8/2022	5	5	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 1.5****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 10,950; Non-Residential Outdoor: 3,650; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	lb/day										lb/day					
Fugitive Dust					0.7087	0.0000	0.7087	0.1073	0.0000	0.1073			0.0000			0.0000
Off-Road	0.7094	6.4138	7.4693	0.0120		0.3375	0.3375		0.3225	0.3225		1,147.9025	1,147.9025	0.2119		1,153.2001
Total	0.7094	6.4138	7.4693	0.0120	0.7087	0.3375	1.0463	0.1073	0.3225	0.4299		1,147.9025	1,147.9025	0.2119		1,153.2001

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0150	0.5767	0.1315	2.0500e-003	0.0578	4.1300e-003	0.0619	0.0158	3.9500e-003	0.0198		224.7218	224.7218	0.0119	0.0357	235.6452
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	0.0456	0.5986	0.4117	2.7700e-003	0.1399	4.6700e-003	0.1446	0.0376	4.4500e-003	0.0421		297.6247	297.6247	0.0144	0.0378	309.2447

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3189	0.0000	0.3189	0.0483	0.0000	0.0483			0.0000			0.0000
Off-Road	0.4143	3.8838	7.6633	0.0120		0.1957	0.1957		0.1807	0.1807	0.0000	1,147.9025	1,147.9025	0.2119		1,153.2001
Total	0.4143	3.8838	7.6633	0.0120	0.3189	0.1957	0.5146	0.0483	0.1807	0.2290	0.0000	1,147.9025	1,147.9025	0.2119		1,153.2001

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0150	0.5767	0.1315	2.0500e-003	0.0578	4.1300e-003	0.0619	0.0158	3.9500e-003	0.0198		224.7218	224.7218	0.0119	0.0357	235.6452
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	0.0456	0.5986	0.4117	2.7700e-003	0.1399	4.6700e-003	0.1446	0.0376	4.4500e-003	0.0421		297.6247	297.6247	0.0144	0.0378	309.2447

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.3119	0.0000	5.3119	2.5686	0.0000	2.5686			0.0000			0.0000
Off-Road	1.0832	12.0046	5.9360	0.0141		0.5173	0.5173		0.4759	0.4759		1,364.8198	1,364.8198	0.4414		1,375.8551
Total	1.0832	12.0046	5.9360	0.0141	5.3119	0.5173	5.8292	2.5686	0.4759	3.0445		1,364.8198	1,364.8198	0.4414		1,375.8551

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0245	0.0175	0.2242	5.7000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		58.3223	58.3223	1.9600e-003	1.7100e-003	58.8796
Total	0.0245	0.0175	0.2242	5.7000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		58.3223	58.3223	1.9600e-003	1.7100e-003	58.8796

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3904	0.0000	2.3904	1.1559	0.0000	1.1559			0.0000			0.0000
Off-Road	0.8328	8.3251	6.8759	0.0141		0.4000	0.4000		0.3686	0.3686	0.0000	1,364.8198	1,364.8198	0.4414		1,375.8551
Total	0.8328	8.3251	6.8759	0.0141	2.3904	0.4000	2.7904	1.1559	0.3686	1.5245	0.0000	1,364.8198	1,364.8198	0.4414		1,375.8551

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0245	0.0175	0.2242	5.7000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		58.3223	58.3223	1.9600e-003	1.7100e-003	58.8796
Total	0.0245	0.0175	0.2242	5.7000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		58.3223	58.3223	1.9600e-003	1.7100e-003	58.8796

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0200e-003	0.0533	0.0178	2.1000e-004	6.7800e-003	4.9000e-004	7.2700e-003	1.9500e-003	4.7000e-004	2.4200e-003		22.1771	22.1771	7.4000e-004	3.2000e-003	23.1484
Worker	6.1200e-003	4.3800e-003	0.0560	1.4000e-004	0.0164	1.1000e-004	0.0165	4.3600e-003	1.0000e-004	4.4600e-003		14.5806	14.5806	4.9000e-004	4.3000e-004	14.7199
Total	8.1400e-003	0.0576	0.0739	3.5000e-004	0.0232	6.0000e-004	0.0238	6.3100e-003	5.7000e-004	6.8800e-003		36.7577	36.7577	1.2300e-003	3.6300e-003	37.8683

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3931	3.6273	7.5179	0.0114		0.1887	0.1887		0.1743	0.1743	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	0.3931	3.6273	7.5179	0.0114		0.1887	0.1887		0.1743	0.1743	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0200e-003	0.0533	0.0178	2.1000e-004	6.7800e-003	4.9000e-004	7.2700e-003	1.9500e-003	4.7000e-004	2.4200e-003		22.1771	22.1771	7.4000e-004	3.2000e-003	23.1484
Worker	6.1200e-003	4.3800e-003	0.0560	1.4000e-004	0.0164	1.1000e-004	0.0165	4.3600e-003	1.0000e-004	4.4600e-003		14.5806	14.5806	4.9000e-004	4.3000e-004	14.7199
Total	8.1400e-003	0.0576	0.0739	3.5000e-004	0.0232	6.0000e-004	0.0238	6.3100e-003	5.7000e-004	6.8800e-003		36.7577	36.7577	1.2300e-003	3.6300e-003	37.8683

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.8246	1,035.8246	0.3017		1,043.3677

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0551	0.0394	0.5044	1.2900e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		131.2251	131.2251	4.4100e-003	3.8400e-003	132.4792
Total	0.0551	0.0394	0.5044	1.2900e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		131.2251	131.2251	4.4100e-003	3.8400e-003	132.4792

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4707	4.8129	6.1094	9.1300e-003		0.2531	0.2531		0.2329	0.2329	0.0000	884.2756	884.2756	0.2860		891.4254
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.4707	4.8129	6.1094	9.1300e-003		0.2531	0.2531		0.2329	0.2329	0.0000	884.2756	884.2756	0.2860		891.4254

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0551	0.0394	0.5044	1.2900e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		131.2251	131.2251	4.4100e-003	3.8400e-003	132.4792
Total	0.0551	0.0394	0.5044	1.2900e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		131.2251	131.2251	4.4100e-003	3.8400e-003	132.4792

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.1507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	10.3552	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.1507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	10.1804	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Government Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Unmitigated	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Total	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Total	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - Hotel Construction Only****Los Angeles-Mojave Desert County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	58.00	Room	1.93	84,216.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.14	0.00
tblEnergyUse	NT24E	2.89	0.00
tblEnergyUse	NT24NG	4.06	0.00
tblEnergyUse	T24E	2.28	0.00
tblEnergyUse	T24NG	19.72	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	31.75	0.00
tblVehicleTrips	ST_TR	8.19	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	WD_TR	8.36	0.00
tblWater	IndoorWaterUseRate	1,471,272.66	0.00
tblWater	OutdoorWaterUseRate	163,474.74	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2022	0.3647	1.6081	1.6232	3.2500e-003	0.0974	0.0720	0.1694	0.0246	0.0692	0.0937	0.0000	278.3176	278.3176	0.0425	6.6300e-003	281.3551
Maximum	0.3647	1.6081	1.6232	3.2500e-003	0.0974	0.0720	0.1694	0.0246	0.0692	0.0937	0.0000	278.3176	278.3176	0.0425	6.6300e-003	281.3551

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1892	0.1766	0.8245	1.8200e-003	0.0673	2.9700e-003	0.0703	0.0174	2.9200e-003	0.0204	0.0000	165.1587	165.1587	0.0330	6.6300e-003	167.9597
Maximum	0.1892	0.1766	0.8245	1.8200e-003	0.0673	2.9700e-003	0.0703	0.0174	2.9200e-003	0.0204	0.0000	165.1587	165.1587	0.0330	6.6300e-003	167.9597

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	48.11	89.02	49.20	44.00	30.86	95.88	58.49	29.05	95.78	78.28	0.00	40.66	40.66	22.26	0.00	40.30

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	2/2/2022	2/7/2022	5	4	
3	Building Construction	Building Construction	2/8/2022	11/14/2022	5	200	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	11/15/2022	11/28/2022	5	10
5	Architectural Coating	Architectural Coating	11/29/2022	12/12/2022	5	10

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 126,324; Non-Residential Outdoor: 42,108; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	35.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	374.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0405	0.0000	0.0405	6.1300e-003	0.0000	6.1300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1662	0.1396	2.4000e-004		8.3800e-003	8.3800e-003		7.8300e-003	7.8300e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2120
Total	0.0169	0.1662	0.1396	2.4000e-004	0.0405	8.3800e-003	0.0488	6.1300e-003	7.8300e-003	0.0140	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2120

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.6000e-004	0.0331	7.3700e-003	1.2000e-004	3.2200e-003	2.3000e-004	3.4500e-003	8.8000e-004	2.2000e-004	1.1100e-003	0.0000	11.5503	11.5503	6.1000e-004	1.8300e-003	12.1118
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	1.2300e-003	0.0334	0.0111	1.3000e-004	4.2700e-003	2.4000e-004	4.5000e-003	1.1600e-003	2.3000e-004	1.3900e-003	0.0000	12.4229	12.4229	6.4000e-004	1.8600e-003	12.9927

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0182	0.0000	0.0182	2.7600e-003	0.0000	2.7600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0122	0.1472	2.4000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2119
Total	2.8100e-003	0.0122	0.1472	2.4000e-004	0.0182	3.7000e-004	0.0186	2.7600e-003	3.7000e-004	3.1300e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2119

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.6000e-004	0.0331	7.3700e-003	1.2000e-004	3.2200e-003	2.3000e-004	3.4500e-003	8.8000e-004	2.2000e-004	1.1100e-003	0.0000	11.5503	11.5503	6.1000e-004	1.8300e-003	12.1118
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	1.2300e-003	0.0334	0.0111	1.3000e-004	4.2700e-003	2.4000e-004	4.5000e-003	1.1600e-003	2.3000e-004	1.3900e-003	0.0000	12.4229	12.4229	6.4000e-004	1.8600e-003	12.9927

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0800e-003	0.0340	0.0184	4.0000e-005		1.4800e-003	1.4800e-003		1.3700e-003	1.3700e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	3.0800e-003	0.0340	0.0184	4.0000e-005	0.0142	1.4800e-003	0.0157	6.8500e-003	1.3700e-003	8.2200e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.3700e-003	0.0000	6.3700e-003	3.0800e-003	0.0000	3.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0000e-004	2.1900e-003	0.0218	4.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	5.0000e-004	2.1900e-003	0.0218	4.0000e-005	6.3700e-003	7.0000e-005	6.4400e-003	3.0800e-003	7.0000e-005	3.1500e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355

3.4 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1649	1.2503	1.2726	2.2100e-003		0.0589	0.0589		0.0569	0.0569	0.0000	181.5769	181.5769	0.0316	0.0000	182.3675
Total	0.1649	1.2503	1.2726	2.2100e-003		0.0589	0.0589		0.0569	0.0569	0.0000	181.5769	181.5769	0.0316	0.0000	182.3675

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8400e-003	0.0752	0.0245	2.9000e-004	9.3300e-003	6.9000e-004	0.0100	2.6900e-003	6.6000e-004	3.3500e-003	0.0000	28.1605	28.1605	9.4000e-004	4.0600e-003	29.3939
Worker	9.9700e-003	7.8200e-003	0.1003	2.5000e-004	0.0282	1.9000e-004	0.0284	7.4900e-003	1.7000e-004	7.6600e-003	0.0000	23.4922	23.4922	7.8000e-004	6.9000e-004	23.7159
Total	0.0128	0.0830	0.1249	5.4000e-004	0.0375	8.8000e-004	0.0384	0.0102	8.3000e-004	0.0110	0.0000	51.6526	51.6526	1.7200e-003	4.7500e-003	53.1098

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5800e-003	0.0415	0.4577	7.8000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	68.5899	68.5899	0.0222	0.0000	69.1445
Total	9.5800e-003	0.0415	0.4577	7.8000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	68.5899	68.5899	0.0222	0.0000	69.1445

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8400e-003	0.0752	0.0245	2.9000e-004	9.3300e-003	6.9000e-004	0.0100	2.6900e-003	6.6000e-004	3.3500e-003	0.0000	28.1605	28.1605	9.4000e-004	4.0600e-003	29.3939
Worker	9.9700e-003	7.8200e-003	0.1003	2.5000e-004	0.0282	1.9000e-004	0.0284	7.4900e-003	1.7000e-004	7.6600e-003	0.0000	23.4922	23.4922	7.8000e-004	6.9000e-004	23.7159
Total	0.0128	0.0830	0.1249	5.4000e-004	0.0375	8.8000e-004	0.0384	0.0102	8.3000e-004	0.0110	0.0000	51.6526	51.6526	1.7200e-003	4.7500e-003	53.1098

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0000e-004	3.4600e-003	0.0493	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7130	5.7130	1.8500e-003	0.0000	5.7591
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.0000e-004	3.4600e-003	0.0493	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7130	5.7130	1.8500e-003	0.0000	5.7591

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1610					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	0.1620	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	1.0000e-003	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2349	0.2349	1.0000e-005	1.0000e-005	0.2372
Total	1.0000e-004	8.0000e-005	1.0000e-003	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2349	0.2349	1.0000e-005	1.0000e-005	0.2372

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1610					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	0.1612	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787

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Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Hotel	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Hotel	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Hotel	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Hotel	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Hotel	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - Hotel Construction Only

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	58.00	Room	1.93	84,216.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.14	0.00
tblEnergyUse	NT24E	2.89	0.00
tblEnergyUse	NT24NG	4.06	0.00
tblEnergyUse	T24E	2.28	0.00
tblEnergyUse	T24NG	19.72	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	31.75	0.00
tblVehicleTrips	ST_TR	8.19	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	WD_TR	8.36	0.00
tblWater	IndoorWaterUseRate	1,471,272.66	0.00
tblWater	OutdoorWaterUseRate	163,474.74	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day											lb/day				

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5000e-004	5.0000e-005	5.9200e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005	0.0000	0.0135

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5000e-004	5.0000e-005	5.9200e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005	0.0000	0.0135

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	2/2/2022	2/7/2022	5	4	
3	Building Construction	Building Construction	2/8/2022	11/14/2022	5	200	
4	Paving	Paving	11/15/2022	11/28/2022	5	10	
5	Architectural Coating	Architectural Coating	11/29/2022	12/12/2022	5	10	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 4****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 126,324; Non-Residential Outdoor: 42,108; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	35.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	374.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0465	0.0000	4.0465	0.6127	0.0000	0.6127			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	1.6889	16.6217	13.9605	0.0241	4.0465	0.8379	4.8844	0.6127	0.7829	1.3956		2,323.4168	2,323.4168	0.5921		2,338.2191

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0871	3.1406	0.7323	0.0116	0.3273	0.0233	0.3507	0.0897	0.0223	0.1121		1,273.0504	1,273.0504	0.0676	0.2020	1,334.9326
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.1248	3.1664	1.1243	0.0126	0.4341	0.0240	0.4581	0.1181	0.0230	0.1410		1,373.0834	1,373.0834	0.0707	0.2046	1,435.8163

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8209	0.0000	1.8209	0.2757	0.0000	0.2757			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	0.2811	1.2179	14.7184	0.0241	1.8209	0.0375	1.8584	0.2757	0.0375	0.3132	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0871	3.1406	0.7323	0.0116	0.3273	0.0233	0.3507	0.0897	0.0223	0.1121		1,273.0504	1,273.0504	0.0676	0.2020	1,334.9326
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.1248	3.1664	1.1243	0.0126	0.4341	0.0240	0.4581	0.1181	0.0230	0.1410		1,373.0834	1,373.0834	0.0707	0.2046	1,435.8163

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	1.5403	16.9836	9.2202	0.0206	7.0826	0.7423	7.8249	3.4247	0.6829	4.1076		1,995.4825	1,995.4825	0.6454		2,011.6169

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	0.2522	1.0927	10.9071	0.0206	3.1872	0.0336	3.2208	1.5411	0.0336	1.5748	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0286	0.7161	0.2416	2.8900e-003	0.0949	6.9000e-003	0.1018	0.0273	6.6000e-003	0.0339		310.3693	310.3693	0.0104	0.0447	323.9505
Worker	0.1015	0.0694	1.0555	2.6500e-003	0.2875	1.8900e-003	0.2894	0.0763	1.7400e-003	0.0780		269.3198	269.3198	8.3400e-003	6.9900e-003	271.6099
Total	0.1301	0.7855	1.2971	5.5400e-003	0.3824	8.7900e-003	0.3912	0.1036	8.3400e-003	0.1119		579.6891	579.6891	0.0187	0.0517	595.5604

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0286	0.7161	0.2416	2.8900e-003	0.0949	6.9000e-003	0.1018	0.0273	6.6000e-003	0.0339		310.3693	310.3693	0.0104	0.0447	323.9505
Worker	0.1015	0.0694	1.0555	2.6500e-003	0.2875	1.8900e-003	0.2894	0.0763	1.7400e-003	0.0780		269.3198	269.3198	8.3400e-003	6.9900e-003	271.6099
Total	0.1301	0.7855	1.2971	5.5400e-003	0.3824	8.7900e-003	0.3912	0.1036	8.3400e-003	0.1119		579.6891	579.6891	0.0187	0.0517	595.5604

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	32.2032					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	32.4077	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0203	0.0139	0.2111	5.3000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		53.8640	53.8640	1.6700e-003	1.4000e-003	54.3220
Total	0.0203	0.0139	0.2111	5.3000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		53.8640	53.8640	1.6700e-003	1.4000e-003	54.3220

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	32.2032					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	32.2329	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0203	0.0139	0.2111	5.3000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		53.8640	53.8640	1.6700e-003	1.4000e-003	54.3220
Total	0.0203	0.0139	0.2111	5.3000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		53.8640	53.8640	1.6700e-003	1.4000e-003	54.3220

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Hotel	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Unmitigated	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Total	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Total	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - Hotel Construction Only****Los Angeles-Mojave Desert County, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	58.00	Room	1.93	84,216.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.14	0.00
tblEnergyUse	NT24E	2.89	0.00
tblEnergyUse	NT24NG	4.06	0.00
tblEnergyUse	T24E	2.28	0.00
tblEnergyUse	T24NG	19.72	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	31.75	0.00
tblVehicleTrips	ST_TR	8.19	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	WD_TR	8.36	0.00
tblWater	IndoorWaterUseRate	1,471,272.66	0.00
tblWater	OutdoorWaterUseRate	163,474.74	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5000e-004	5.0000e-005	5.9200e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005	0.0000	0.0135

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5000e-004	5.0000e-005	5.9200e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005	0.0000	0.0135

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	2/2/2022	2/7/2022	5	4	
3	Building Construction	Building Construction	2/8/2022	11/14/2022	5	200	
4	Paving	Paving	11/15/2022	11/28/2022	5	10	
5	Architectural Coating	Architectural Coating	11/29/2022	12/12/2022	5	10	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 4****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 126,324; Non-Residential Outdoor: 42,108; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	35.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	374.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0465	0.0000	4.0465	0.6127	0.0000	0.6127			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	1.6889	16.6217	13.9605	0.0241	4.0465	0.8379	4.8844	0.6127	0.7829	1.3956		2,323.4168	2,323.4168	0.5921		2,338.2191

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0850	3.2681	0.7452	0.0116	0.3273	0.0234	0.3507	0.0897	0.0224	0.1121		1,273.4236	1,273.4236	0.0675	0.2021	1,335.3226
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.1248	3.2966	1.1095	0.0126	0.4341	0.0241	0.4582	0.1181	0.0230	0.1411		1,368.1973	1,368.1973	0.0707	0.2048	1,431.0020

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8209	0.0000	1.8209	0.2757	0.0000	0.2757			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	0.2811	1.2179	14.7184	0.0241	1.8209	0.0375	1.8584	0.2757	0.0375	0.3132	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0850	3.2681	0.7452	0.0116	0.3273	0.0234	0.3507	0.0897	0.0224	0.1121		1,273.4236	1,273.4236	0.0675	0.2021	1,335.3226
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.1248	3.2966	1.1095	0.0126	0.4341	0.0241	0.4582	0.1181	0.0230	0.1411		1,368.1973	1,368.1973	0.0707	0.2048	1,431.0020

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	1.5403	16.9836	9.2202	0.0206	7.0826	0.7423	7.8249	3.4247	0.6829	4.1076		1,995.4825	1,995.4825	0.6454		2,011.6169

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	0.2522	1.0927	10.9071	0.0206	3.1872	0.0336	3.2208	1.5411	0.0336	1.5748	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0283	0.7456	0.2497	2.8900e-003	0.0949	6.9300e-003	0.1018	0.0273	6.6300e-003	0.0339		310.4799	310.4799	0.0103	0.0448	324.0771
Worker	0.1072	0.0766	0.9808	2.5100e-003	0.2875	1.8900e-003	0.2894	0.0763	1.7400e-003	0.0780		255.1600	255.1600	8.5800e-003	7.4600e-003	257.5984
Total	0.1355	0.8223	1.2305	5.4000e-003	0.3824	8.8200e-003	0.3912	0.1036	8.3700e-003	0.1119		565.6399	565.6399	0.0189	0.0522	581.6755

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0283	0.7456	0.2497	2.8900e-003	0.0949	6.9300e-003	0.1018	0.0273	6.6300e-003	0.0339		310.4799	310.4799	0.0103	0.0448	324.0771
Worker	0.1072	0.0766	0.9808	2.5100e-003	0.2875	1.8900e-003	0.2894	0.0763	1.7400e-003	0.0780		255.1600	255.1600	8.5800e-003	7.4600e-003	257.5984
Total	0.1355	0.8223	1.2305	5.4000e-003	0.3824	8.8200e-003	0.3912	0.1036	8.3700e-003	0.1119		565.6399	565.6399	0.0189	0.0522	581.6755

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	32.2032					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	32.4077	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0214	0.0153	0.1962	5.0000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		51.0320	51.0320	1.7200e-003	1.4900e-003	51.5197
Total	0.0214	0.0153	0.1962	5.0000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		51.0320	51.0320	1.7200e-003	1.4900e-003	51.5197

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	32.2032					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	32.2329	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0214	0.0153	0.1962	5.0000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		51.0320	51.0320	1.7200e-003	1.4900e-003	51.5197
Total	0.0214	0.0153	0.1962	5.0000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		51.0320	51.0320	1.7200e-003	1.4900e-003	51.5197

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Hotel	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Unmitigated	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Total	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Total	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Palmdale GPU - Industrial Construction Only****Los Angeles-Mojave Desert County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	502.34	1000sqft	11.53	502,343.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use -

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/22/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1.91	0.00
tblEnergyUse	NT24E	1.34	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.58	0.00
tblEnergyUse	T24NG	0.83	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	472.20	0.00
tblVehicleTrips	ST_TR	1.74	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	116,166,125.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	2.1026	3.2344	3.3670	8.6100e-003	0.6258	0.1313	0.7571	0.1529	0.1230	0.2759	0.0000	783.8263	783.8263	0.1104	0.0425	799.2513
Maximum	2.1026	3.2344	3.3670	8.6100e-003	0.6258	0.1313	0.7571	0.1529	0.1230	0.2759	0.0000	783.8263	783.8263	0.1104	0.0425	799.2513

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	1.8789	0.9180	2.9611	7.5900e-003	0.4342	0.0125	0.4467	0.1102	0.0121	0.1223	0.0000	699.8188	699.8188	0.1049	0.0425	715.1061
Maximum	1.8789	0.9180	2.9611	7.5900e-003	0.4342	0.0125	0.4467	0.1102	0.0121	0.1223	0.0000	699.8188	699.8188	0.1049	0.0425	715.1061

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	10.64	71.62	12.05	11.85	30.63	90.48	41.00	27.93	90.14	55.67	0.00	10.72	10.72	4.99	0.00	10.53

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	1.3312	0.3772
2	4-1-2022	6-30-2022	0.7382	0.2131
3	7-1-2022	9-30-2022	0.7463	0.2154
		Highest	1.3312	0.3772

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5821	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.5821	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Paving	Paving	2/23/2022	3/22/2022	5	20
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 753,515; Non-Residential Outdoor: 251,172; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	211.00	82.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	2,285.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2472	0.0000	0.2472	0.0374	0.0000	0.0374	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0198	0.1929	0.1545	2.9000e-004		9.3200e-003	9.3200e-003		8.6600e-003	8.6600e-003	0.0000	25.4927	25.4927	7.1600e-003	0.0000	25.6717
Total	0.0198	0.1929	0.1545	2.9000e-004	0.2472	9.3200e-003	0.2566	0.0374	8.6600e-003	0.0461	0.0000	25.4927	25.4927	7.1600e-003	0.0000	25.6717

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2700e-003	0.2021	0.0451	7.1000e-004	0.0197	1.4300e-003	0.0211	5.4000e-003	1.3700e-003	6.7600e-003	0.0000	70.5682	70.5682	3.7500e-003	0.0112	73.9986
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2200e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7503	0.7503	2.0000e-005	2.0000e-005	0.7574
Total	5.5900e-003	0.2024	0.0483	7.2000e-004	0.0206	1.4400e-003	0.0220	5.6400e-003	1.3800e-003	7.0100e-003	0.0000	71.3185	71.3185	3.7700e-003	0.0112	74.7560

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1113	0.0000	0.1113	0.0169	0.0000	0.0169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4700e-003	0.0150	0.1746	2.9000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	25.4926	25.4926	7.1600e-003	0.0000	25.6717
Total	3.4700e-003	0.0150	0.1746	2.9000e-004	0.1113	4.6000e-004	0.1117	0.0169	4.6000e-004	0.0173	0.0000	25.4926	25.4926	7.1600e-003	0.0000	25.6717

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2700e-003	0.2021	0.0451	7.1000e-004	0.0197	1.4300e-003	0.0211	5.4000e-003	1.3700e-003	6.7600e-003	0.0000	70.5682	70.5682	3.7500e-003	0.0112	73.9986
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2200e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7503	0.7503	2.0000e-005	2.0000e-005	0.7574
Total	5.5900e-003	0.2024	0.0483	7.2000e-004	0.0206	1.4400e-003	0.0220	5.6400e-003	1.3800e-003	7.0100e-003	0.0000	71.3185	71.3185	3.7700e-003	0.0112	74.7560

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1012	0.0000	0.1012	0.0402	0.0000	0.0402	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4273	0.3195	6.8000e-004		0.0180	0.0180		0.0166	0.0166	0.0000	59.9881	59.9881	0.0194	0.0000	60.4731
Total	0.0399	0.4273	0.3195	6.8000e-004	0.1012	0.0180	0.1192	0.0402	0.0166	0.0567	0.0000	59.9881	59.9881	0.0194	0.0000	60.4731

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.9000e-004	6.3000e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4672	1.4672	5.0000e-005	4.0000e-005	1.4812
Total	6.3000e-004	4.9000e-004	6.3000e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4672	1.4672	5.0000e-005	4.0000e-005	1.4812

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0456	0.0000	0.0456	0.0181	0.0000	0.0181	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3800e-003	0.0363	0.3630	6.8000e-004		1.1200e-003	1.1200e-003		1.1200e-003	1.1200e-003	0.0000	59.9880	59.9880	0.0194	0.0000	60.4730
Total	8.3800e-003	0.0363	0.3630	6.8000e-004	0.0456	1.1200e-003	0.0467	0.0181	1.1200e-003	0.0192	0.0000	59.9880	59.9880	0.0194	0.0000	60.4730

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.9000e-004	6.3000e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4672	1.4672	5.0000e-005	4.0000e-005	1.4812
Total	6.3000e-004	4.9000e-004	6.3000e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4672	1.4672	5.0000e-005	4.0000e-005	1.4812

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1903	1.7411	1.8245	3.0000e-003		0.0902	0.0902		0.0849	0.0849	0.0000	258.3737	258.3737	0.0619	0.0000	259.9211
Total	0.1903	1.7411	1.8245	3.0000e-003		0.0902	0.0902		0.0849	0.0849	0.0000	258.3737	258.3737	0.0619	0.0000	259.9211

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0185	0.4911	0.1602	1.8900e-003	0.0610	4.5100e-003	0.0655	0.0176	4.3200e-003	0.0219	0.0000	183.9080	183.9080	6.1400e-003	0.0265	191.9633
Worker	0.0670	0.0525	0.6736	1.7100e-003	0.1895	1.2700e-003	0.1907	0.0503	1.1700e-003	0.0515	0.0000	156.8962	156.8962	5.2200e-003	4.6100e-003	158.4002
Total	0.0855	0.5437	0.8337	3.6000e-003	0.2504	5.7800e-003	0.2562	0.0679	5.4900e-003	0.0734	0.0000	340.8042	340.8042	0.0114	0.0311	350.3635

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0243	0.1054	1.3276	1.9800e-003		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.0000	174.3662	174.3662	0.0564	0.0000	175.7761
Total	0.0243	0.1054	1.3276	1.9800e-003		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.0000	174.3662	174.3662	0.0564	0.0000	175.7761

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0185	0.4911	0.1602	1.8900e-003	0.0610	4.5100e-003	0.0655	0.0176	4.3200e-003	0.0219	0.0000	183.9080	183.9080	6.1400e-003	0.0265	191.9633
Worker	0.0670	0.0525	0.6736	1.7100e-003	0.1895	1.2700e-003	0.1907	0.0503	1.1700e-003	0.0515	0.0000	156.8962	156.8962	5.2200e-003	4.6100e-003	158.4002
Total	0.0855	0.5437	0.8337	3.6000e-003	0.2504	5.7800e-003	0.2562	0.0679	5.4900e-003	0.0734	0.0000	340.8042	340.8042	0.0114	0.0311	350.3635

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.3000e-004	4.2900e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0003	1.0003	3.0000e-005	3.0000e-005	1.0099
Total	4.3000e-004	3.3000e-004	4.2900e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0003	1.0003	3.0000e-005	3.0000e-005	1.0099

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8000e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.8000e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.3000e-004	4.2900e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0003	1.0003	3.0000e-005	3.0000e-005	1.0099
Total	4.3000e-004	3.3000e-004	4.2900e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0003	1.0003	3.0000e-005	3.0000e-005	1.0099

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7463					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	1.7483	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	9.4000e-004	0.0120	3.0000e-005	3.3800e-003	2.0000e-005	3.4100e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	2.8009	2.8009	9.0000e-005	8.0000e-005	2.8278
Total	1.2000e-003	9.4000e-004	0.0120	3.0000e-005	3.3800e-003	2.0000e-005	3.4100e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	2.8009	2.8009	9.0000e-005	8.0000e-005	2.8278

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7463					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	1.7466	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5821					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.5821	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated**

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Palmdale GPU - Industrial Construction Only****Los Angeles-Mojave Desert County, Summer****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	502.34	1000sqft	11.53	502,343.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use -

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/22/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1.91	0.00
tblEnergyUse	NT24E	1.34	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.58	0.00
tblEnergyUse	T24NG	0.83	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	472.20	0.00
tblVehicleTrips	ST_TR	1.74	0.00

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	116,166,125.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	177.4391	51.3333	39.1652	0.1346	35.7552	1.6360	37.1887	5.7550	1.5051	7.0929	0.0000	14,231.9436	14,231.9436	1.9490	1.6484	14,763.3388
Maximum	177.4391	51.3333	39.1652	0.1346	35.7552	1.6360	37.1887	5.7550	1.5051	7.0929	0.0000	14,231.9436	14,231.9436	1.9490	1.6484	14,763.3388

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	175.7763	27.6172	37.4240	0.1346	17.6241	0.2525	17.8766	3.0098	0.2442	3.2541	0.0000	14,231.9436	14,231.9436	1.9490	1.6484	14,763.3388
Maximum	175.7763	27.6172	37.4240	0.1346	17.6241	0.2525	17.8766	3.0098	0.2442	3.2541	0.0000	14,231.9436	14,231.9436	1.9490	1.6484	14,763.3388

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.94	46.20	4.45	0.00	50.71	84.56	51.93	47.70	83.77	54.12	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	3.1943	4.7000e-004	0.0513	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004	0.0000	0.1172
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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.1943	4.7000e-004	0.0513	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004	0.0000	0.1172

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	
4	Paving	Paving	2/23/2022	3/22/2022	5	20	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 66****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 753,515; Non-Residential Outdoor: 251,172; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	211.00	82.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	2,285.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.9656	0.0000	32.9656	4.9913	0.0000	4.9913			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	2.6392	25.7194	20.5941	0.0388	32.9656	1.2427	34.2082	4.9913	1.1553	6.1465		3,746.7812	3,746.7812	1.0524		3,773.0920

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7097	25.5842	5.9653	0.0947	2.6664	0.1901	2.8565	0.7310	0.1819	0.9129		10,370.4816	10,370.4816	0.5508	1.6454	10,874.5844
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	0.7532	25.6139	6.4170	0.0958	2.7896	0.1909	2.9805	0.7637	0.1826	0.9463		10,485.1625	10,485.1625	0.5544	1.6484	10,990.2468

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					14.8345	0.0000	14.8345	2.2461	0.0000	2.2461			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	0.4623	2.0032	23.2798	0.0388	14.8345	0.0616	14.8961	2.2461	0.0616	2.3077	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7097	25.5842	5.9653	0.0947	2.6664	0.1901	2.8565	0.7310	0.1819	0.9129		10,370.4816	10,370.4816	0.5508	1.6454	10,874.5844
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	0.7532	25.6139	6.4170	0.0958	2.7896	0.1909	2.9805	0.7637	0.1826	0.9463		10,485.1625	10,485.1625	0.5544	1.6484	10,990.2468

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	3.6248	38.8435	29.0415	0.0621	9.2036	1.6349	10.8385	3.6538	1.5041	5.1579		6,011.4105	6,011.4105	1.9442		6,060.0158

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165
Total	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	0.7616	3.3000	32.9991	0.0621	4.1416	0.1015	4.2432	1.6442	0.1015	1.7457	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165
Total	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1675	4.1945	1.4153	0.0169	0.5556	0.0404	0.5960	0.1600	0.0387	0.1986		1,817.8773	1,817.8773	0.0608	0.2618	1,897.4241
Worker	0.6118	0.4181	6.3543	0.0160	1.7333	0.0114	1.7447	0.4598	0.0105	0.4702		1,613.1780	1,613.1780	0.0503	0.0421	1,626.9844
Total	0.7793	4.6126	7.7696	0.0329	2.2889	0.0518	2.3407	0.6197	0.0491	0.6688		3,431.0553	3,431.0553	0.1111	0.3040	3,524.4085

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1675	4.1945	1.4153	0.0169	0.5556	0.0404	0.5960	0.1600	0.0387	0.1986		1,817.8773	1,817.8773	0.0608	0.2618	1,897.4241
Worker	0.6118	0.4181	6.3543	0.0160	1.7333	0.0114	1.7447	0.4598	0.0105	0.4702		1,613.1780	1,613.1780	0.0503	0.0421	1,626.9844
Total	0.7793	4.6126	7.7696	0.0329	2.2889	0.0518	2.3407	0.6197	0.0491	0.6688		3,431.0553	3,431.0553	0.1111	0.3040	3,524.4085

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	174.6272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	174.8318	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1218	0.0832	1.2648	3.1800e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		321.1065	321.1065	0.0100	8.3800e-003	323.8547
Total	0.1218	0.0832	1.2648	3.1800e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		321.1065	321.1065	0.0100	8.3800e-003	323.8547

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	174.6272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	174.6569	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1218	0.0832	1.2648	3.1800e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		321.1065	321.1065	0.0100	8.3800e-003	323.8547
Total	0.1218	0.0832	1.2648	3.1800e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		321.1065	321.1065	0.0100	8.3800e-003	323.8547

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unrefrigerated Warehouse-No Rail	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day										lb/day						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day										lb/day						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Unmitigated	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.1895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.7500e-003	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Total	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.1895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.7500e-003	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Total	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Palmdale GPU - Industrial Construction Only**

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	502.34	1000sqft	11.53	502,343.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use -

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/22/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1.91	0.00
tblEnergyUse	NT24E	1.34	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.58	0.00
tblEnergyUse	T24NG	0.83	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	472.20	0.00
tblVehicleTrips	ST_TR	1.74	0.00

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	116,166,125.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	177.4782	52.3747	38.7307	0.1346	35.7552	1.6360	37.1891	5.7550	1.5051	7.0932	0.0000	14,228.9545	14,228.9545	1.9491	1.6492	14,760.5502
Maximum	177.4782	52.3747	38.7307	0.1346	35.7552	1.6360	37.1891	5.7550	1.5051	7.0932	0.0000	14,228.9545	14,228.9545	1.9491	1.6492	14,760.5502

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	175.8153	28.6585	36.9895	0.1346	17.6241	0.2529	17.8770	3.0098	0.2446	3.2544	0.0000	14,228.9545	14,228.9545	1.9491	1.6492	14,760.5502
Maximum	175.8153	28.6585	36.9895	0.1346	17.6241	0.2529	17.8770	3.0098	0.2446	3.2544	0.0000	14,228.9545	14,228.9545	1.9491	1.6492	14,760.5502

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.94	45.28	4.50	0.00	50.71	84.54	51.93	47.70	83.75	54.12	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	3.1943	4.7000e-004	0.0513	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004	0.0000	0.1172
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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.1943	4.7000e-004	0.0513	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004	0.0000	0.1172

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	
4	Paving	Paving	2/23/2022	3/22/2022	5	20	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 66****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 753,515; Non-Residential Outdoor: 251,172; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	211.00	82.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	2,285.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.9656	0.0000	32.9656	4.9913	0.0000	4.9913			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	2.6392	25.7194	20.5941	0.0388	32.9656	1.2427	34.2082	4.9913	1.1553	6.1465		3,746.7812	3,746.7812	1.0524		3,773.0920

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6927	26.6224	6.0703	0.0947	2.6664	0.1905	2.8569	0.7310	0.1822	0.9133		10,373.5217	10,373.5217	0.5499	1.6460	10,877.7615
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	0.7386	26.6553	6.4900	0.0958	2.7896	0.1913	2.9809	0.7637	0.1830	0.9467		10,482.1733	10,482.1733	0.5536	1.6492	10,987.4582

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					14.8345	0.0000	14.8345	2.2461	0.0000	2.2461			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	0.4623	2.0032	23.2798	0.0388	14.8345	0.0616	14.8961	2.2461	0.0616	2.3077	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6927	26.6224	6.0703	0.0947	2.6664	0.1905	2.8569	0.7310	0.1822	0.9133		10,373.5217	10,373.5217	0.5499	1.6460	10,877.7615
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	0.7386	26.6553	6.4900	0.0958	2.7896	0.1913	2.9809	0.7637	0.1830	0.9467		10,482.1733	10,482.1733	0.5536	1.6492	10,987.4582

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	3.6248	38.8435	29.0415	0.0621	9.2036	1.6349	10.8385	3.6538	1.5041	5.1579		6,011.4105	6,011.4105	1.9442		6,060.0158

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622
Total	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	0.7616	3.3000	32.9991	0.0621	4.1416	0.1015	4.2432	1.6442	0.1015	1.7457	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622
Total	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1657	4.3672	1.4626	0.0169	0.5556	0.0406	0.5961	0.1600	0.0388	0.1988		1,818.5252	1,818.5252	0.0606	0.2622	1,898.1659
Worker	0.6459	0.4618	5.9045	0.0151	1.7333	0.0114	1.7447	0.4598	0.0105	0.4702		1,528.3660	1,528.3660	0.0518	0.0450	1,543.0661
Total	0.8116	4.8290	7.3670	0.0320	2.2889	0.0519	2.3408	0.6197	0.0493	0.6690		3,346.8912	3,346.8912	0.1123	0.3072	3,441.2320

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1657	4.3672	1.4626	0.0169	0.5556	0.0406	0.5961	0.1600	0.0388	0.1988		1,818.5252	1,818.5252	0.0606	0.2622	1,898.1659
Worker	0.6459	0.4618	5.9045	0.0151	1.7333	0.0114	1.7447	0.4598	0.0105	0.4702		1,528.3660	1,528.3660	0.0518	0.0450	1,543.0661
Total	0.8116	4.8290	7.3670	0.0320	2.2889	0.0519	2.3408	0.6197	0.0493	0.6690		3,346.8912	3,346.8912	0.1123	0.3072	3,441.2320

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	174.6272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	174.8318	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1286	0.0919	1.1753	3.0100e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		304.2245	304.2245	0.0103	8.9500e-003	307.1506
Total	0.1286	0.0919	1.1753	3.0100e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		304.2245	304.2245	0.0103	8.9500e-003	307.1506

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	174.6272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	174.6569	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1286	0.0919	1.1753	3.0100e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		304.2245	304.2245	0.0103	8.9500e-003	307.1506
Total	0.1286	0.0919	1.1753	3.0100e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		304.2245	304.2245	0.0103	8.9500e-003	307.1506

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unrefrigerated Warehouse-No Rail	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day										lb/day						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day										lb/day						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Unmitigated	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.1895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.7500e-003	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Total	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.1895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.7500e-003	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Total	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - MFR construction Only****Los Angeles-Mojave Desert County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	1,045.00	Dwelling Unit	27.50	1,045,000.00	3598

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions modeled separately

Road Dust - Operational Emissions modeled separately

Woodstoves - Operational Emissions modeled separately

Consumer Products - Operational Emissions modeled separately

Area Coating - Operational Emissions modeled separately

Landscape Equipment - Operational Emissions modeled separately

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Energy Use - Operational Emissions modeled separately

Water And Wastewater - Operational Emissions modeled separately

Solid Waste - Operational Emissions modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering is compliant with AVAQMD regulations for reducing fugitive dust, it is not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	440.00	222.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	NumDays	45.00	23.00
tblConstructionPhase	PhaseEndDate	4/26/2024	12/30/2022
tblConstructionPhase	PhaseEndDate	1/19/2024	12/29/2022
tblConstructionPhase	PhaseEndDate	2/11/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	5/13/2022	2/23/2022
tblConstructionPhase	PhaseEndDate	3/8/2024	4/12/2022
tblConstructionPhase	PhaseStartDate	3/9/2024	11/14/2022
tblConstructionPhase	PhaseStartDate	5/14/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	3/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	1/20/2024	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24NG	6,384.00	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	T24E	53.81	0.00
tblEnergyUse	T24NG	6,682.59	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	574.75	0.00
tblFireplaces	NumberNoFireplace	104.50	0.00
tblFireplaces	NumberWood	365.75	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	2,989.00	3,598.00
tblRoadDust	RoadPercentPave	100	0
tblSolidWaste	SolidWasteGenerationRate	480.70	0.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	WD_TR	5.44	0.00
tblWater	IndoorWaterUseRate	68,085,956.77	0.00
tblWater	OutdoorWaterUseRate	42,923,755.36	0.00
tblWoodstoves	NumberCatalytic	52.25	0.00
tblWoodstoves	NumberNoncatalytic	52.25	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	tons/yr										MT/yr					
2022	5.4504	3.4658	5.2978	0.0134	0.9029	0.1402	1.0431	0.2540	0.1313	0.3853	0.0000	1,221.1519	1,221.1519	0.1285	0.0537	1,240.3689
Maximum	5.4504	3.4658	5.2978	0.0134	0.9029	0.1402	1.0431	0.2540	0.1313	0.3853	0.0000	1,221.1519	1,221.1519	0.1285	0.0537	1,240.3689

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.2185	1.0550	4.9167	0.0124	0.8366	0.0165	0.8530	0.2296	0.0158	0.2455	0.0000	1,137.5210	1,137.5210	0.1230	0.0537	1,156.6010
Maximum	5.2185	1.0550	4.9167	0.0124	0.8366	0.0165	0.8530	0.2296	0.0158	0.2455	0.0000	1,137.5210	1,137.5210	0.1230	0.0537	1,156.6010

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	4.25	69.56	7.19	7.56	7.35	88.24	18.22	9.58	87.93	36.28	0.00	6.85	6.85	4.26	0.00	6.75

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/23/2022	5	23	
3	Building Construction	Building Construction	2/23/2022	12/29/2022	5	222	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	2/23/2022	4/12/2022	5	35
5	Architectural Coating	Architectural Coating	11/14/2022	12/30/2022	5	35

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 69

Acres of Paving: 0

**Residential Indoor: 2,116,125; Residential Outdoor: 705,375; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0
(Architectural Coating – sqft)**

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	150.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	752.00	112.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	136.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0148	0.0000	0.0148	2.2400e-003	0.0000	2.2400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0198	0.1929	0.1545	2.9000e-004		9.3200e-003	9.3200e-003		8.6600e-003	8.6600e-003	0.0000	25.4927	25.4927	7.1600e-003	0.0000	25.6717
Total	0.0198	0.1929	0.1545	2.9000e-004	0.0148	9.3200e-003	0.0241	2.2400e-003	8.6600e-003	0.0109	0.0000	25.4927	25.4927	7.1600e-003	0.0000	25.6717

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.1000e-004	0.0120	2.6800e-003	4.0000e-005	1.1700e-003	8.0000e-005	1.2500e-003	3.2000e-004	8.0000e-005	4.0000e-004	0.0000	4.2001	4.2001	2.2000e-004	6.7000e-004	4.4043
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2300e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7551	0.7551	2.0000e-005	2.0000e-005	0.7623
Total	6.3000e-004	0.0123	5.9100e-003	5.0000e-005	2.0800e-003	9.0000e-005	2.1600e-003	5.6000e-004	9.0000e-005	6.5000e-004	0.0000	4.9552	4.9552	2.4000e-004	6.9000e-004	5.1666

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.6400e-003	0.0000	6.6400e-003	1.0100e-003	0.0000	1.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4700e-003	0.0150	0.1746	2.9000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	25.4926	25.4926	7.1600e-003	0.0000	25.6717
Total	3.4700e-003	0.0150	0.1746	2.9000e-004	6.6400e-003	4.6000e-004	7.1000e-003	1.0100e-003	4.6000e-004	1.4700e-003	0.0000	25.4926	25.4926	7.1600e-003	0.0000	25.6717

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.1000e-004	0.0120	2.6800e-003	4.0000e-005	1.1700e-003	8.0000e-005	1.2500e-003	3.2000e-004	8.0000e-005	4.0000e-004	0.0000	4.2001	4.2001	2.2000e-004	6.7000e-004	4.4043
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2300e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7551	0.7551	2.0000e-005	2.0000e-005	0.7623
Total	6.3000e-004	0.0123	5.9100e-003	5.0000e-005	2.0800e-003	9.0000e-005	2.1600e-003	5.6000e-004	9.0000e-005	6.5000e-004	0.0000	4.9552	4.9552	2.4000e-004	6.9000e-004	5.1666

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1058	0.0000	0.1058	0.0420	0.0000	0.0420	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0417	0.4467	0.3340	7.1000e-004		0.0188	0.0188		0.0173	0.0173	0.0000	62.7148	62.7148	0.0203	0.0000	63.2219
Total	0.0417	0.4467	0.3340	7.1000e-004	0.1058	0.0188	0.1246	0.0420	0.0173	0.0593	0.0000	62.7148	62.7148	0.0203	0.0000	63.2219

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	5.1000e-004	6.5900e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5438	1.5438	5.0000e-005	5.0000e-005	1.5585
Total	6.6000e-004	5.1000e-004	6.5900e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5438	1.5438	5.0000e-005	5.0000e-005	1.5585

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0476	0.0000	0.0476	0.0189	0.0000	0.0189	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7600e-003	0.0380	0.3795	7.1000e-004		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	62.7147	62.7147	0.0203	0.0000	63.2218
Total	8.7600e-003	0.0380	0.3795	7.1000e-004	0.0476	1.1700e-003	0.0488	0.0189	1.1700e-003	0.0201	0.0000	62.7147	62.7147	0.0203	0.0000	63.2218

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	5.1000e-004	6.5900e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5438	1.5438	5.0000e-005	5.0000e-005	1.5585
Total	6.6000e-004	5.1000e-004	6.5900e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5438	1.5438	5.0000e-005	5.0000e-005	1.5585

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1894	1.7333	1.8163	2.9900e-003		0.0898	0.0898		0.0845	0.0845	0.0000	257.2150	257.2150	0.0616	0.0000	258.7556
Total	0.1894	1.7333	1.8163	2.9900e-003		0.0898	0.0898		0.0845	0.0845	0.0000	257.2150	257.2150	0.0616	0.0000	258.7556

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0252	0.6678	0.2178	2.5700e-003	0.0829	6.1400e-003	0.0890	0.0239	5.8700e-003	0.0298	0.0000	250.0651	250.0651	8.3400e-003	0.0361	261.0180
Worker	0.2378	0.1865	2.3931	6.0700e-003	0.6722	4.5000e-003	0.6767	0.1786	4.1500e-003	0.1827	0.0000	560.2679	560.2679	0.0185	0.0164	565.6040
Total	0.2630	0.8543	2.6109	8.6400e-003	0.7551	0.0106	0.7658	0.2025	0.0100	0.2125	0.0000	810.3329	810.3329	0.0269	0.0524	826.6221

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0242	0.1050	1.3217	1.9800e-003		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	173.5843	173.5843	0.0561	0.0000	174.9878
Total	0.0242	0.1050	1.3217	1.9800e-003		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	173.5843	173.5843	0.0561	0.0000	174.9878

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0252	0.6678	0.2178	2.5700e-003	0.0829	6.1400e-003	0.0890	0.0239	5.8700e-003	0.0298	0.0000	250.0651	250.0651	8.3400e-003	0.0361	261.0180
Worker	0.2378	0.1865	2.3931	6.0700e-003	0.6722	4.5000e-003	0.6767	0.1786	4.1500e-003	0.1827	0.0000	560.2679	560.2679	0.0185	0.0164	565.6040
Total	0.2630	0.8543	2.6109	8.6400e-003	0.7551	0.0106	0.7658	0.2025	0.0100	0.2125	0.0000	810.3329	810.3329	0.0269	0.0524	826.6221

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0193	0.1947	0.2552	4.0000e-004		9.9400e-003	9.9400e-003		9.1400e-003	9.1400e-003	0.0000	35.0482	35.0482	0.0113	0.0000	35.3316
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0193	0.1947	0.2552	4.0000e-004		9.9400e-003	9.9400e-003		9.1400e-003	9.1400e-003	0.0000	35.0482	35.0482	0.0113	0.0000	35.3316

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.9000e-004	7.5300e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1300e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.7619	1.7619	6.0000e-005	5.0000e-005	1.7787
Total	7.5000e-004	5.9000e-004	7.5300e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1300e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.7619	1.7619	6.0000e-005	5.0000e-005	1.7787

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.9100e-003	0.0213	0.3027	4.0000e-004		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	35.0482	35.0482	0.0113	0.0000	35.3316
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.9100e-003	0.0213	0.3027	4.0000e-004		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	35.0482	35.0482	0.0113	0.0000	35.3316

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.9000e-004	7.5300e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1300e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.7619	1.7619	6.0000e-005	5.0000e-005	1.7787
Total	7.5000e-004	5.9000e-004	7.5300e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1300e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.7619	1.7619	6.0000e-005	5.0000e-005	1.7787

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.9041					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5800e-003	0.0247	0.0317	5.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	4.4682	4.4682	2.9000e-004	0.0000	4.4755
Total	4.9077	0.0247	0.0317	5.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	4.4682	4.4682	2.9000e-004	0.0000	4.4755

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4800e-003	5.8600e-003	0.0753	1.9000e-004	0.0211	1.4000e-004	0.0213	5.6200e-003	1.3000e-004	5.7500e-003	0.0000	17.6191	17.6191	5.8000e-004	5.1000e-004	17.7869
Total	7.4800e-003	5.8600e-003	0.0753	1.9000e-004	0.0211	1.4000e-004	0.0213	5.6200e-003	1.3000e-004	5.7500e-003	0.0000	17.6191	17.6191	5.8000e-004	5.1000e-004	17.7869

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.9041					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2000e-004	2.2500e-003	0.0321	5.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	4.4682	4.4682	2.9000e-004	0.0000	4.4755
Total	4.9046	2.2500e-003	0.0321	5.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	4.4682	4.4682	2.9000e-004	0.0000	4.4755

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated		0.0000	0.0000	0.0000	0.0000
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7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - MFR construction Only****Los Angeles-Mojave Desert County, Summer****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	1,045.00	Dwelling Unit	27.50	1,045,000.00	3598

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions modeled separately

Road Dust - Operational Emissions modeled separately

Woodstoves - Operational Emissions modeled separately

Consumer Products - Operational Emissions modeled separately

Area Coating - Operational Emissions modeled separately

Landscape Equipment - Operational Emissions modeled separately

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Energy Use - Operational Emissions modeled separately

Water And Wastewater - Operational Emissions modeled separately

Solid Waste - Operational Emissions modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering is compliant with AVAQMD regulations for reducing fugitive dust, it is not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	440.00	222.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	NumDays	45.00	23.00
tblConstructionPhase	PhaseEndDate	4/26/2024	12/30/2022
tblConstructionPhase	PhaseEndDate	1/19/2024	12/29/2022
tblConstructionPhase	PhaseEndDate	2/11/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	5/13/2022	2/23/2022
tblConstructionPhase	PhaseEndDate	3/8/2024	4/12/2022
tblConstructionPhase	PhaseStartDate	3/9/2024	11/14/2022
tblConstructionPhase	PhaseStartDate	5/14/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	3/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	1/20/2024	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24NG	6,384.00	0.00

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	T24E	53.81	0.00
tblEnergyUse	T24NG	6,682.59	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	574.75	0.00
tblFireplaces	NumberNoFireplace	104.50	0.00
tblFireplaces	NumberWood	365.75	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	2,989.00	3,598.00
tblRoadDust	RoadPercentPave	100	0
tblSolidWaste	SolidWasteGenerationRate	480.70	0.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	WD_TR	5.44	0.00
tblWater	IndoorWaterUseRate	68,085,956.77	0.00
tblWater	OutdoorWaterUseRate	42,923,755.36	0.00
tblWoodstoves	NumberCatalytic	52.25	0.00
tblWoodstoves	NumberNoncatalytic	52.25	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	lb/day										lb/day					
2022	284.9914	72.8733	85.6523	0.1944	16.4274	3.1095	19.5369	5.5870	2.8796	8.4667	0.0000	19,312.2065	19,312.2065	3.5408	0.5377	19,554.1056
Maximum	284.9914	72.8733	85.6523	0.1944	16.4274	3.1095	19.5369	5.5870	2.8796	8.4667	0.0000	19,312.2065	19,312.2065	3.5408	0.5377	19,554.1056

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	283.3285	12.7504	87.8688	0.1853	11.3654	0.2657	11.6312	3.5775	0.2599	3.8374	0.0000	18,481.6942	18,481.6942	3.4863	0.5377	18,722.2327
Maximum	283.3285	12.7504	87.8688	0.1853	11.3654	0.2657	11.6312	3.5775	0.2599	3.8374	0.0000	18,481.6942	18,481.6942	3.4863	0.5377	18,722.2327

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.58	82.50	-2.59	4.70	30.81	91.45	40.47	35.97	90.97	54.68	0.00	4.30	4.30	1.54	0.00	4.25

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.5979	0.9940	86.2330	4.5500e-003	0.0000	0.4773	0.4773	0.0000	0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.5979	0.9940	86.2330	4.5500e-003	0.0000	0.4773	0.4773	0.0000	0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/23/2022	5	23	
3	Building Construction	Building Construction	2/23/2022	12/29/2022	5	222	
4	Paving	Paving	2/23/2022	4/12/2022	5	35	
5	Architectural Coating	Architectural Coating	11/14/2022	12/30/2022	5	35	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 69****Acres of Paving: 0****Residential Indoor: 2,116,125; Residential Outdoor: 705,375; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	150.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	752.00	112.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	136.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9687	0.0000	1.9687	0.2981	0.0000	0.2981			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	2.6392	25.7194	20.5941	0.0388	1.9687	1.2427	3.2114	0.2981	1.1553	1.4533		3,746.7812	3,746.7812	1.0524		3,773.0920

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0422	1.5227	0.3551	5.6300e-003	0.1587	0.0113	0.1700	0.0435	0.0108	0.0543		617.2365	617.2365	0.0328	0.0979	647.2400
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	0.0858	1.5525	0.8074	6.7600e-003	0.2819	0.0121	0.2940	0.0762	0.0116	0.0878		732.6593	732.6593	0.0364	0.1009	763.6443

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.8859	0.0000	0.8859	0.1341	0.0000	0.1341			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	0.4623	2.0032	23.2798	0.0388	0.8859	0.0616	0.9476	0.1341	0.0616	0.1958	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0422	1.5227	0.3551	5.6300e-003	0.1587	0.0113	0.1700	0.0435	0.0108	0.0543		617.2365	617.2365	0.0328	0.0979	647.2400
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	0.0858	1.5525	0.8074	6.7600e-003	0.2819	0.0121	0.2940	0.0762	0.0116	0.0878		732.6593	732.6593	0.0364	0.1009	763.6443

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	3.6248	38.8435	29.0415	0.0621	9.2036	1.6349	10.8385	3.6538	1.5041	5.1579		6,011.4105	6,011.4105	1.9442		6,060.0158

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	0.7616	3.3000	32.9991	0.0621	4.1416	0.1015	4.2432	1.6442	0.1015	1.7457	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2288	5.7290	1.9330	0.0231	0.7588	0.0552	0.8140	0.2185	0.0528	0.2713		2,482.9544	2,482.9544	0.0830	0.3576	2,591.6036
Worker	2.1813	1.4908	22.6784	0.0569	6.1775	0.0406	6.2181	1.6386	0.0374	1.6759		5,786.5279	5,786.5279	0.1793	0.1501	5,835.7337
Total	2.4101	7.2199	24.6114	0.0800	6.9363	0.0958	7.0321	1.8570	0.0902	1.9472		8,269.4823	8,269.4823	0.2623	0.5077	8,427.3373

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2288	5.7290	1.9330	0.0231	0.7588	0.0552	0.8140	0.2185	0.0528	0.2713		2,482.9544	2,482.9544	0.0830	0.3576	2,591.6036
Worker	2.1813	1.4908	22.6784	0.0569	6.1775	0.0406	6.2181	1.6386	0.0374	1.6759		5,786.5279	5,786.5279	0.1793	0.1501	5,835.7337
Total	2.4101	7.2199	24.6114	0.0800	6.9363	0.0958	7.0321	1.8570	0.0902	1.9472		8,269.4823	8,269.4823	0.2623	0.5077	8,427.3373

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.2354					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	280.4400	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4351	0.2974	4.5236	0.0114	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,154.2276	1,154.2276	0.0358	0.0299	1,164.0426
Total	0.4351	0.2974	4.5236	0.0114	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,154.2276	1,154.2276	0.0358	0.0299	1,164.0426

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.2354					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	280.2651	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4351	0.2974	4.5236	0.0114	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,154.2276	1,154.2276	0.0358	0.0299	1,164.0426
Total	0.4351	0.2974	4.5236	0.0114	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,154.2276	1,154.2276	0.0358	0.0299	1,164.0426

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Apartments Mid Rise	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Unmitigated	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773		155.2372	155.2372	0.1493		158.9691
Total	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773		155.2372	155.2372	0.1493		158.9691
Total	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - MFR construction Only**

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	1,045.00	Dwelling Unit	27.50	1,045,000.00	3598

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions modeled separately

Road Dust - Operational Emissions modeled separately

Woodstoves - Operational Emissions modeled separately

Consumer Products - Operational Emissions modeled separately

Area Coating - Operational Emissions modeled separately

Landscape Equipment - Operational Emissions modeled separately

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Energy Use - Operational Emissions modeled separately

Water And Wastewater - Operational Emissions modeled separately

Solid Waste - Operational Emissions modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering is compliant with AVAQMD regulations for reducing fugitive dust, it is not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	440.00	222.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	NumDays	45.00	23.00
tblConstructionPhase	PhaseEndDate	4/26/2024	12/30/2022
tblConstructionPhase	PhaseEndDate	1/19/2024	12/29/2022
tblConstructionPhase	PhaseEndDate	2/11/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	5/13/2022	2/23/2022
tblConstructionPhase	PhaseEndDate	3/8/2024	4/12/2022
tblConstructionPhase	PhaseStartDate	3/9/2024	11/14/2022
tblConstructionPhase	PhaseStartDate	5/14/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	3/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	1/20/2024	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24NG	6,384.00	0.00

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	T24E	53.81	0.00
tblEnergyUse	T24NG	6,682.59	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	574.75	0.00
tblFireplaces	NumberNoFireplace	104.50	0.00
tblFireplaces	NumberWood	365.75	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	2,989.00	3,598.00
tblRoadDust	RoadPercentPave	100	0
tblSolidWaste	SolidWasteGenerationRate	480.70	0.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	WD_TR	5.44	0.00
tblWater	IndoorWaterUseRate	68,085,956.77	0.00
tblWater	OutdoorWaterUseRate	42,923,755.36	0.00
tblWoodstoves	NumberCatalytic	52.25	0.00
tblWoodstoves	NumberNoncatalytic	52.25	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	lb/day										lb/day					
2022	285.1345	73.2721	84.0367	0.1913	16.4274	3.1097	19.5371	5.5870	2.8798	8.4669	0.0000	18,994.6985	18,994.6985	3.5459	0.5504	19,240.0595
Maximum	285.1345	73.2721	84.0367	0.1913	16.4274	3.1097	19.5371	5.5870	2.8798	8.4669	0.0000	18,994.6985	18,994.6985	3.5459	0.5504	19,240.0595

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	283.4717	13.1492	86.2531	0.1822	11.3654	0.2659	11.6313	3.5775	0.2601	3.8376	0.0000	18,164.1862	18,164.1862	3.4914	0.5504	18,408.1865
Maximum	283.4717	13.1492	86.2531	0.1822	11.3654	0.2659	11.6313	3.5775	0.2601	3.8376	0.0000	18,164.1862	18,164.1862	3.4914	0.5504	18,408.1865

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.58	82.05	-2.64	4.77	30.81	91.45	40.47	35.97	90.97	54.67	0.00	4.37	4.37	1.54	0.00	4.32

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.5979	0.9940	86.2330	4.5500e-003	0.0000	0.4773	0.4773	0.0000	0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.5979	0.9940	86.2330	4.5500e-003	0.0000	0.4773	0.4773	0.0000	0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/23/2022	5	23	
3	Building Construction	Building Construction	2/23/2022	12/29/2022	5	222	
4	Paving	Paving	2/23/2022	4/12/2022	5	35	
5	Architectural Coating	Architectural Coating	11/14/2022	12/30/2022	5	35	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 69****Acres of Paving: 0****Residential Indoor: 2,116,125; Residential Outdoor: 705,375; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	150.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	752.00	112.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	136.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9687	0.0000	1.9687	0.2981	0.0000	0.2981			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	2.6392	25.7194	20.5941	0.0388	1.9687	1.2427	3.2114	0.2981	1.1553	1.4533		3,746.7812	3,746.7812	1.0524		3,773.0920

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0412	1.5845	0.3613	5.6400e-003	0.1587	0.0113	0.1700	0.0435	0.0109	0.0544		617.4175	617.4175	0.0327	0.0980	647.4291
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	0.0872	1.6174	0.7816	6.7100e-003	0.2819	0.0122	0.2941	0.0762	0.0116	0.0878		726.7718	726.7718	0.0364	0.1012	757.8285

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.8859	0.0000	0.8859	0.1341	0.0000	0.1341			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	0.4623	2.0032	23.2798	0.0388	0.8859	0.0616	0.9476	0.1341	0.0616	0.1958	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0412	1.5845	0.3613	5.6400e-003	0.1587	0.0113	0.1700	0.0435	0.0109	0.0544		617.4175	617.4175	0.0327	0.0980	647.4291
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	0.0872	1.6174	0.7816	6.7100e-003	0.2819	0.0122	0.2941	0.0762	0.0116	0.0878		726.7718	726.7718	0.0364	0.1012	757.8285

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	3.6248	38.8435	29.0415	0.0621	9.2036	1.6349	10.8385	3.6538	1.5041	5.1579		6,011.4105	6,011.4105	1.9442		6,060.0158

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	0.7616	3.3000	32.9991	0.0621	4.1416	0.1015	4.2432	1.6442	0.1015	1.7457	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2263	5.9649	1.9977	0.0231	0.7588	0.0554	0.8142	0.2185	0.0530	0.2715		2,483.8393	2,483.8393	0.0827	0.3581	2,592.6169
Worker	2.3027	1.6466	21.0728	0.0539	6.1775	0.0406	6.2181	1.6386	0.0374	1.6759		5,482.2948	5,482.2948	0.1844	0.1603	5,534.6858
Total	2.5290	7.6115	23.0705	0.0770	6.9363	0.0960	7.0323	1.8570	0.0904	1.9474		7,966.1341	7,966.1341	0.2671	0.5184	8,127.3027

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2263	5.9649	1.9977	0.0231	0.7588	0.0554	0.8142	0.2185	0.0530	0.2715		2,483.8393	2,483.8393	0.0827	0.3581	2,592.6169
Worker	2.3027	1.6466	21.0728	0.0539	6.1775	0.0406	6.2181	1.6386	0.0374	1.6759		5,482.2948	5,482.2948	0.1844	0.1603	5,534.6858
Total	2.5290	7.6115	23.0705	0.0770	6.9363	0.0960	7.0323	1.8570	0.0904	1.9474		7,966.1341	7,966.1341	0.2671	0.5184	8,127.3027

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.2354					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	280.4400	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4593	0.3285	4.2034	0.0108	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,093.5428	1,093.5428	0.0368	0.0320	1,103.9932
Total	0.4593	0.3285	4.2034	0.0108	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,093.5428	1,093.5428	0.0368	0.0320	1,103.9932

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.2354					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	280.2651	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4593	0.3285	4.2034	0.0108	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,093.5428	1,093.5428	0.0368	0.0320	1,103.9932
Total	0.4593	0.3285	4.2034	0.0108	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,093.5428	1,093.5428	0.0368	0.0320	1,103.9932

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Apartments Mid Rise	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Unmitigated	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773		155.2372	155.2372	0.1493		158.9691
Total	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773		155.2372	155.2372	0.1493		158.9691
Total	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - 2023 Operational Year Emissions

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	193
Apartments Mid Rise	1,045.00	Dwelling Unit	27.50	1,045,000.00	3598
Strip Mall	68.62	1000sqft	1.58	68,623.00	0
Hotel	58.00	Room	1.93	84,216.00	0
General Office Building	171.28	1000sqft	3.93	171,275.00	0
Unrefrigerated Warehouse-No Rail	502.34	1000sqft	11.53	502,343.00	0
Elementary School	51.10	1000sqft	1.17	51,102.00	0
Government Office Building	7.30	1000sqft	0.17	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - Construction Modeled Separately

Off-road Equipment - Construction Modeled Separately

Trips and VMT - Construction Modeled Separately

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating - Construction Modeled Separately

Vehicle Trips - See Assumptions

Woodstoves - AVAQMD and GP Policies

Area Coating - See Assumptions

Energy Use - See Assumptions. Adjusted for 100% electric development

Water And Wastewater - Water emissions not applicable to AQ output

Solid Waste - Solid waste not applicable to AQ emissions output

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblConstructionPhase	NumDays	75.00	1.00
tblConstructionPhase	PhaseEndDate	1/28/2028	10/18/2027
tblEnergyUse	NT24E	3,054.10	4,924.61
tblEnergyUse	NT24E	1.59	1.91
tblEnergyUse	NT24E	4.62	4.73
tblEnergyUse	NT24E	4.62	4.73
tblEnergyUse	NT24E	2.89	4.08
tblEnergyUse	NT24E	6,155.97	8,026.48
tblEnergyUse	NT24E	3.23	3.46
tblEnergyUse	NT24E	1.34	1.35
tblEnergyUse	NT24NG	6,384.00	0.00

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	NT24NG	4.06	0.00
tblEnergyUse	NT24NG	6,384.00	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	53.81	2,011.81
tblEnergyUse	T24E	1.56	4.26
tblEnergyUse	T24E	4.11	7.02
tblEnergyUse	T24E	4.11	7.02
tblEnergyUse	T24E	2.28	8.06
tblEnergyUse	T24E	93.13	5,691.80
tblEnergyUse	T24E	3.58	3.91
tblEnergyUse	T24E	0.58	0.82
tblEnergyUse	T24NG	6,682.59	0.00
tblEnergyUse	T24NG	9.23	0.00
tblEnergyUse	T24NG	9.92	0.00
tblEnergyUse	T24NG	9.92	0.00
tblEnergyUse	T24NG	19.72	0.00
tblEnergyUse	T24NG	19,108.08	0.00
tblEnergyUse	T24NG	1.14	0.00
tblEnergyUse	T24NG	0.83	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	574.75	0.00
tblFireplaces	NumberGas	30.80	0.00
tblFireplaces	NumberNoFireplace	104.50	1,045.00
tblFireplaces	NumberNoFireplace	5.60	56.00
tblFireplaces	NumberWood	365.75	0.00
tblFireplaces	NumberWood	19.60	0.00
tblLandUse	Population	160.00	193.00
tblLandUse	Population	2,989.00	3,598.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblSolidWaste	SolidWasteGenerationRate	480.70	0.00
tblSolidWaste	SolidWasteGenerationRate	66.43	0.00
tblSolidWaste	SolidWasteGenerationRate	159.29	0.00
tblSolidWaste	SolidWasteGenerationRate	6.79	0.00
tblSolidWaste	SolidWasteGenerationRate	31.75	0.00
tblSolidWaste	SolidWasteGenerationRate	79.13	0.00
tblSolidWaste	SolidWasteGenerationRate	72.05	0.00
tblSolidWaste	SolidWasteGenerationRate	472.20	0.00
tblTripsAndVMT	WorkerTripNumber	224.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	7.50	12.62
tblVehicleTrips	HS_TL	7.30	12.62
tblVehicleTrips	HW_TL	10.80	12.62
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	4.91	4.78
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	ST_TR	8.19	0.00

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	4.09	4.78
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	5.44	4.78
tblVehicleTrips	WD_TR	19.52	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblVehicleTrips	WD_TR	8.36	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	68,085,956.77	0.00
tblWater	IndoorWaterUseRate	1,481,742.47	0.00
tblWater	IndoorWaterUseRate	30,442,236.36	0.00
tblWater	IndoorWaterUseRate	1,450,215.71	0.00
tblWater	IndoorWaterUseRate	1,471,272.66	0.00
tblWater	IndoorWaterUseRate	3,648,625.43	0.00
tblWater	IndoorWaterUseRate	5,082,856.42	0.00
tblWater	IndoorWaterUseRate	116,166,125.00	0.00
tblWater	OutdoorWaterUseRate	42,923,755.36	0.00
tblWater	OutdoorWaterUseRate	3,810,194.92	0.00
tblWater	OutdoorWaterUseRate	18,658,144.86	0.00

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblWater	OutdoorWaterUseRate	888,841.88	0.00
tblWater	OutdoorWaterUseRate	163,474.74	0.00
tblWater	OutdoorWaterUseRate	2,300,220.38	0.00
tblWater	OutdoorWaterUseRate	3,115,299.10	0.00
tblWoodstoves	NumberCatalytic	52.25	0.00
tblWoodstoves	NumberCatalytic	2.80	0.00
tblWoodstoves	NumberNoncatalytic	52.25	0.00
tblWoodstoves	NumberNoncatalytic	2.80	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.0231	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000					
Mobile	3.2412	4.1206	37.1579	0.0831	8.6143	0.0603	8.6745	2.2981	0.0560	2.3540					
Waste						0.0000	0.0000		0.0000	0.0000					
Water						0.0000	0.0000		0.0000	0.0000					
Total	12.2644	4.2149	45.3426	0.0835	8.6143	0.1056	8.7198	2.2981	0.1013	2.3993					

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.0231	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	3.2412	4.1206	37.1579	0.0831	8.6143	0.0603	8.6745	2.2981	0.0560	2.3540						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	12.2644	4.2149	45.3426	0.0835	8.6143	0.1056	8.7198	2.2981	0.1013	2.3993						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	10/16/2027	10/18/2027	5	1	

Acres of Grading (Site Preparation Phase): 0

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 2,320,245; Residential Outdoor: 773,415; Non-Residential Indoor: 1,327,289; Non-Residential Outdoor: 442,430; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.2412	4.1206	37.1579	0.0831	8.6143	0.0603	8.6745	2.2981	0.0560	2.3540						
Unmitigated	3.2412	4.1206	37.1579	0.0831	8.6143	0.0603	8.6745	2.2981	0.0560	2.3540						

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	4,991.76	4,991.76	4991.76	22,930,530	22,930,530
Elementary School	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Government Office Building	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	4,991.76	4,991.76	4,991.76	22,930,530	22,930,530

4.3 Trip Type Information

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.62	12.62	12.62	40.20	19.20	40.60	100	0	0
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Elementary School	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
General Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Government Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Hotel	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Single Family Housing	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Strip Mall	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Unrefrigerated Warehouse-No Rail	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000							
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000							
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	8.02336e+006					
Elementary School	447654					
General Office Building	2.65819e+006					
Government Office Building	113296					
Hotel	1.2026e+006					
Single Family Housing	858319					
Strip Mall	935331					
Unrefrigerated Warehouse-No Rail	2.04956e+006					
Total						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated**

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	8.02336e+006					
Elementary School	447654					
General Office Building	2.65819e+006					
Government Office Building	113296					
Hotel	1.2026e+006					
Single Family Housing	858319					
Strip Mall	935331					
Unrefrigerated Warehouse-No Rail	2.04956e+006					
Total						

6.0 Area Detail**6.1 Mitigation Measures Area**

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.0231	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						
Unmitigated	9.0231	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8453					0.0000	0.0000		0.0000	0.0000						
Consumer Products	7.9307					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	0.2471	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						
Total	9.0231	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8453					0.0000	0.0000		0.0000	0.0000						
Consumer Products	7.9307					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	0.2471	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						
Total	9.0231	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e	
Category	tons/yr	MT/yr			
Mitigated					

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated					
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Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	0 / 0					
Elementary School	0 / 0					
General Office Building	0 / 0					
Government Office Building	0 / 0					
Hotel	0 / 0					
Single Family Housing	0 / 0					
Strip Mall	0 / 0					
Unrefrigerated Warehouse-No Rail	0 / 0					
Total						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	0 / 0					
Elementary School	0 / 0					
General Office Building	0 / 0					
Government Office Building	0 / 0					
Hotel	0 / 0					
Single Family Housing	0 / 0					
Strip Mall	0 / 0					
Unrefrigerated Warehouse-No Rail	0 / 0					
Total						

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated					
Unmitigated					

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	0					
Elementary School	0					
General Office Building	0					
Government Office Building	0					
Hotel	0					
Single Family Housing	0					
Strip Mall	0					
Unrefrigerated Warehouse-No Rail	0					
Total						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	0					
Elementary School	0					
General Office Building	0					
Government Office Building	0					
Hotel	0					
Single Family Housing	0					
Strip Mall	0					
Unrefrigerated Warehouse-No Rail	0					
Total						

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale General Plan - Buildout Year Operational Emissions****Los Angeles-Mojave Desert County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1,115.00	Dwelling Unit	362.01	2,007,000.00	3838
Apartments Mid Rise	20,885.00	Dwelling Unit	549.61	20,885,000.00	71918
Strip Mall	1,372.00	1000sqft	31.50	1,372,000.00	0
Hotel	174.00	Room	5.80	252,000.00	0
General Office Building	3,425.00	1000sqft	78.63	3,425,000.00	0
Unrefrigerated Warehouse-No Rail	10,047.00	1000sqft	230.65	10,047,000.00	0
Elementary School	1,022.00	1000sqft	23.46	1,022,000.00	0
Government Office Building	146.00	1000sqft	3.35	146,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2045
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - construction modeled separately

Off-road Equipment - construction modeled separately

Trips and VMT - construction modeled separately

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating - construction modeled separately

Vehicle Trips - See Assumptions

Woodstoves - No wood burning hearts or natural gas fireplaces. AVAQMD and GP Policys

Area Coating - AVAQMD regulations

Energy Use - 100% Electric development

Water And Wastewater - See Assumptions

Solid Waste - See Assumptins

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblConstructionPhase	NumDays	11,000.00	1.00
tblConstructionPhase	PhaseEndDate	3/12/2821	1/15/2779
tblEnergyUse	NT24E	3,054.10	4,924.61
tblEnergyUse	NT24E	1.59	1.19
tblEnergyUse	NT24E	4.62	4.73
tblEnergyUse	NT24E	4.62	4.73
tblEnergyUse	NT24E	2.89	4.08
tblEnergyUse	NT24E	6,155.97	8,026.48
tblEnergyUse	NT24E	3.23	3.46
tblEnergyUse	NT24E	1.34	1.35
tblEnergyUse	NT24NG	6,384.00	0.00

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	NT24NG	4.06	0.00
tblEnergyUse	NT24NG	6,384.00	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	53.81	2,011.81
tblEnergyUse	T24E	1.56	4.26
tblEnergyUse	T24E	4.11	7.02
tblEnergyUse	T24E	4.11	7.02
tblEnergyUse	T24E	2.28	8.06
tblEnergyUse	T24E	93.13	5,691.80
tblEnergyUse	T24E	3.58	3.91
tblEnergyUse	T24E	0.58	0.82
tblEnergyUse	T24NG	6,682.59	0.00
tblEnergyUse	T24NG	9.23	0.00
tblEnergyUse	T24NG	9.92	0.00
tblEnergyUse	T24NG	9.92	0.00
tblEnergyUse	T24NG	19.72	0.00
tblEnergyUse	T24NG	19,108.08	0.00
tblEnergyUse	T24NG	1.14	0.00
tblEnergyUse	T24NG	0.83	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	11,486.75	0.00
tblFireplaces	NumberGas	613.25	0.00
tblFireplaces	NumberNoFireplace	2,088.50	20,885.00
tblFireplaces	NumberNoFireplace	111.50	1,115.00
tblFireplaces	NumberWood	7,309.75	0.00
tblFireplaces	NumberWood	390.25	0.00
tblLandUse	LandUseSquareFeet	252,648.00	252,000.00
tblLandUse	Population	3,189.00	3,838.00
tblLandUse	Population	59,731.00	71,918.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblSolidWaste	SolidWasteGenerationRate	9,607.10	43,662.00
tblSolidWaste	SolidWasteGenerationRate	1,328.60	0.00
tblSolidWaste	SolidWasteGenerationRate	3,185.25	0.00
tblSolidWaste	SolidWasteGenerationRate	135.78	0.00
tblSolidWaste	SolidWasteGenerationRate	95.27	0.00
tblSolidWaste	SolidWasteGenerationRate	1,573.58	0.00
tblSolidWaste	SolidWasteGenerationRate	1,440.60	0.00
tblSolidWaste	SolidWasteGenerationRate	9,444.18	0.00
tblTripsAndVMT	WorkerTripNumber	4,355.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	7.50	12.62
tblVehicleTrips	HS_TL	7.30	12.62
tblVehicleTrips	HW_TL	10.80	12.62
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	4.91	4.78
tblVehicleTrips	ST_TR	2.21	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	8.19	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	4.09	4.78
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	5.44	4.78
tblVehicleTrips	WD_TR	19.52	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblVehicleTrips	WD_TR	8.36	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	AerobicPercent	87.46	97.54
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	2.46
tblWater	IndoorWaterUseRate	1,360,741,825.10	1,739,319,900.00
tblWater	IndoorWaterUseRate	29,634,849.39	0.00
tblWater	IndoorWaterUseRate	608,738,086.88	0.00
tblWater	IndoorWaterUseRate	29,004,314.14	0.00
tblWater	IndoorWaterUseRate	4,413,817.98	0.00
tblWater	IndoorWaterUseRate	72,646,738.57	0.00
tblWater	IndoorWaterUseRate	101,627,499.48	0.00
tblWater	IndoorWaterUseRate	2,323,368,750.00	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblWater	OutdoorWaterUseRate	857,858,976.70	170,818,662.00
tblWater	OutdoorWaterUseRate	76,203,898.43	0.00
tblWater	OutdoorWaterUseRate	373,097,537.12	0.00
tblWater	OutdoorWaterUseRate	17,776,837.70	0.00
tblWater	OutdoorWaterUseRate	490,424.22	0.00
tblWater	OutdoorWaterUseRate	45,799,030.84	0.00
tblWater	OutdoorWaterUseRate	62,287,822.26	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	1,044.25	0.00
tblWoodstoves	NumberCatalytic	55.75	0.00
tblWoodstoves	NumberNoncatalytic	1,044.25	0.00
tblWoodstoves	NumberNoncatalytic	55.75	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2779	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
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Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2779	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

		Highest	
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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	174.1984	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	52.7692	52.7040	551.9966	1.2188	172.3052	0.5827	172.8878	45.9942	0.5443	46.5385						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	226.9676	54.5826	714.7793	1.2275	172.3052	1.4891	173.7942	45.9942	1.4507	47.4449						

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	174.1984	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	52.7692	52.7040	551.9966	1.2188	172.3052	0.5827	172.8878	45.9942	0.5443	46.5385						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	226.9676	54.5826	714.7793	1.2275	172.3052	1.4891	173.7942	45.9942	1.4507	47.4449						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	1/13/2779	1/15/2779	5	1	

Acres of Grading (Site Preparation Phase): 0

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 46,356,300; Residential Outdoor: 15,452,100; Non-Residential Indoor: 24,396,000; Non-Residential Outdoor: 8,132,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2779

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	52.7692	52.7040	551.9966	1.2188	172.3052	0.5827	172.8878	45.9942	0.5443	46.5385						
Unmitigated	52.7692	52.7040	551.9966	1.2188	172.3052	0.5827	172.8878	45.9942	0.5443	46.5385						

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	99,746.76	99,746.76	99,746.76	458,204,696	458,204,696
Elementary School	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Government Office Building	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	99,746.76	99,746.76	99,746.76	458,204,696	458,204,696

4.3 Trip Type Information

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.62	12.62	12.62	40.20	19.20	40.60	100	0	0
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Elementary School	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
General Office Building	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Government Office Building	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Hotel	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Single Family Housing	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Strip Mall	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Unrefrigerated Warehouse-No Rail	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000							
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000							
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	tons/yr										MT/yr						
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	tons/yr										MT/yr						
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000							

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	1.60352e+008					
Elementary School	8.21688e+006					
General Office Building	5.3156e+007					
Government Office Building	2.26592e+006					
Hotel	3.59856e+006					
Single Family Housing	1.70897e+007					
Strip Mall	1.87004e+007					
Unrefrigerated Warehouse-No Rail	4.09918e+007					
Total						

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	1.60352e+008					
Elementary School	8.21688e+006					
General Office Building	5.3156e+007					
Government Office Building	2.26592e+006					
Hotel	3.59856e+006					
Single Family Housing	1.70897e+007					
Strip Mall	1.87004e+007					
Unrefrigerated Warehouse-No Rail	4.09918e+007					
Total						

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	174.1984	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						
Unmitigated	174.1984	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	16.3969					0.0000	0.0000		0.0000	0.0000						
Consumer Products	152.9238					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	4.8778	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						
Total	174.1984	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	16.3969					0.0000	0.0000		0.0000	0.0000						
Consumer Products	152.9238					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	4.8778	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						
Total	174.1984	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e	
Category	tons/yr	MT/yr			
Mitigated					

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated					
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Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	1739.32 / 170.819					
Elementary School	0 / 0					
General Office Building	0 / 0					
Government Office Building	0 / 0					
Hotel	0 / 0					
Single Family Housing	0 / 0					
Strip Mall	0 / 0					
Unrefrigerated Warehouse-No Rail	0 / 0					
Total						

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	1739.32 / 170.819					
Elementary School	0 / 0					
General Office Building	0 / 0					
Government Office Building	0 / 0					
Hotel	0 / 0					
Single Family Housing	0 / 0					
Strip Mall	0 / 0					
Unrefrigerated Warehouse-No Rail	0 / 0					
Total						

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated					
Unmitigated					

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	43662					
Elementary School	0					
General Office Building	0					
Government Office Building	0					
Hotel	0					
Single Family Housing	0					
Strip Mall	0					
Unrefrigerated Warehouse-No Rail	0					
Total						

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	43662					
Elementary School	0					
General Office Building	0					
Government Office Building	0					
Hotel	0					
Single Family Housing	0					
Strip Mall	0					
Unrefrigerated Warehouse-No Rail	0					
Total						

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - Retail/Restaurant Construction Only****Los Angeles-Mojave Desert County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	68.62	1000sqft	1.58	68,623.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	6.26	0.00
tblEnergyUse	NT24E	3.23	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	T24E	3.58	0.00
tblEnergyUse	T24NG	1.14	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	68,620.00	68,623.00
tblSolidWaste	SolidWasteGenerationRate	72.05	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblWater	IndoorWaterUseRate	5,082,856.42	0.00
tblWater	OutdoorWaterUseRate	3,115,299.10	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Year	tons/yr										MT/yr					
	2022	0.4377	1.5835	1.5790	3.0700e-003	0.0776	0.0718	0.1493	0.0200	0.0689	0.0889	0.0000	261.5421	261.5421	0.0419	5.2000e-003
Maximum	0.4377	1.5835	1.5790	3.0700e-003	0.0776	0.0718	0.1493	0.0200	0.0689	0.0889	0.0000	261.5421	261.5421	0.0419	5.2000e-003	264.1382

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2623	0.1521	0.7804	1.6400e-003	0.0512	2.7100e-003	0.0539	0.0135	2.6700e-003	0.0161	0.0000	148.3832	148.3832	0.0325	5.2000e-003	150.7428
Maximum	0.2623	0.1521	0.7804	1.6400e-003	0.0512	2.7100e-003	0.0539	0.0135	2.6700e-003	0.0161	0.0000	148.3832	148.3832	0.0325	5.2000e-003	150.7428

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	40.08	90.39	50.58	46.58	34.00	96.22	63.90	32.85	96.13	81.88	0.00	43.27	43.27	22.57	0.00	42.93

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
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Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/5/2022	11/11/2022	5	200	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	2/5/2022	2/18/2022	5	10
5	Architectural Coating	Architectural Coating	11/4/2022	11/17/2022	5	10

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 102,935; Non-Residential Outdoor: 34,312; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	312.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	22.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0338	0.0000	0.0338	5.1100e-003	0.0000	5.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1662	0.1396	2.4000e-004		8.3800e-003	8.3800e-003		7.8300e-003	7.8300e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2120
Total	0.0169	0.1662	0.1396	2.4000e-004	0.0338	8.3800e-003	0.0422	5.1100e-003	7.8300e-003	0.0129	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2120

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.2000e-004	0.0276	6.1500e-003	1.0000e-004	2.6800e-003	1.9000e-004	2.8800e-003	7.4000e-004	1.9000e-004	9.2000e-004	0.0000	9.6356	9.6356	5.1000e-004	1.5300e-003	10.1040
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	1.0900e-003	0.0279	9.8800e-003	1.1000e-004	3.7300e-003	2.0000e-004	3.9300e-003	1.0200e-003	2.0000e-004	1.2000e-003	0.0000	10.5082	10.5082	5.4000e-004	1.5600e-003	10.9848

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0152	0.0000	0.0152	2.3000e-003	0.0000	2.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0122	0.1472	2.4000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2119
Total	2.8100e-003	0.0122	0.1472	2.4000e-004	0.0152	3.7000e-004	0.0156	2.3000e-003	3.7000e-004	2.6700e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2119

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.2000e-004	0.0276	6.1500e-003	1.0000e-004	2.6800e-003	1.9000e-004	2.8800e-003	7.4000e-004	1.9000e-004	9.2000e-004	0.0000	9.6356	9.6356	5.1000e-004	1.5300e-003	10.1040
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	1.0900e-003	0.0279	9.8800e-003	1.1000e-004	3.7300e-003	2.0000e-004	3.9300e-003	1.0200e-003	2.0000e-004	1.2000e-003	0.0000	10.5082	10.5082	5.4000e-004	1.5600e-003	10.9848

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0800e-003	0.0340	0.0184	4.0000e-005		1.4800e-003	1.4800e-003		1.3700e-003	1.3700e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	3.0800e-003	0.0340	0.0184	4.0000e-005	0.0142	1.4800e-003	0.0157	6.8500e-003	1.3700e-003	8.2200e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.3700e-003	0.0000	6.3700e-003	3.0800e-003	0.0000	3.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0000e-004	2.1900e-003	0.0218	4.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	5.0000e-004	2.1900e-003	0.0218	4.0000e-005	6.3700e-003	7.0000e-005	6.4400e-003	3.0800e-003	7.0000e-005	3.1500e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355

3.4 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1649	1.2503	1.2726	2.2100e-003		0.0589	0.0589		0.0569	0.0569	0.0000	181.5769	181.5769	0.0316	0.0000	182.3675
Total	0.1649	1.2503	1.2726	2.2100e-003		0.0589	0.0589		0.0569	0.0569	0.0000	181.5769	181.5769	0.0316	0.0000	182.3675

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2300e-003	0.0591	0.0193	2.3000e-004	7.3300e-003	5.4000e-004	7.8800e-003	2.1200e-003	5.2000e-004	2.6400e-003	0.0000	22.1261	22.1261	7.4000e-004	3.1900e-003	23.0952
Worker	6.2700e-003	4.9100e-003	0.0631	1.6000e-004	0.0177	1.2000e-004	0.0178	4.7100e-003	1.1000e-004	4.8200e-003	0.0000	14.7665	14.7665	4.9000e-004	4.3000e-004	14.9071
Total	8.5000e-003	0.0640	0.0823	3.9000e-004	0.0251	6.6000e-004	0.0257	6.8300e-003	6.3000e-004	7.4600e-003	0.0000	36.8926	36.8926	1.2300e-003	3.6200e-003	38.0024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5800e-003	0.0415	0.4577	7.8000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	68.5899	68.5899	0.0222	0.0000	69.1445
Total	9.5800e-003	0.0415	0.4577	7.8000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	68.5899	68.5899	0.0222	0.0000	69.1445

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2300e-003	0.0591	0.0193	2.3000e-004	7.3300e-003	5.4000e-004	7.8800e-003	2.1200e-003	5.2000e-004	2.6400e-003	0.0000	22.1261	22.1261	7.4000e-004	3.1900e-003	23.0952
Worker	6.2700e-003	4.9100e-003	0.0631	1.6000e-004	0.0177	1.2000e-004	0.0178	4.7100e-003	1.1000e-004	4.8200e-003	0.0000	14.7665	14.7665	4.9000e-004	4.3000e-004	14.9071
Total	8.5000e-003	0.0640	0.0823	3.9000e-004	0.0251	6.6000e-004	0.0257	6.8300e-003	6.3000e-004	7.4600e-003	0.0000	36.8926	36.8926	1.2300e-003	3.6200e-003	38.0024

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0000e-004	3.4600e-003	0.0493	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7130	5.7130	1.8500e-003	0.0000	5.7591
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.0000e-004	3.4600e-003	0.0493	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7130	5.7130	1.8500e-003	0.0000	5.7591

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2386					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	0.2396	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2386					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	0.2387	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
-------------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Strip Mall	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Strip Mall	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Strip Mall	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Strip Mall	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Strip Mall	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - Retail/Restaurant Construction Only**

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	68.62	1000sqft	1.58	68,623.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	6.26	0.00
tblEnergyUse	NT24E	3.23	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	T24E	3.58	0.00
tblEnergyUse	T24NG	1.14	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	68,620.00	68,623.00
tblSolidWaste	SolidWasteGenerationRate	72.05	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblWater	IndoorWaterUseRate	5,082,856.42	0.00
tblWater	OutdoorWaterUseRate	3,115,299.10	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Year	lb/day										lb/day					
2022	49.6617	19.9089	22.7778	0.0405	7.1647	0.9436	7.9076	3.4465	0.8963	4.1299	0.0000	3,812.1031	3,812.1031	0.7764	0.1711	3,844.0613
Maximum	49.6617	19.9089	22.7778	0.0405	7.1647	0.9436	7.9076	3.4465	0.8963	4.1299	0.0000	3,812.1031	3,812.1031	0.7764	0.1711	3,844.0613

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	47.9340	3.8637	15.7214	0.0348	3.2693	0.0576	3.3035	1.5629	0.0567	1.5970	0.0000	3,485.4598	3,485.4598	0.6684	0.1711	3,552.7363
Maximum	47.9340	3.8637	15.7214	0.0348	3.2693	0.0576	3.3035	1.5629	0.0567	1.5970	0.0000	3,485.4598	3,485.4598	0.6684	0.1711	3,552.7363

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	3.48	80.59	30.98	14.10	54.37	93.89	58.22	54.65	93.67	61.33	0.00	8.57	8.57	13.91	0.00	7.58

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.5000e-004	6.0000e-005	7.0000e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005	0.0000	0.0160

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.5000e-004	6.0000e-005	7.0000e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005	0.0000	0.0160

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/5/2022	11/11/2022	5	200	
4	Paving	Paving	2/5/2022	2/18/2022	5	10	
5	Architectural Coating	Architectural Coating	11/4/2022	11/17/2022	5	10	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 4****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 102,935; Non-Residential Outdoor: 34,312; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	312.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	22.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Use Alternative Fuel for Construction Equipment
- Use Cleaner Engines for Construction Equipment
- Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3775	0.0000	3.3775	0.5114	0.0000	0.5114			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	1.6889	16.6217	13.9605	0.0241	3.3775	0.8379	4.2154	0.5114	0.7829	1.2943		2,323.4168	2,323.4168	0.5921		2,338.2191

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0727	2.6200	0.6109	9.6900e-003	0.2731	0.0195	0.2925	0.0749	0.0186	0.0935		1,062.0099	1,062.0099	0.0564	0.1685	1,113.6336
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.1104	2.6458	1.0029	0.0107	0.3799	0.0202	0.4000	0.1032	0.0193	0.1225		1,162.0430	1,162.0430	0.0595	0.1711	1,214.5173

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5199	0.0000	1.5199	0.2301	0.0000	0.2301			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	0.2811	1.2179	14.7184	0.0241	1.5199	0.0375	1.5573	0.2301	0.0375	0.2676	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0727	2.6200	0.6109	9.6900e-003	0.2731	0.0195	0.2925	0.0749	0.0186	0.0935		1,062.0099	1,062.0099	0.0564	0.1685	1,113.6336
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.1104	2.6458	1.0029	0.0107	0.3799	0.0202	0.4000	0.1032	0.0193	0.1225		1,162.0430	1,162.0430	0.0595	0.1711	1,214.5173

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	1.5403	16.9836	9.2202	0.0206	7.0826	0.7423	7.8249	3.4247	0.6829	4.1076		1,995.4825	1,995.4825	0.6454		2,011.6169

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	0.2522	1.0927	10.9071	0.0206	3.1872	0.0336	3.2208	1.5411	0.0336	1.5748	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0225	0.5627	0.1899	2.2700e-003	0.0745	5.4200e-003	0.0800	0.0215	5.1900e-003	0.0266		243.8616	243.8616	8.1500e-003	0.0351	254.5325
Worker	0.0638	0.0436	0.6635	1.6600e-003	0.1807	1.1900e-003	0.1819	0.0479	1.0900e-003	0.0490		169.2867	169.2867	5.2400e-003	4.3900e-003	170.7263
Total	0.0863	0.6063	0.8533	3.9300e-003	0.2553	6.6100e-003	0.2619	0.0694	6.2800e-003	0.0757		413.1483	413.1483	0.0134	0.0395	425.2588

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0225	0.5627	0.1899	2.2700e-003	0.0745	5.4200e-003	0.0800	0.0215	5.1900e-003	0.0266		243.8616	243.8616	8.1500e-003	0.0351	254.5325
Worker	0.0638	0.0436	0.6635	1.6600e-003	0.1807	1.1900e-003	0.1819	0.0479	1.0900e-003	0.0490		169.2867	169.2867	5.2400e-003	4.3900e-003	170.7263
Total	0.0863	0.6063	0.8533	3.9300e-003	0.2553	6.6100e-003	0.2619	0.0694	6.2800e-003	0.0757		413.1483	413.1483	0.0134	0.0395	425.2588

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.7106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	47.9151	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.7106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	47.7403	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Strip Mall	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Unmitigated	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Total	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Total	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - Retail/Restaurant Construction Only****Los Angeles-Mojave Desert County, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	68.62	1000sqft	1.58	68,623.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	6.26	0.00
tblEnergyUse	NT24E	3.23	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	T24E	3.58	0.00
tblEnergyUse	T24NG	1.14	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	68,620.00	68,623.00
tblSolidWaste	SolidWasteGenerationRate	72.05	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblWater	IndoorWaterUseRate	5,082,856.42	0.00
tblWater	OutdoorWaterUseRate	3,115,299.10	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Year	lb/day										lb/day					
2022	49.6657	19.9393	22.7094	0.0404	7.1647	0.9437	7.9076	3.4465	0.8963	4.1299	0.0000	3,798.0302	3,798.0302	0.7766	0.1713	3,830.1493
Maximum	49.6657	19.9393	22.7094	0.0404	7.1647	0.9437	7.9076	3.4465	0.8963	4.1299	0.0000	3,798.0302	3,798.0302	0.7766	0.1713	3,830.1493

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	47.9379	3.9727	15.7043	0.0348	3.2693	0.0577	3.3035	1.5629	0.0568	1.5970	0.0000	3,480.5118	3,480.5118	0.6686	0.1713	3,547.8574
Maximum	47.9379	3.9727	15.7043	0.0348	3.2693	0.0577	3.3035	1.5629	0.0568	1.5970	0.0000	3,480.5118	3,480.5118	0.6686	0.1713	3,547.8574

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	3.48	80.08	30.85	13.92	54.37	93.89	58.22	54.65	93.67	61.33	0.00	8.36	8.36	13.91	0.00	7.37

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.5000e-004	6.0000e-005	7.0000e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005	0.0000	0.0160

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.5000e-004	6.0000e-005	7.0000e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005	0.0000	0.0160

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/5/2022	11/11/2022	5	200	
4	Paving	Paving	2/5/2022	2/18/2022	5	10	
5	Architectural Coating	Architectural Coating	11/4/2022	11/17/2022	5	10	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 4****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 102,935; Non-Residential Outdoor: 34,312; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	312.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	22.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3775	0.0000	3.3775	0.5114	0.0000	0.5114			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	1.6889	16.6217	13.9605	0.0241	3.3775	0.8379	4.2154	0.5114	0.7829	1.2943		2,323.4168	2,323.4168	0.5921		2,338.2191

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0709	2.7263	0.6216	9.7000e-003	0.2731	0.0195	0.2926	0.0749	0.0187	0.0935		1,062.3213	1,062.3213	0.0563	0.1686	1,113.9590
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.1107	2.7548	0.9859	0.0106	0.3799	0.0202	0.4001	0.1032	0.0193	0.1225		1,157.0950	1,157.0950	0.0595	0.1713	1,209.6384

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5199	0.0000	1.5199	0.2301	0.0000	0.2301			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	0.2811	1.2179	14.7184	0.0241	1.5199	0.0375	1.5573	0.2301	0.0375	0.2676	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0709	2.7263	0.6216	9.7000e-003	0.2731	0.0195	0.2926	0.0749	0.0187	0.0935		1,062.3213	1,062.3213	0.0563	0.1686	1,113.9590
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.1107	2.7548	0.9859	0.0106	0.3799	0.0202	0.4001	0.1032	0.0193	0.1225		1,157.0950	1,157.0950	0.0595	0.1713	1,209.6384

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	1.5403	16.9836	9.2202	0.0206	7.0826	0.7423	7.8249	3.4247	0.6829	4.1076		1,995.4825	1,995.4825	0.6454		2,011.6169

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	0.2522	1.0927	10.9071	0.0206	3.1872	0.0336	3.2208	1.5411	0.0336	1.5748	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0222	0.5858	0.1962	2.2700e-003	0.0745	5.4400e-003	0.0800	0.0215	5.2100e-003	0.0267		243.9485	243.9485	8.1200e-003	0.0352	254.6320
Worker	0.0674	0.0482	0.6165	1.5800e-003	0.1807	1.1900e-003	0.1819	0.0479	1.0900e-003	0.0490		160.3863	160.3863	5.4000e-003	4.6900e-003	161.9190
Total	0.0896	0.6340	0.8127	3.8500e-003	0.2553	6.6300e-003	0.2619	0.0694	6.3000e-003	0.0757		404.3348	404.3348	0.0135	0.0399	416.5510

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0222	0.5858	0.1962	2.2700e-003	0.0745	5.4400e-003	0.0800	0.0215	5.2100e-003	0.0267		243.9485	243.9485	8.1200e-003	0.0352	254.6320
Worker	0.0674	0.0482	0.6165	1.5800e-003	0.1807	1.1900e-003	0.1819	0.0479	1.0900e-003	0.0490		160.3863	160.3863	5.4000e-003	4.6900e-003	161.9190
Total	0.0896	0.6340	0.8127	3.8500e-003	0.2553	6.6300e-003	0.2619	0.0694	6.3000e-003	0.0757		404.3348	404.3348	0.0135	0.0399	416.5510

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.7106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	47.9151	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.7106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	47.7403	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Strip Mall	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Unmitigated	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Total	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Total	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - School
Los Angeles-Mojave Desert County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	51.10	1000sqft	1.17	51,102.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition -

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	12/8/2022	11/14/2022
tblConstructionPhase	PhaseEndDate	11/24/2022	2/17/2022
tblConstructionPhase	PhaseStartDate	11/25/2022	11/1/2022
tblConstructionPhase	PhaseStartDate	11/11/2022	2/4/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.59	0.00
tblEnergyUse	NT24E	1.59	0.00
tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	T24E	1.56	0.00
tblEnergyUse	T24NG	9.23	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	66.43	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblWater	IndoorWaterUseRate	1,481,742.47	0.00
tblWater	OutdoorWaterUseRate	3,810,194.92	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	tons/yr										MT/yr					
2022	0.3758	1.5601	1.5693	2.9800e-003	0.0655	0.0716	0.1370	0.0177	0.0687	0.0865	0.0000	252.3658	252.3658	0.0416	3.9100e-003	254.5711
Maximum	0.3758	1.5601	1.5693	2.9800e-003	0.0655	0.0716	0.1370	0.0177	0.0687	0.0865	0.0000	252.3658	252.3658	0.0416	3.9100e-003	254.5711

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2003	0.1287	0.7707	1.5500e-003	0.0438	2.5100e-003	0.0463	0.0119	2.4800e-003	0.0144	0.0000	139.2069	139.2069	0.0321	3.9100e-003	141.1757
Maximum	0.2003	0.1287	0.7707	1.5500e-003	0.0438	2.5100e-003	0.0463	0.0119	2.4800e-003	0.0144	0.0000	139.2069	139.2069	0.0321	3.9100e-003	141.1757

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	46.70	91.75	50.89	47.99	33.03	96.49	66.18	33.03	96.39	83.39	0.00	44.84	44.84	22.77	0.00	44.54

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/4/2022	11/10/2022	5	200	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	2/4/2022	2/17/2022	5	10
5	Architectural Coating	Architectural Coating	11/1/2022	11/14/2022	5	10

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 76,653; Non-Residential Outdoor: 25,551; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	21.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	232.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0252	0.0000	0.0252	3.8100e-003	0.0000	3.8100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1662	0.1396	2.4000e-004		8.3800e-003	8.3800e-003		7.8300e-003	7.8300e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2120
Total	0.0169	0.1662	0.1396	2.4000e-004	0.0252	8.3800e-003	0.0335	3.8100e-003	7.8300e-003	0.0116	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2120

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0205	4.5700e-003	7.0000e-005	2.0000e-003	1.4000e-004	2.1400e-003	5.5000e-004	1.4000e-004	6.9000e-004	0.0000	7.1649	7.1649	3.8000e-004	1.1400e-003	7.5132
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	9.0000e-004	0.0208	8.3000e-003	8.0000e-005	3.0500e-003	1.5000e-004	3.1900e-003	8.3000e-004	1.5000e-004	9.7000e-004	0.0000	8.0375	8.0375	4.1000e-004	1.1700e-003	8.3941

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0113	0.0000	0.0113	1.7100e-003	0.0000	1.7100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0122	0.1472	2.4000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2119
Total	2.8100e-003	0.0122	0.1472	2.4000e-004	0.0113	3.7000e-004	0.0117	1.7100e-003	3.7000e-004	2.0800e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2119

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0205	4.5700e-003	7.0000e-005	2.0000e-003	1.4000e-004	2.1400e-003	5.5000e-004	1.4000e-004	6.9000e-004	0.0000	7.1649	7.1649	3.8000e-004	1.1400e-003	7.5132
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	9.0000e-004	0.0208	8.3000e-003	8.0000e-005	3.0500e-003	1.5000e-004	3.1900e-003	8.3000e-004	1.5000e-004	9.7000e-004	0.0000	8.0375	8.0375	4.1000e-004	1.1700e-003	8.3941

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0800e-003	0.0340	0.0184	4.0000e-005		1.4800e-003	1.4800e-003		1.3700e-003	1.3700e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	3.0800e-003	0.0340	0.0184	4.0000e-005	0.0142	1.4800e-003	0.0157	6.8500e-003	1.3700e-003	8.2200e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.3700e-003	0.0000	6.3700e-003	3.0800e-003	0.0000	3.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0000e-004	2.1900e-003	0.0218	4.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	5.0000e-004	2.1900e-003	0.0218	4.0000e-005	6.3700e-003	7.0000e-005	6.4400e-003	3.0800e-003	7.0000e-005	3.1500e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355

3.4 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1649	1.2503	1.2726	2.2100e-003		0.0589	0.0589		0.0569	0.0569	0.0000	181.5769	181.5769	0.0316	0.0000	182.3675
Total	0.1649	1.2503	1.2726	2.2100e-003		0.0589	0.0589		0.0569	0.0569	0.0000	181.5769	181.5769	0.0316	0.0000	182.3675

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6200e-003	0.0430	0.0140	1.7000e-004	5.3300e-003	3.9000e-004	5.7300e-003	1.5400e-003	3.8000e-004	1.9200e-003	0.0000	16.0917	16.0917	5.4000e-004	2.3200e-003	16.7965
Worker	5.9800e-003	4.6900e-003	0.0602	1.5000e-004	0.0169	1.1000e-004	0.0170	4.4900e-003	1.0000e-004	4.6000e-003	0.0000	14.0953	14.0953	4.7000e-004	4.1000e-004	14.2295
Total	7.6000e-003	0.0477	0.0742	3.2000e-004	0.0222	5.0000e-004	0.0228	6.0300e-003	4.8000e-004	6.5200e-003	0.0000	30.1870	30.1870	1.0100e-003	2.7300e-003	31.0261

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5800e-003	0.0415	0.4577	7.8000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	68.5899	68.5899	0.0222	0.0000	69.1445
Total	9.5800e-003	0.0415	0.4577	7.8000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	68.5899	68.5899	0.0222	0.0000	69.1445

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6200e-003	0.0430	0.0140	1.7000e-004	5.3300e-003	3.9000e-004	5.7300e-003	1.5400e-003	3.8000e-004	1.9200e-003	0.0000	16.0917	16.0917	5.4000e-004	2.3200e-003	16.7965
Worker	5.9800e-003	4.6900e-003	0.0602	1.5000e-004	0.0169	1.1000e-004	0.0170	4.4900e-003	1.0000e-004	4.6000e-003	0.0000	14.0953	14.0953	4.7000e-004	4.1000e-004	14.2295
Total	7.6000e-003	0.0477	0.0742	3.2000e-004	0.0222	5.0000e-004	0.0228	6.0300e-003	4.8000e-004	6.5200e-003	0.0000	30.1870	30.1870	1.0100e-003	2.7300e-003	31.0261

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0000e-004	3.4600e-003	0.0493	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7130	5.7130	1.8500e-003	0.0000	5.7591
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.0000e-004	3.4600e-003	0.0493	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7130	5.7130	1.8500e-003	0.0000	5.7591

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1776					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	0.1787	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1776					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	0.1778	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787

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Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Elementary School	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

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Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Elementary School	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Elementary School	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

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Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Elementary School	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Elementary School	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Elementary School	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - School****Los Angeles-Mojave Desert County, Summer****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	51.10	1000sqft	1.17	51,102.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition -

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	12/8/2022	11/14/2022
tblConstructionPhase	PhaseEndDate	11/24/2022	2/17/2022
tblConstructionPhase	PhaseStartDate	11/25/2022	11/1/2022
tblConstructionPhase	PhaseStartDate	11/11/2022	2/4/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.59	0.00
tblEnergyUse	NT24E	1.59	0.00
tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	T24E	1.56	0.00
tblEnergyUse	T24NG	9.23	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	66.43	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblWater	IndoorWaterUseRate	1,481,742.47	0.00
tblWater	OutdoorWaterUseRate	3,810,194.92	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	lb/day										lb/day					
2022	37.4707	19.7534	22.6959	0.0398	7.1647	0.9421	7.9076	3.4465	0.8948	4.1299	0.0000	3,737.9005	3,737.9005	0.7739	0.1279	3,766.8831
Maximum	37.4707	19.7534	22.6959	0.0398	7.1647	0.9421	7.9076	3.4465	0.8948	4.1299	0.0000	3,737.9005	3,737.9005	0.7739	0.1279	3,766.8831

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	35.7430	3.1919	15.5918	0.0323	3.2693	0.0527	3.3035	1.5629	0.0520	1.5970	0.0000	3,213.1496	3,213.1496	0.6659	0.1279	3,267.1893
Maximum	35.7430	3.1919	15.5918	0.0323	3.2693	0.0527	3.3035	1.5629	0.0520	1.5970	0.0000	3,213.1496	3,213.1496	0.6659	0.1279	3,267.1893

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	4.61	83.84	31.30	18.84	54.37	94.41	58.22	54.65	94.19	61.33	0.00	14.04	14.04	13.96	0.00	13.27

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.8000e-004	5.0000e-005	5.2200e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005	0.0000	0.0119

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.8000e-004	5.0000e-005	5.2200e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005	0.0000	0.0119

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/4/2022	11/10/2022	5	200	
4	Paving	Paving	2/4/2022	2/17/2022	5	10	
5	Architectural Coating	Architectural Coating	11/1/2022	11/14/2022	5	10	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 4****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 76,653; Non-Residential Outdoor: 25,551; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Graders	1	8.00	187	0.41
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	21.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	232.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5151	0.0000	2.5151	0.3808	0.0000	0.3808			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	1.6889	16.6217	13.9605	0.0241	2.5151	0.8379	3.3530	0.3808	0.7829	1.1637		2,323.4168	2,323.4168	0.5921		2,338.2191

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0540	1.9482	0.4543	7.2100e-003	0.2030	0.0145	0.2175	0.0557	0.0139	0.0695		789.6997	789.6997	0.0419	0.1253	828.0865
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.0918	1.9740	0.8463	8.1900e-003	0.3098	0.0152	0.3250	0.0840	0.0145	0.0985		889.7328	889.7328	0.0450	0.1279	928.9702

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1318	0.0000	1.1318	0.1714	0.0000	0.1714			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	0.2811	1.2179	14.7184	0.0241	1.1318	0.0375	1.1693	0.1714	0.0375	0.2089	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0540	1.9482	0.4543	7.2100e-003	0.2030	0.0145	0.2175	0.0557	0.0139	0.0695		789.6997	789.6997	0.0419	0.1253	828.0865
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.0918	1.9740	0.8463	8.1900e-003	0.3098	0.0152	0.3250	0.0840	0.0145	0.0985		889.7328	889.7328	0.0450	0.1279	928.9702

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	1.5403	16.9836	9.2202	0.0206	7.0826	0.7423	7.8249	3.4247	0.6829	4.1076		1,995.4825	1,995.4825	0.6454		2,011.6169

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	0.2522	1.0927	10.9071	0.0206	3.1872	0.0336	3.2208	1.5411	0.0336	1.5748	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0163	0.4092	0.1381	1.6500e-003	0.0542	3.9400e-003	0.0581	0.0156	3.7700e-003	0.0194		177.3539	177.3539	5.9300e-003	0.0256	185.1145
Worker	0.0609	0.0416	0.6333	1.5900e-003	0.1725	1.1300e-003	0.1736	0.0458	1.0400e-003	0.0468		161.5919	161.5919	5.0100e-003	4.1900e-003	162.9660
Total	0.0773	0.4509	0.7714	3.2400e-003	0.2267	5.0700e-003	0.2318	0.0614	4.8100e-003	0.0662		338.9458	338.9458	0.0109	0.0297	348.0805

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0163	0.4092	0.1381	1.6500e-003	0.0542	3.9400e-003	0.0581	0.0156	3.7700e-003	0.0194		177.3539	177.3539	5.9300e-003	0.0256	185.1145
Worker	0.0609	0.0416	0.6333	1.5900e-003	0.1725	1.1300e-003	0.1736	0.0458	1.0400e-003	0.0468		161.5919	161.5919	5.0100e-003	4.1900e-003	162.9660
Total	0.0773	0.4509	0.7714	3.2400e-003	0.2267	5.0700e-003	0.2318	0.0614	4.8100e-003	0.0662		338.9458	338.9458	0.0109	0.0297	348.0805

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.5287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	35.7332	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.5287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	35.5584	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Elementary School	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Unmitigated	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Total	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Total	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - School
Los Angeles-Mojave Desert County, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	51.10	1000sqft	1.17	51,102.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition -

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	12/8/2022	11/14/2022
tblConstructionPhase	PhaseEndDate	11/24/2022	2/17/2022
tblConstructionPhase	PhaseStartDate	11/25/2022	11/1/2022
tblConstructionPhase	PhaseStartDate	11/11/2022	2/4/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.59	0.00
tblEnergyUse	NT24E	1.59	0.00
tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	T24E	1.56	0.00
tblEnergyUse	T24NG	9.23	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	66.43	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblWater	IndoorWaterUseRate	1,481,742.47	0.00
tblWater	OutdoorWaterUseRate	3,810,194.92	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	lb/day										lb/day					
2022	37.4746	19.7773	22.6279	0.0397	7.1647	0.9421	7.9076	3.4465	0.8948	4.1299	0.0000	3,724.2085	3,724.2085	0.7741	0.1281	3,753.3443
Maximum	37.4746	19.7773	22.6279	0.0397	7.1647	0.9421	7.9076	3.4465	0.8948	4.1299	0.0000	3,724.2085	3,724.2085	0.7741	0.1281	3,753.3443

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	35.7469	3.2737	15.5449	0.0323	3.2693	0.0527	3.3035	1.5629	0.0520	1.5970	0.0000	3,208.1217	3,208.1217	0.6661	0.1281	3,262.2269
Maximum	35.7469	3.2737	15.5449	0.0323	3.2693	0.0527	3.3035	1.5629	0.0520	1.5970	0.0000	3,208.1217	3,208.1217	0.6661	0.1281	3,262.2269

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	4.61	83.45	31.30	18.68	54.37	94.41	58.22	54.65	94.19	61.33	0.00	13.86	13.86	13.95	0.00	13.08

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.8000e-004	5.0000e-005	5.2200e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005	0.0000	0.0119

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.8000e-004	5.0000e-005	5.2200e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005	0.0000	0.0119

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/4/2022	11/10/2022	5	200	
4	Paving	Paving	2/4/2022	2/17/2022	5	10	
5	Architectural Coating	Architectural Coating	11/1/2022	11/14/2022	5	10	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 4****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 76,653; Non-Residential Outdoor: 25,551; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Graders	1	8.00	187	0.41
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	21.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	232.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5151	0.0000	2.5151	0.3808	0.0000	0.3808			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	1.6889	16.6217	13.9605	0.0241	2.5151	0.8379	3.3530	0.3808	0.7829	1.1637		2,323.4168	2,323.4168	0.5921		2,338.2191

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0528	2.0273	0.4622	7.2100e-003	0.2030	0.0145	0.2176	0.0557	0.0139	0.0695		789.9312	789.9312	0.0419	0.1253	828.3285
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.0926	2.0557	0.8265	8.1400e-003	0.3098	0.0152	0.3250	0.0840	0.0145	0.0985		884.7049	884.7049	0.0451	0.1281	924.0079

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1318	0.0000	1.1318	0.1714	0.0000	0.1714			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	0.2811	1.2179	14.7184	0.0241	1.1318	0.0375	1.1693	0.1714	0.0375	0.2089	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0528	2.0273	0.4622	7.2100e-003	0.2030	0.0145	0.2176	0.0557	0.0139	0.0695		789.9312	789.9312	0.0419	0.1253	828.3285
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.0926	2.0557	0.8265	8.1400e-003	0.3098	0.0152	0.3250	0.0840	0.0145	0.0985		884.7049	884.7049	0.0451	0.1281	924.0079

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	1.5403	16.9836	9.2202	0.0206	7.0826	0.7423	7.8249	3.4247	0.6829	4.1076		1,995.4825	1,995.4825	0.6454		2,011.6169

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	0.2522	1.0927	10.9071	0.0206	3.1872	0.0336	3.2208	1.5411	0.0336	1.5748	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0162	0.4261	0.1427	1.6500e-003	0.0542	3.9600e-003	0.0582	0.0156	3.7900e-003	0.0194		177.4171	177.4171	5.9100e-003	0.0256	185.1869
Worker	0.0643	0.0460	0.5885	1.5000e-003	0.1725	1.1300e-003	0.1736	0.0458	1.0400e-003	0.0468		153.0960	153.0960	5.1500e-003	4.4800e-003	154.5590
Total	0.0805	0.4720	0.7312	3.1500e-003	0.2267	5.0900e-003	0.2318	0.0614	4.8300e-003	0.0662		330.5131	330.5131	0.0111	0.0301	339.7460

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0162	0.4261	0.1427	1.6500e-003	0.0542	3.9600e-003	0.0582	0.0156	3.7900e-003	0.0194		177.4171	177.4171	5.9100e-003	0.0256	185.1869
Worker	0.0643	0.0460	0.5885	1.5000e-003	0.1725	1.1300e-003	0.1736	0.0458	1.0400e-003	0.0468		153.0960	153.0960	5.1500e-003	4.4800e-003	154.5590
Total	0.0805	0.4720	0.7312	3.1500e-003	0.2267	5.0900e-003	0.2318	0.0614	4.8300e-003	0.0662		330.5131	330.5131	0.0111	0.0301	339.7460

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.5287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	35.7332	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.5287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	35.5584	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Elementary School	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Unmitigated	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Total	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Total	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - SFR Annual Construction****Los Angeles-Mojave Desert County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	193

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational modeled separately

Woodstoves - Operational modeled separately

Consumer Products - Operational modeled separately

Area Coating - Operational modeled separately

Landscape Equipment - Operational modeled separately

Energy Use - Operational modeled separately

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Water And Wastewater - Operational modeled separately

Solid Waste - Operational modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering exposed area based on AVAQMD regulations for dust suppression and is not mitigated scenario.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/8/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	6,155.97	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	6,384.00	0.00
tblEnergyUse	T24E	93.13	0.00
tblEnergyUse	T24NG	19,108.08	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	30.80	0.00
tblFireplaces	NumberNoFireplace	5.60	0.00
tblFireplaces	NumberWood	19.60	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	160.00	193.00
tblSolidWaste	SolidWasteGenerationRate	79.13	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblWater	IndoorWaterUseRate	3,648,625.43	0.00
tblWater	OutdoorWaterUseRate	2,300,220.38	0.00
tblWoodstoves	NumberCatalytic	2.80	0.00
tblWoodstoves	NumberNoncatalytic	2.80	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	tons/yr										MT/yr					
2022	0.7397	2.4802	2.4796	4.4800e-003	0.1368	0.1217	0.2585	0.0487	0.1140	0.1628	0.0000	390.3820	390.3820	0.0930	2.8700e-003	393.5624
Maximum	0.7397	2.4802	2.4796	4.4800e-003	0.1368	0.1217	0.2585	0.0487	0.1140	0.1628	0.0000	390.3820	390.3820	0.0930	2.8700e-003	393.5624

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.5201	0.2133	2.0601	3.4600e-003	0.0763	5.5800e-003	0.0819	0.0259	5.5500e-003	0.0315	0.0000	306.3745	306.3745	0.0875	2.8700e-003	309.4172
Maximum	0.5201	0.2133	2.0601	3.4600e-003	0.0763	5.5800e-003	0.0819	0.0259	5.5500e-003	0.0315	0.0000	306.3745	306.3745	0.0875	2.8700e-003	309.4172

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	29.69	91.40	16.92	22.77	44.26	95.41	68.34	46.86	95.13	80.68	0.00	21.52	21.52	5.91	0.00	21.38

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
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Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	2/23/2022	3/8/2022	5	10
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

**Residential Indoor: 204,120; Residential Outdoor: 68,040; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0
(Architectural Coating – sqft)**

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	82.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	20.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.8600e-003	0.0000	8.8600e-003	1.3400e-003	0.0000	1.3400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0198	0.1929	0.1545	2.9000e-004		9.3200e-003	9.3200e-003		8.6600e-003	8.6600e-003	0.0000	25.4927	25.4927	7.1600e-003	0.0000	25.6717
Total	0.0198	0.1929	0.1545	2.9000e-004	8.8600e-003	9.3200e-003	0.0182	1.3400e-003	8.6600e-003	1.0000e-002	0.0000	25.4927	25.4927	7.1600e-003	0.0000	25.6717

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9000e-004	7.2500e-003	1.6200e-003	3.0000e-005	7.1000e-004	5.0000e-005	7.6000e-004	1.9000e-004	5.0000e-005	2.4000e-004	0.0000	2.5324	2.5324	1.3000e-004	4.0000e-004	2.6555
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2300e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7551	0.7551	2.0000e-005	2.0000e-005	0.7623
Total	5.1000e-004	7.5000e-003	4.8500e-003	4.0000e-005	1.6200e-003	6.0000e-005	1.6700e-003	4.3000e-004	6.0000e-005	4.9000e-004	0.0000	3.2875	3.2875	1.5000e-004	4.2000e-004	3.4178

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9900e-003	0.0000	3.9900e-003	6.0000e-004	0.0000	6.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4700e-003	0.0150	0.1746	2.9000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	25.4926	25.4926	7.1600e-003	0.0000	25.6717
Total	3.4700e-003	0.0150	0.1746	2.9000e-004	3.9900e-003	4.6000e-004	4.4500e-003	6.0000e-004	4.6000e-004	1.0600e-003	0.0000	25.4926	25.4926	7.1600e-003	0.0000	25.6717

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9000e-004	7.2500e-003	1.6200e-003	3.0000e-005	7.1000e-004	5.0000e-005	7.6000e-004	1.9000e-004	5.0000e-005	2.4000e-004	0.0000	2.5324	2.5324	1.3000e-004	4.0000e-004	2.6555
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2300e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7551	0.7551	2.0000e-005	2.0000e-005	0.7623
Total	5.1000e-004	7.5000e-003	4.8500e-003	4.0000e-005	1.6200e-003	6.0000e-005	1.6700e-003	4.3000e-004	6.0000e-005	4.9000e-004	0.0000	3.2875	3.2875	1.5000e-004	4.2000e-004	3.4178

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1012	0.0000	0.1012	0.0402	0.0000	0.0402	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4273	0.3195	6.8000e-004		0.0180	0.0180		0.0166	0.0166	0.0000	59.9881	59.9881	0.0194	0.0000	60.4731
Total	0.0399	0.4273	0.3195	6.8000e-004	0.1012	0.0180	0.1192	0.0402	0.0166	0.0567	0.0000	59.9881	59.9881	0.0194	0.0000	60.4731

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.9000e-004	6.3100e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4767	1.4767	5.0000e-005	4.0000e-005	1.4907
Total	6.3000e-004	4.9000e-004	6.3100e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4767	1.4767	5.0000e-005	4.0000e-005	1.4907

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0456	0.0000	0.0456	0.0181	0.0000	0.0181	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3800e-003	0.0363	0.3630	6.8000e-004		1.1200e-003	1.1200e-003		1.1200e-003	1.1200e-003	0.0000	59.9880	59.9880	0.0194	0.0000	60.4730
Total	8.3800e-003	0.0363	0.3630	6.8000e-004	0.0456	1.1200e-003	0.0467	0.0181	1.1200e-003	0.0192	0.0000	59.9880	59.9880	0.0194	0.0000	60.4730

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.9000e-004	6.3100e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4767	1.4767	5.0000e-005	4.0000e-005	1.4907
Total	6.3000e-004	4.9000e-004	6.3100e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4767	1.4767	5.0000e-005	4.0000e-005	1.4907

3.4 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1903	1.7411	1.8245	3.0000e-003		0.0902	0.0902		0.0849	0.0849	0.0000	258.3737	258.3737	0.0619	0.0000	259.9211
Total	0.1903	1.7411	1.8245	3.0000e-003		0.0902	0.0902		0.0849	0.0849	0.0000	258.3737	258.3737	0.0619	0.0000	259.9211

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3600e-003	0.0359	0.0117	1.4000e-004	4.4600e-003	3.3000e-004	4.7900e-003	1.2900e-003	3.2000e-004	1.6000e-003	0.0000	13.4567	13.4567	4.5000e-004	1.9400e-003	14.0461
Worker	6.3500e-003	4.9800e-003	0.0639	1.6000e-004	0.0180	1.2000e-004	0.0181	4.7700e-003	1.1000e-004	4.8800e-003	0.0000	14.9679	14.9679	4.9000e-004	4.4000e-004	15.1104
Total	7.7100e-003	0.0409	0.0757	3.0000e-004	0.0224	4.5000e-004	0.0229	6.0600e-003	4.3000e-004	6.4800e-003	0.0000	28.4246	28.4246	9.4000e-004	2.3800e-003	29.1565

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0243	0.1054	1.3276	1.9800e-003		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.0000	174.3662	174.3662	0.0564	0.0000	175.7761
Total	0.0243	0.1054	1.3276	1.9800e-003		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.0000	174.3662	174.3662	0.0564	0.0000	175.7761

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3600e-003	0.0359	0.0117	1.4000e-004	4.4600e-003	3.3000e-004	4.7900e-003	1.2900e-003	3.2000e-004	1.6000e-003	0.0000	13.4567	13.4567	4.5000e-004	1.9400e-003	14.0461
Worker	6.3500e-003	4.9800e-003	0.0639	1.6000e-004	0.0180	1.2000e-004	0.0181	4.7700e-003	1.1000e-004	4.8800e-003	0.0000	14.9679	14.9679	4.9000e-004	4.4000e-004	15.1104
Total	7.7100e-003	0.0409	0.0757	3.0000e-004	0.0224	4.5000e-004	0.0229	6.0600e-003	4.3000e-004	6.4800e-003	0.0000	28.4246	28.4246	9.4000e-004	2.3800e-003	29.1565

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.5100e-003	0.0556	0.0729	1.1000e-004		2.8400e-003	2.8400e-003		2.6100e-003	2.6100e-003	0.0000	10.0138	10.0138	3.2400e-003	0.0000	10.0948
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5100e-003	0.0556	0.0729	1.1000e-004		2.8400e-003	2.8400e-003		2.6100e-003	2.6100e-003	0.0000	10.0138	10.0138	3.2400e-003	0.0000	10.0948

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.7000e-004	2.1500e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5034	0.5034	2.0000e-005	1.0000e-005	0.5082
Total	2.1000e-004	1.7000e-004	2.1500e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5034	0.5034	2.0000e-005	1.0000e-005	0.5082

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4000e-003	6.0800e-003	0.0865	1.1000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.0138	10.0138	3.2400e-003	0.0000	10.0947
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.4000e-003	6.0800e-003	0.0865	1.1000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.0138	10.0138	3.2400e-003	0.0000	10.0947

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.7000e-004	2.1500e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5034	0.5034	2.0000e-005	1.0000e-005	0.5082
Total	2.1000e-004	1.7000e-004	2.1500e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5034	0.5034	2.0000e-005	1.0000e-005	0.5082

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4731					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	0.4751	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	9.0000e-005	1.1500e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2685	0.2685	1.0000e-005	1.0000e-005	0.2710
Total	1.1000e-004	9.0000e-005	1.1500e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2685	0.2685	1.0000e-005	1.0000e-005	0.2710

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4731					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	0.4734	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e	
Category	tons/yr	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000	

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated		0.0000	0.0000	0.0000	0.0000
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7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Single Family Housing	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Single Family Housing	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000
Total			0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - SFR Annual Construction****Los Angeles-Mojave Desert County, Summer****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	193

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational modeled separately

Woodstoves - Operational modeled separately

Consumer Products - Operational modeled separately

Area Coating - Operational modeled separately

Landscape Equipment - Operational modeled separately

Energy Use - Operational modeled separately

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Water And Wastewater - Operational modeled separately

Solid Waste - Operational modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering exposed area based on AVAQMD regulations for dust suppression and is not mitigated scenario.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/8/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	6,155.97	0.00

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	6,384.00	0.00
tblEnergyUse	T24E	93.13	0.00
tblEnergyUse	T24NG	19,108.08	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	30.80	0.00
tblFireplaces	NumberNoFireplace	5.60	0.00
tblFireplaces	NumberWood	19.60	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	160.00	193.00
tblSolidWaste	SolidWasteGenerationRate	79.13	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblWater	IndoorWaterUseRate	3,648,625.43	0.00
tblWater	OutdoorWaterUseRate	2,300,220.38	0.00
tblWoodstoves	NumberCatalytic	2.80	0.00
tblWoodstoves	NumberNoncatalytic	2.80	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1392	0.0533	4.6211	2.4000e-004	0.0000	0.0256	0.0256	0.0000	0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1392	0.0533	4.6211	2.4000e-004	0.0000	0.0256	0.0256	0.0000	0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	
4	Paving	Paving	2/23/2022	3/8/2022	5	10	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 66****Acres of Paving: 0****Residential Indoor: 204,120; Residential Outdoor: 68,040; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	82.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	20.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1812	0.0000	1.1812	0.1789	0.0000	0.1789			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	2.6392	25.7194	20.5941	0.0388	1.1812	1.2427	2.4239	0.1789	1.1553	1.3341		3,746.7812	3,746.7812	1.0524		3,773.0920

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0255	0.9181	0.2141	3.4000e-003	0.0957	6.8200e-003	0.1025	0.0262	6.5300e-003	0.0328		372.1573	372.1573	0.0198	0.0591	390.2477
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	0.0690	0.9479	0.6664	4.5300e-003	0.2189	7.6300e-003	0.2265	0.0589	7.2800e-003	0.0662		487.5801	487.5801	0.0234	0.0620	506.6519

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5316	0.0000	0.5316	0.0805	0.0000	0.0805			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	0.4623	2.0032	23.2798	0.0388	0.5316	0.0616	0.5932	0.0805	0.0616	0.1421	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0255	0.9181	0.2141	3.4000e-003	0.0957	6.8200e-003	0.1025	0.0262	6.5300e-003	0.0328		372.1573	372.1573	0.0198	0.0591	390.2477
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	0.0690	0.9479	0.6664	4.5300e-003	0.2189	7.6300e-003	0.2265	0.0589	7.2800e-003	0.0662		487.5801	487.5801	0.0234	0.0620	506.6519

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	3.6248	38.8435	29.0415	0.0621	9.2036	1.6349	10.8385	3.6538	1.5041	5.1579		6,011.4105	6,011.4105	1.9442		6,060.0158

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	0.7616	3.3000	32.9991	0.0621	4.1416	0.1015	4.2432	1.6442	0.1015	1.7457	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0123	0.3069	0.1036	1.2400e-003	0.0407	2.9600e-003	0.0436	0.0117	2.8300e-003	0.0145		133.0154	133.0154	4.4500e-003	0.0192	138.8359
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	0.0703	0.3466	0.7067	2.7500e-003	0.2050	4.0400e-003	0.2090	0.0553	3.8200e-003	0.0591		286.9124	286.9124	9.2200e-003	0.0232	294.0416

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0123	0.3069	0.1036	1.2400e-003	0.0407	2.9600e-003	0.0436	0.0117	2.8300e-003	0.0145		133.0154	133.0154	4.4500e-003	0.0192	138.8359
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	0.0703	0.3466	0.7067	2.7500e-003	0.2050	4.0400e-003	0.2090	0.0553	3.8200e-003	0.0591		286.9124	286.9124	9.2200e-003	0.0232	294.0416

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.3048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	47.5094	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.3048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	47.3345	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Single Family Housing	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Unmitigated	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256		8.3189	8.3189	8.0000e-003		8.5189
Total	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256		8.3189	8.3189	8.0000e-003		8.5189
Total	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Palmdale GPU - SFR Annual Construction****Los Angeles-Mojave Desert County, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	193

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational modeled separately

Woodstoves - Operational modeled separately

Consumer Products - Operational modeled separately

Area Coating - Operational modeled separately

Landscape Equipment - Operational modeled separately

Energy Use - Operational modeled separately

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Water And Wastewater - Operational modeled separately

Solid Waste - Operational modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering exposed area based on AVAQMD regulations for dust suppression and is not mitigated scenario.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/8/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	6,155.97	0.00

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	6,384.00	0.00
tblEnergyUse	T24E	93.13	0.00
tblEnergyUse	T24NG	19,108.08	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	30.80	0.00
tblFireplaces	NumberNoFireplace	5.60	0.00
tblFireplaces	NumberWood	19.60	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	160.00	193.00
tblSolidWaste	SolidWasteGenerationRate	79.13	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblWater	IndoorWaterUseRate	3,648,625.43	0.00
tblWater	OutdoorWaterUseRate	2,300,220.38	0.00
tblWoodstoves	NumberCatalytic	2.80	0.00
tblWoodstoves	NumberNoncatalytic	2.80	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1392	0.0533	4.6211	2.4000e-004	0.0000	0.0256	0.0256	0.0000	0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1392	0.0533	4.6211	2.4000e-004	0.0000	0.0256	0.0256	0.0000	0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	
4	Paving	Paving	2/23/2022	3/8/2022	5	10	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 66****Acres of Paving: 0****Residential Indoor: 204,120; Residential Outdoor: 68,040; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	82.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	20.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1812	0.0000	1.1812	0.1789	0.0000	0.1789			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	2.6392	25.7194	20.5941	0.0388	1.1812	1.2427	2.4239	0.1789	1.1553	1.3341		3,746.7812	3,746.7812	1.0524		3,773.0920

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0249	0.9554	0.2178	3.4000e-003	0.0957	6.8400e-003	0.1025	0.0262	6.5400e-003	0.0328		372.2664	372.2664	0.0197	0.0591	390.3617
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	0.0708	0.9882	0.6382	4.4700e-003	0.2189	7.6500e-003	0.2266	0.0589	7.2900e-003	0.0662		481.6207	481.6207	0.0234	0.0623	500.7610

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5316	0.0000	0.5316	0.0805	0.0000	0.0805			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	0.4623	2.0032	23.2798	0.0388	0.5316	0.0616	0.5932	0.0805	0.0616	0.1421	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0249	0.9554	0.2178	3.4000e-003	0.0957	6.8400e-003	0.1025	0.0262	6.5400e-003	0.0328		372.2664	372.2664	0.0197	0.0591	390.3617
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	0.0708	0.9882	0.6382	4.4700e-003	0.2189	7.6500e-003	0.2266	0.0589	7.2900e-003	0.0662		481.6207	481.6207	0.0234	0.0623	500.7610

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	3.6248	38.8435	29.0415	0.0621	9.2036	1.6349	10.8385	3.6538	1.5041	5.1579		6,011.4105	6,011.4105	1.9442		6,060.0158

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	0.7616	3.3000	32.9991	0.0621	4.1416	0.1015	4.2432	1.6442	0.1015	1.7457	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0121	0.3196	0.1070	1.2400e-003	0.0407	2.9700e-003	0.0436	0.0117	2.8400e-003	0.0145		133.0628	133.0628	4.4300e-003	0.0192	138.8902
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	0.0734	0.3633	0.6675	2.6700e-003	0.2050	4.0500e-003	0.2090	0.0553	3.8300e-003	0.0591		278.8685	278.8685	9.3300e-003	0.0234	286.0893

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0121	0.3196	0.1070	1.2400e-003	0.0407	2.9700e-003	0.0436	0.0117	2.8400e-003	0.0145		133.0628	133.0628	4.4300e-003	0.0192	138.8902
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	0.0734	0.3633	0.6675	2.6700e-003	0.2050	4.0500e-003	0.2090	0.0553	3.8300e-003	0.0591		278.8685	278.8685	9.3300e-003	0.0234	286.0893

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.3048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	47.5094	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.3048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	47.3345	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Single Family Housing	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Unmitigated	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256		8.3189	8.3189	8.0000e-003		8.5189
Total	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256		8.3189	8.3189	8.0000e-003		8.5189
Total	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Appendix C

Special Status Species List

Appendix C Biological Resources

Scientific Name Common Name	Status	Habitat Requirements
<i>Acanthoscyphus parishii</i> var. <i>abramsii</i> Abrams' oxytheca	None/None G4?T1T2/S1S2 1B.2	Annual herb. Blooms Jun-Aug. Occurs in chaparral, granitic sand, shale. 1140-2060m (3740-6760ft).
<i>Acanthoscyphus parishii</i> var. <i>parishii</i> Parish's oxytheca	None/None G4?T3T4/S3S4 4.2	Chaparral, Lower montane coniferous forest. Sandy or gravelly places. 1220-2600m. Blooms Jun-Sep.
<i>Androsace elongata</i> ssp. <i>acuta</i> California androsace	None/None G5?T3T4/S3S4 4.2	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland. Highly localized and often overlooked little plant. 150-1305m. Blooms Mar-Jun.
<i>Arctostaphylos gabilanensis</i> Gabilan Mountains manzanita	None/None G1/S1 1B.2	Chaparral, Cismontane woodland. Grainitic substrates. 300-700m. Blooms Jan.
<i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i> San Gabriel manzanita	None/None G5T3/S3 1B.2	Chaparral. Rocky outcrops; can be dominant shrub where it occurs. 595-1500m. Blooms Mar.
<i>Arctostaphylos parryana</i> ssp. <i>tumescens</i> interior manzanita	None/None G4T3T4/S3S4 4.3	Chaparral, Cismontane woodland. Montane chaparral or foothill woodland. 2100-2310m. Blooms Feb-Apr.
<i>Astragalus hornii</i> var. <i>hornii</i> Horn's milk-vetch	None/None GUT1/S1 1B.1	Meadows and seeps, Playas. Lake margins, alkaline sites. 60-850m. Blooms May-Oct.
<i>Astragalus preussii</i> var. <i>laxiflorus</i> Lancaster milk-vetch	None/None G4T2/S1 1B.1	Chenopod scrub. Alkaline clay flats or gravelly or sandy washes and along draws in gullied badlands. 700-735 m in California. 700-700m. Blooms Mar-May.
<i>Calochortus catalinae</i> Catalina mariposa lily	None/None G3G4/S3S4 4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland. In heavy soils, open slopes, openings in brush. 15-700m. Blooms (Feb)Mar-Jun.
<i>Calochortus clavatus</i> var. <i>avius</i> Pleasant Valley mariposa lily	None/None G4T2/S2 1B.2	Lower montane coniferous forest. Josephine silt loam and volcanically derived soil; often in rocky areas. 305-1800m. Blooms May-Jul.
<i>Calochortus clavatus</i> var. <i>gracilis</i> slender mariposa-lily	None/None G4T2T3/S2S3 1B.2	Perennial bulbiferous herb. Blooms March to June. Chaparral, coastal scrub. Shaded foothill canyons; often on grassy slopes within other habitat. 420-760m (1380-2495ft).
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer's mariposa-lily	None/None G3T2/S2 1B.2	Chaparral, Lower montane coniferous forest, Meadows and seeps. Vernal moist places in yellow-pine forest, chaparral. 710-2390m. Blooms Apr-Jul.
<i>Calochortus striatus</i> alkali mariposa lily	None/None G3?/S2S3 1B.2	Chaparral, Chenopod scrub, Meadows and seeps, Mojavean desert scrub. Alkaline meadows and ephemeral washes. 70-1600m. 70-1595m. Blooms Apr-Jun.
<i>Calystegia peirsonii</i> Peirson's morning-glory	None/None G4/S4 4.2	Chaparral, Chenopod scrub, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland. Often in disturbed areas or along roadsides or in grassy, open areas. 30-1500m. Blooms Apr-Jun.

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Scientific Name Common Name	Status	Habitat Requirements
<i>Canbya candida</i> white pygmy-poppy	None/None G3G4/S3S4 4.2	Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland. Gravelly, sandy, granitic places. 600-1460m. Blooms Mar-Jun.
<i>Castilleja gleasoni</i> Mt. Gleason paintbrush	None/SR G2/S2 1B.2	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland. On open flats or slopes in granitic soil. Restricted to the San Gabriel Mountains. 1160-2170m. Blooms May-Jun(Sep).
<i>Castilleja plagiotoma</i> Mojave paintbrush	None/None G4/S4 4.3	Great Basin scrub, Joshua tree "woodland", Lower montane coniferous forest, Pinyon and juniper woodland. Alluvial fans. 300-2500m. Blooms Apr-Jun.
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	None/None G3T2/S2 1B.1	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland. Dry slopes and flats; sometimes at interface of 2 vegetation types, such as chaparral and oak woodland. Dry, sandy soils. 275-1220m. Blooms Apr-Jun.
<i>Chorizanthe spinosa</i> Mojave spineflower	None/None G4/S4 4.2	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Playas. Sometimes on alkaline soils. 6-1300m. Blooms Mar-Jul.
<i>Cryptantha clokeyi</i> Clokey's cryptantha	None/None G3/S3 1B.2	Mojavean desert scrub. Sandy or gravelly soils. 725-1365m. Blooms Apr.
<i>Diplacus johnstonii</i> Johnston's monkeyflower	None/None G4/S4 4.3	Lower montane coniferous forest. On scree, in rocky or gravelly sites. Also in disturbed areas. 975-2920m. Blooms May-Aug.
<i>Eriastrum rosamondense</i> Rosamond eriastrum	None/None G1?/S1? 1B.1	Chenopod scrub, Vernal pools. Alkali pool beds separated by very low hummocks with open cheopod scrub. Often sandy soil. 700-1175m. Blooms Apr-May(Jun-Jul).
<i>Eriogonum umbellatum</i> var. <i>minus</i> alpine sulfur-flowered buckwheat	None/None G5T4/S4 4.3	Subalpine coniferous forest, Upper montane coniferous forest. Granitic substrate; usually gravelly or sandy. 1800-3068m. Blooms Jun-Sep.
<i>Frasera neglecta</i> pine green-gentian	None/None G4/S4 4.3	Lower montane coniferous forest, Pinyon and juniper woodland, Upper montane coniferous forest. Dry, open woodlands. 1400-2500m. Blooms May-Jul.
<i>Galium jepsonii</i> Jepson's bedstraw	None/None G3/S3 4.3	Lower montane coniferous forest, Upper montane coniferous forest. On granite; gravelly hillsides and slopes. 1540-2500m. Blooms Jul-Aug.
<i>Galium johnstonii</i> Johnston's bedstraw	None/None G4/S4 4.3	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland, Riparian woodland. Open, mixed forest. 1220-2300m. Blooms Jun-Jul.
<i>Gilia latiflora</i> ssp. <i>cuyamensis</i> Cuyama gilia	None/None G5?T4/S4 4.3	Pinyon and juniper woodland. Sandy flats, lower river valleys. 595-2000m. Blooms Apr-Jun.
<i>Goodmania luteola</i> golden goodmania	None/None G3/S3 4.2	Meadows and seeps, Mojavean desert scrub, Playas, Valley and foothill grassland. Alkaline or clay soils. 20-2200m. Blooms Apr-Aug.
<i>Hulsea vestita</i> ssp. <i>gabrielensis</i> San Gabriel Mountains sunflower	None/None G5T3/S3 4.3	Lower montane coniferous forest, Upper montane coniferous forest. Rocky sites. 1500-2500m. Blooms May-Jul.

Scientific Name Common Name	Status	Habitat Requirements
<i>Lilium parryi</i> lemon lily	None/None G3/S3 1B.2	Lower montane coniferous forest, Meadows and seeps, Riparian forest, Upper montane coniferous forest. Wet, mountainous terrain; generally in forested areas; on shady edges of streams, in open boggy meadows & seeps. 1220-2745m. Blooms Jul-Aug.
<i>Linanthus concinnus</i> San Gabriel linanthus	None/None G2/S2 1B.2	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest. Dry rocky slopes, often in Jeffrey pine/canyon oak forest. 1520-2800m. Blooms Apr-Jul.
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> sagebrush loeflingia	None/None G5T3/S2 2B.2	Desert dunes, Great Basin scrub, Sonoran desert scrub. Sandy flats and dunes. Sandy areas around clay slicks w/Sarcobatus, Atriplex, Tetradymia, etc. 700-1615m. Blooms Apr-May.
<i>Lycium torreyi</i> Torrey's box-thorn	None/None G4G5/S3 4.2	Mojavean desert scrub, Sonoran desert scrub. Sandy, rocky, washes, streambanks, desert valleys. -50-1220m. Blooms (Jan-Feb)Mar-Jun(Sep-Nov).
<i>Malacothamnus davidsonii</i> Davidson's bush-mallow	None/None G2/S2 1B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland. Sandy washes. 185-1140m. Blooms Jun-Jan.
<i>Monardella viridis</i> green monardella	None/None G3/S3 4.3	Broadleafed upland forest, Chaparral, Cismontane woodland. 100-1010m. Blooms Jun-Sep.
<i>Muilla coronata</i> crowned muilla	None/None G3/S3 4.2	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland. Mostly on barren flats and ridges in sandy, granitic soils. 670-1960m. Blooms Mar-Apr(May).
<i>Opuntia basilaris</i> var. <i>brachyclada</i> short-joint beavertail	None/None G5T3/S3 1B.2	Chaparral, Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland. Sandy soil or coarse, granitic loam. 425-1800m. Blooms Apr-Jun(Aug).
<i>Packera ionophylla</i> Tehachapi ragwort	None/None G4/S4 4.3	Lower montane coniferous forest, Upper montane coniferous forest. Dry, open, granitic talus slopes. 1500-2700m. Blooms Jun-Jul.
<i>Perideridia pringlei</i> adobe yampah	None/None G4/S4 4.3	Chaparral, Cismontane woodland, Coastal scrub, Pinyon and juniper woodland. Serpentine, clay soils. Grassland hillsides; seasonally wet sites. 300-1800m. Blooms Apr-Jun(Jul).
<i>Phacelia mohavensis</i> Mojave phacelia	None/None G4Q/S4 4.3	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Pinyon and juniper woodland. Sandy or gravelly soils, dry streambeds. 1400-2500m. Blooms Apr-Aug.
<i>Quercus durata</i> var. <i>gabrielensis</i> San Gabriel oak	None/None G4T3/S3 4.2	Chaparral, Cismontane woodland. 450-1000m. Blooms Apr-May.
<i>Symphotrichum greatae</i> Greata's aster	None/None G2/S2 1B.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian woodland. Mesic canyons. 300-2010m. Blooms Jun-Oct.
<i>Syntrichopappus lemmonii</i> Lemmon's syntrichopappus	None/None G4/S4 4.3	Chaparral, Joshua tree "woodland", Pinyon and juniper woodland. Decomposed granite; sandy or gravelly soils. 500-1830m. Blooms Apr-May(Jun).
<i>Bombus crotchii</i> Crotch bumble bee	None/SCE G3G4/S1S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.

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Scientific Name Common Name	Status	Habitat Requirements
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.
<i>Euphydryas editha quino</i> quino checkerspot butterfly	FE/None G5T1T2/S1S2	Sunny openings within chaparral & coastal sage shrublands in parts of Riverside & San Diego counties. Hills and mesas near the coast. Need high densities of food plants <i>Plantago erecta</i> , <i>P. insularis</i> , and <i>Orthocarpus purpureus</i> .
<i>Helminthoglypta fontiphila</i> Soledad shoulderband	None/None G1/S1	Air-breathing terrestrial snail. Known from type locality, Little Rock Creek Cyn on north side of San Gabriels; west to Santa Clarita in Soledad Cyn; east to the vicinity of Big Rock Creek; and north to Elizabeth Lake Cyn in the Sierra Pelona Mtns. Frequently found in riparian habitat (springs, seeps, along streams). May be found in rock piles, flood-borne debris, or under dead yuccas where other cover is not available.
<i>Anaxyrus californicus</i> arroyo toad	FE/None G2G3/S2S3 SSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.
<i>Rana draytonii</i> California red-legged frog	FT/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.
<i>Rana muscosa</i> southern mountain yellow-legged frog	FE/SE G1/S1 WL	Federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino mountains (southern DPS). Northern DPS was determined to warrant listing as endangered, Apr 2014, effective Jun 30, 2014. Always encountered within a few feet of water. Tadpoles may require 2 - 4 yrs to complete their aquatic development.
<i>Anniella pulchra</i> Northern California legless lizard	None/None G3/S3 SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.
<i>Anniella spp.</i> California legless lizard	None/None G3G4/S3S4 SSC	Contra Costa County south to San Diego, within a variety of open habitats. This element represents California records of <i>Anniella</i> not yet assigned to new species within the <i>Anniella pulchra</i> complex. Variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.
<i>Arizona elegans occidentalis</i> California glossy snake	None/None G5T2/S2 SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.
<i>Emys marmorata</i> western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.
<i>Gopherus agassizii</i> desert tortoise	FT/ST G3/S2S3	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.

Scientific Name Common Name	Status	Habitat Requirements
<i>Phrynosoma blainvillii</i> coast horned lizard	None/None G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.
<i>Thamnophis hammondi</i> two-striped gartersnake	None/None G4/S3S4 SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.
<i>Accipiter cooperii</i> Cooper's hawk	None/None G5/S4 WL	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.
<i>Agelaius tricolor</i> tricolored blackbird	None/ST G1G2/S1S2 SSC	
<i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow	None/None G5T3/S3 WL	Resident in Southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.
<i>Artemisiospiza belli belli</i> Bell's sage sparrow	None/None G5T2T3/S3 WL	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range. Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yds apart.
<i>Athene cunicularia</i> burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.
<i>Buteo regalis</i> ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.
<i>Buteo swainsoni</i> Swainson's hawk	None/ST G5/S3	
<i>Charadrius montanus</i> mountain plover	None/None G3/S2S3 SSC	Short grasslands, freshly plowed fields, newly sprouting grain fields, & sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.
<i>Falco columbarius</i> merlin	None/None G5/S3S4 WL	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches. Clumps of trees or windbreaks are required for roosting in open country.
<i>Lanius ludovicianus</i> loggerhead shrike	None/None G4/S4 SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.
<i>Poliioptila californica californica</i> coastal California gnatcatcher	FT/None G4G5T3Q/S2 SSC	Obligate, permanent resident of coastal sage scrub below 2500 ft in Southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.
<i>Toxostoma lecontei</i> Le Conte's thrasher	None/None G4/S3 SSC	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.

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Scientific Name Common Name	Status	Habitat Requirements
<i>Vireo bellii pusillus</i> least Bell's vireo	FE/SE G5T2/S2	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.
<i>Myotis yumanensis</i> Yuma myotis	None/None G5/S4	Occurs in a variety of lowland and upland habitats including desert scrub, riparian, and woodlands and forests. Distribution is closely tied to bodies of water. Roosts in a variety of areas including caves, cliffs, mines, crevices in live trees, and buildings and other man-made structures.
<i>Onychomys torridus ramona</i> southern grasshopper mouse	None/None G5T3/S3 SSC	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.
<i>Perognathus inornatus</i> San Joaquin pocket mouse	None/None G2G3/S2S3	Grassland, oak savanna and arid scrubland in the southern Sacramento Valley, Salinas Valley, San Joaquin Valley and adjacent foothills, south to the Mojave Desert. Associated with fine-textured, sandy, friable soils.
<i>Xerospermophilus mohavensis</i> Mohave ground squirrel	None/ST G2G3/S2S3	Open desert scrub, alkali scrub & Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.
Mojave Riparian Forest	None/None G1/S1.1	
Southern Coast Live Oak Riparian Forest	None/None G4/S4	
Southern Cottonwood Willow Riparian Forest	None/None G3/S3.2	
Southern Riparian Scrub	None/None G3/S3.2	
Southern Sycamore Alder Riparian Woodland	None/None G4/S4	
Southern Willow Scrub	None/None G3/S2.1	
Valley Needlegrass Grassland	None/None G3/S3.1	All topographic locations. Soils may be deep with high clay content, loamy, sandy, or silty derived from mudstone, sandstone, or serpentine substrates
Wildflower Field	None/None G2/S2.2	

Appendix D

Traffic Report

DRAFT

Palmdale General Plan Update and Program EIR

Traffic Report

City of Palmdale

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Report Overview

Palmdale is a city in northern Los Angeles County in the state of California. The city lies in the Antelope Valley region of Southern California. The San Gabriel Mountains, which are about 40 miles wide, separate Palmdale from the Los Angeles Basin to the south.

This report provides traffic information about the City of Palmdale including traffic counts, local land use and future travel demand forecasts in support of the General Plan Update. Traffic modeling was performed at the link level using the Regional Model. The SCAG region utilizes the SCAG 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Travel Demand Model (SCAG model) to produce forecasts for the region. The SCAG model used for the Palmdale General Plan Update (Palmdale GP) is consistent with the RTP assumptions for existing year and future year conditions as all projects in the RTP are included.

EXISTING REGIONAL AND LOCAL ROADWAY

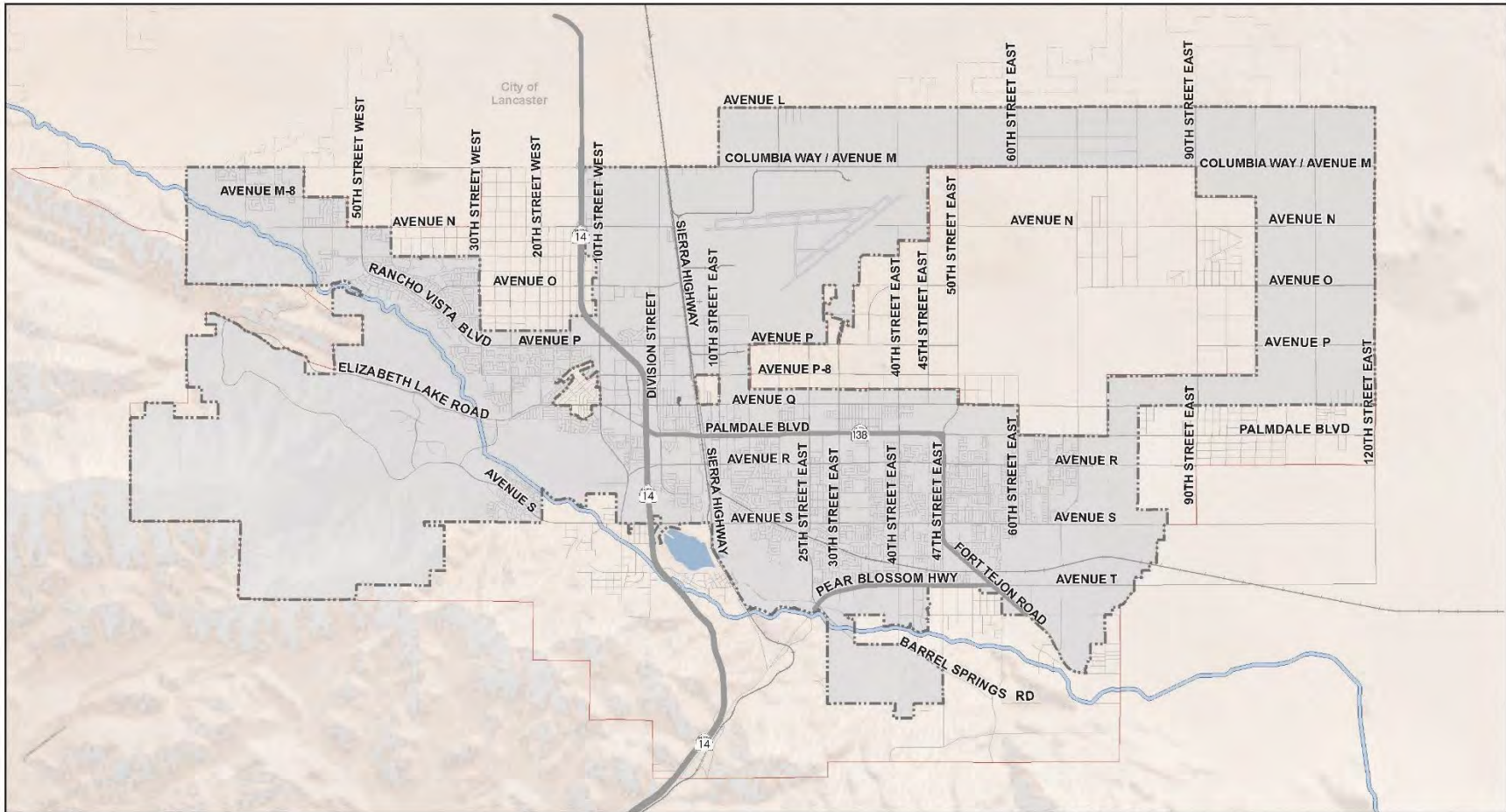
The existing regional and local roadway network in Palmdale is a hierarchical system of highways and local streets developed to provide regional traffic movement and local access. State Route (SR-) 14 provides access to a regional highway route, while SR-138 is a key arterial distributing vehicular traffic through the city.

The city's roadway network has been developed primarily around a suburban grid system in which arterials are spaced approximately every mile and secondary arterials are spaced every half-mile between major arterials. Each east–west lettered avenue is one mile from the next lettered east–west avenue, and each north–south numbered avenue is one mile from the next numbered north–south avenue.

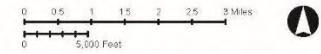
Between arterials, neighborhood local and collector streets are suburban in nature, with limited collector roads to lead traffic into arterials. Common features in neighborhoods are dead-ends, and cul-de-sacs. This design approach facilitates congestion, as arterials are the only options for moving between destinations in the community. Dead-ends and cul-de-sacs also limit connectivity for alternative modes of transportation, particularly people walking or bicycling.

The city is located approximately 60 freeway miles north of Los Angeles. Regional access to the city is provided via the Antelope Valley Freeway (State Route [SR] 14), which extends north to Kern County and south to the San Fernando Valley. Additional arterials providing regional access to the city are Palmdale Boulevard, Elizabeth Lake Road, Pearblossom Highway (SR 138), and Sierra Highway. The city's existing roadway network is illustrated in Figure 1.

Figure 1. Existing Roadway Network



Existing Road Network



Date Sources: City of Palmdale GIS data, World
Terrain Base, 30' ESRI, USGS, NOAA.

Produced by Parsons
April 2019

FUNCTIONAL STREET CLASSIFICATIONS

The following section provides a description of the functional classification of the facilities within the study area. The city's roadway system consists of a wide range of transportation facilities, which serve two basic functions: mobility and land access. A circulation network is composed of facilities that emphasize mobility or access to different degrees. The following types of facilities are generically defined.

- Freeway: Mobility with very limited access.
- Expressway: Mobility with more frequent access to arterial streets than a freeway, but no direct land access.
- Arterial: Mobility with access to collectors, some local streets and major traffic.
- Collector: Connects local streets with arterials and also provides access to adjacent land uses, thus balancing mobility with access.
- Local: Provides access to adjacent land uses exclusively.

PALMDALE ROADWAY CLASSIFICATIONS

Regional Arterials

Regional arterials are limited access facilities that provide service to non-local through trips with minimal direct access to adjacent land uses. They have a design cross-section of eight lanes (four in each direction) with medians and turn lanes at a limited number of access points. Regional arterials are designated as 106-foot roadways, typically within a 120-foot right-of-way. At their design capacity of level of service (LOS) D, most regional arterials can carry between 49,500 and 64,000 vehicles per day. Some bike lanes currently exist within primary and regional arterials, however current City policy is to provide new bike lanes on secondary arterials only.

Major Arterials

Major arterials are primarily intended to serve through, non-local traffic and provide limited local access. They have a cross-section of three through lanes, and a raised landscape median and turn lanes at a limited number of access points. Major arterials are designated as 84-foot roadways, within a 100-foot right-of-way. At LOS D, major arterials can accommodate between 40,000 and 44,000 vehicles per day.

Secondary Arterials

Secondary arterials provide more local access than major arterials, while also providing a reduced level of non-local through traffic service. Secondary arterials have a cross-section of four through lanes, a bike lane in each direction and a left-turn lane within 68 feet of curb-to-curb space, within an 84-foot right-of-way. These roadways are usually undivided with the potential for limited on-street parking, turn lanes at major intersections, and partial control of vehicular and pedestrian access from driveways, cross streets, and crosswalks. Secondary arterials can accommodate between 22,000 and 24,000 vehicles per day at an acceptable level of service.

COUNTY OF LOS ANGELES CLASSIFICATIONS

Freeways/Expressways

The freeway is the highest level of roadway in the planning area and accommodates regional and interstate travel. Freeways typically have a minimum 180-foot cross-section and at least four through lanes (two per direction). Freeways have limited access at interchanges and have a typical design capacity of over 2,000 vehicles per hour per lane.

Major Highways

The major highway is intended to accommodate the majority of traffic connecting between cities and communities in the region and the regional freeway system. Major highways have an ultimate design cross-section of at least four lanes (two in each direction) with medians and turn lanes at limited number of access points. The right-of-way for major highways is typically 100 feet. At their design capacity of LOS E, most major highways can carry between 49,500 and 54,000 vehicles per day. Also classified as major highways, are key inter-urban roads, non-urban access ways and recreational roads. While many of these may not be planned for urban-type improvements, the wider right-of-way is needed for other transportation uses including bus turnouts and separate bicycle and pedestrian facilities.

Secondary Highways

The secondary highway is primarily intended to serve through traffic and collect traffic from limited secondary highways and collectors. In rural areas, secondary highways also serve as connecting highways between non-urban communities or in locations where widening a roadway to major highway width is not practical. Secondary highways normally have a cross-section of four through lanes with limited access from cross streets and driveways. Medians and turn lanes at limited locations are usually provided when adequate right-of-way (80 feet is the desired width) is developed and traffic and/or safety conditions warrant. At LOS E, secondary highways can accommodate between 40,000 and 44,000 vehicles per day.

Limited Secondary Highways

Limited secondary highways are typically found in the foothills and mountain and canyon areas. Their primary function is to provide access to low-density settlements and recreational areas. The standard for this type of roadway is two through lanes in a 64-foot right-of-way. These roadways are undivided with possible turn lanes at major intersections, graded shoulders, and limited control of vehicular and pedestrian access from driveways, cross streets, and crosswalks. Limited secondary highways can accommodate between 22,000 and 24,000 vehicles per day at an acceptable level of service; however, they are typically low-volume roads.

ROADWAY FACILITIES

Regional Road Network

State Route 14

State Route 14 is a north–south state highway in southern California, approximately 116.6 miles in length. The southern portion of the highway is signed as Antelope Valley Freeway. The route connects Interstate 5 (I-5), near Santa Clarita, with U.S. Route 395, near Inyokern.

The southern part of the route is a busy commuter freeway serving and connecting the communities of Palmdale and Lancaster with the Greater Los Angeles area. The northern portion is legislatively named Aerospace Highway, as the highway serves Edwards Air Force Base. With U.S. Route 395, this road connects Los Angeles with such places as Mammoth Mountain, Mono Lake, Yosemite National Park and Reno, Nevada. Housing and population growth in Santa Clarita, Lancaster and Palmdale has made the Antelope Valley Freeway one of the most congested freeways in southern California.

State Route 138

State Route 138 (SR 138) is an east–west state highway generally following the northern foothills of the San Gabriel Mountains from its junction with I-5 south of Gorman eastward to Mount Anderson Junction, its eastern junction with State Route 18 south of Crestline in the San Bernardino Mountains. The route is approximately 105.4 miles long.

The western leg of SR 138 extends from I-5 to Gorman Post Road, Lancaster Road from Gorman Post Road to 245th Street West near Neenach School, and Avenue D from 245th Street West to SR 138's north junction with SR 14. After its co-routing with the Antelope Valley Freeway (SR 14) through Lancaster and Palmdale, it passes through the east side of Palmdale as four- to six-lane Palmdale Boulevard, 47th Street East, and Fort Tejon Road to Pearblossom Highway. The state route continues, named locally as Pearblossom Highway, as a four-lane facility to just west of 72nd Street East, where it tapers to three, then two lanes and continues easterly on Pearblossom Highway through Littlerock, Pearblossom and Llano to its junction with SR 18.

Local Road Network

The street system is laid out on a grid. Each lettered east–west avenue is one mile from the next letter. By way of example, Avenue R is one mile north from Avenue S. In between each whole letter avenue, there are 15 sub-avenues labeled -1 through -15. Along with whole letter avenues, the -8 avenues are also major thoroughfares. Avenue R-8, for example, is a major road just like Avenue R and Avenue S. Sometimes the -8 avenues are renamed. Avenue Q-8 is renamed Palmdale Boulevard and Avenue P-8 is renamed Technology Drive.

Major streets which run north to south are numbered inside their direction, i.e., 10th Street West and 10th Street East. Each 0 and 5 street is a major thoroughfare with each 0 street being 1 mile from the previous 0 street. For example, 40th Street East is one mile east of 30th Street East. The east–west dividing line is Division Street, west of the Union Pacific/Metrolink rail corridor, which would be the equivalent of 0 Street East/West.

Major East–West Roads

Avenue L

Avenue L is unpaved from just west of 150th Street East to the arterial’s intersection with 60th Street East. Avenue L then becomes a paved two-lane road and begins its operation as a regional arterial. The asphalt is extremely degraded in some places and appears to be simply a farm road at times with no roadway striping. There is a roadway break between 40th Street East and 35th Street East, where East Avenue L picks up again as a two-lane arterial. At 5th Street East, Avenue L begins operating at two lanes in each direction and periodic sections of three lanes in both the east and west directions. East of 42nd Street West, Avenue L transitions back to one lane in each direction to its end as a paved roadway at 90th Street West.

Columbia Way/Avenue M

East Avenue M transitions from a major arterial to a regional arterial and then back to a major arterial as it progresses in an east–west direction through the Palmdale area. The arterial begins as a paved roadway in the east at a right-angle intersection with 100th Street East. There is a break in pavement between 90th Street East and 70th Street East where the roadway continues as a dirt road. The portion of East Avenue M that is paved between 100th Street East and 70th Street East operates as one lane in each direction. The arterial picks up again at 50th Street East with two lanes in each direction, operating as East Avenue M/ColumbiaWay. To the west of 10th Street West, West Avenue M again transitions to one lane in each direction. The arterial terminates in the west at 75th Street West.

Avenue P/Rancho Vista Boulevard

This major arterial extends from 50th Street West to 15th Street East as Rancho Vista Boulevard, and from 15th Street East to 50th Street East as East Avenue P. West of 15th Street West, Rancho Vista Boulevard is a four-lane major arterial servicing residential areas. Between 15th Street West and approximately 0.25-mile west of Division Street, at Fairway Drive, Rancho Vista Boulevard is a six-lane arterial servicing commercial and residential areas with a speed limit of 35 mph. East of Fairway Drive, Rancho Vista Boulevard continues as a four-lane arterial road servicing commercial and industrial areas including the Palmdale Regional Airport and Plant 42. Per the City’s most recent General Plan, Avenue P has a plan line dedication of 104 or 114 feet¹ of right-of-way allowing for six lanes with a median at build-out conditions.

There is a two-track railroad crossing of Rancho Vista Boulevard located between Sierra Highway and Eighth Street East/Lockheed Way. The crossing is approximately 50 feet east of and 1,300 feet west of the Sierra Highway and Eighth Street East intersections, respectively. The crossing is currently equipped with two curb-mounted California Public Utilities Commission (CPUC) Standard 9 (flashing light signal assembly with automatic gate arm) warning devices, two median-mounted CPUC Standard 9 (flashing light signal assembly with automatic gate arm) warning devices, railroad advanced warning signage, and pavement markings. A grade separation of the railroad crossing is currently being designed.

¹The build-out width of the right-of-way on all local roadways is independent on whether or not the street will accommodate a bicycle lane, which will be determined in the City’s Bicycle Transportation Plan.

Traffic Report

Technology Drive/East Avenue P-8

Technology Drive/East Avenue P-8 is approximately one-half mile south of and parallel to Rancho Vista Boulevard/Avenue P. This secondary arterial has three discontinuous segments which are paved. The western-most segment is named Technology Drive from 10th Street West to Division Street, and East Avenue P-8 from east of Division Street to Sierra Highway. This segment is striped for four through lanes and a center shared left-turn lane. The middle paved portion runs between Eighth Street East and 10th Street East and has two through lanes. The eastern paved portion runs between 40th Street East and 50th Street East and also has two through lanes.

Avenue Q

About 0.5-mile north of Palmdale Boulevard, Avenue Q runs parallel to Palmdale Boulevard. Avenue Q is designated as a major and secondary arterial street but is discontinuous. It runs from just west of Trade Center Drive to just east of 40th Street East. West of SR 14, West Avenue Q is a major arterial street from Trade Center Drive to Fifth Street West, servicing a light industrial area. Between Fifth Street West and SR 14, West Avenue Q is a secondary arterial street servicing the Antelope Valley Auto Center. From SR 14 to Third Street East, West/East Avenue Q is again a major arterial street servicing mainly single-family residential land uses.

To the east of the Union Pacific and Metrolink railroad tracks, East Avenue Q begins again as a major arterial at Sierra Highway. East of 15th Street East until East Avenue Q ends just east of 40th Street East, East Avenue Q continues as a major arterial. Per the City's existing General Plan, Avenue Q has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions.

The City of Palmdale aspires to grade separate Avenue Q with the Union Pacific, Metrolink, and future high-speed railroad tracks, thereby connecting the east and westerly segments of this arterial street.

Palmdale Boulevard/SR 138

West of SR 14, West Palmdale Boulevard is a four-lane regional arterial from 10th Street West to the SR 14 southbound ramp terminal intersection. Just east of SR 14, Palmdale Boulevard is a state-owned route, signed as SR 138, running east to 47th Street East. From SR 14, traveling east to 25th Street East, the facility serves a highly concentrated general commercial area. Per the City's General Plan, West Palmdale Boulevard between Elizabeth Lake Road and Division Street has a plan line dedication of 126 or 136 feet of right-of-way allowing for eight lanes with a median at build-out conditions. East Palmdale Boulevard between Division Street and 120th Street East has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions. A design effort is currently underway to widen Palmdale Boulevard to six lanes between Fifth Street East and 10th Street East.

East Avenue R/Rayburn Road

East Avenue R/Rayburn Road is approximately one-half mile south of Palmdale Boulevard. West of Division Street, the roadway is known as Rayburn Road and East Avenue R east of Division Street. Rayburn Road is a two-lane facility. East of Division Street, East Avenue R is a two-lane arterial with a center turning lane. From Sixth Street East to 47th Street East, East Avenue R is a four-lane arterial except for the portion between 35th Street East and 40th Street East, where the eastbound direction narrows to one lane. Per the City's existing General Plan, Rayburn Road/East Avenue R between Tierra

Traffic Report

Subida Avenue and 90th Street East has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions.

The City and Caltrans are currently pursuing a safety project along a two-mile long segment of Avenue R between Sierra Highway and 25th Street East. The project will add a dedicated bike lane, a left-turn lane midblock, and continuous pavement and intersection sidewalk ramps that are compliant with the Americans with Disabilities Act (ADA) guidelines.

Avenue S

Avenue S is approximately one mile south of Avenue R/Rayburn Road. It is designated as a major arterial as it runs about 1.75 miles west of SR 14 to about 3,800 feet east of 47th Street East. Avenue S is a four-lane road with combinations of medians and left-turn lanes. East Avenue S has a full diamond interchange with SR 14. Per the City's existing General Plan, Avenue S between City Ranch Road/Ranch Center Drive and Bridge Road has a plan line dedication of 104 or 114 feet of right-of-way, allowing for six lanes with a median at build-out conditions; a plan line dedication of 126 to 136 feet of right-of-way between Bridge Road and 35th Street East allowing for eight lanes at build-out conditions; and a plan line dedication of 104 or 114 feet of right-of-way between 35th Street East and 70th Street East allowing for six lanes at build-out conditions.

Major North–South Roads

10th Street West

Running parallel to SR 14, 10th Street West is an arterial road that runs from the city of Lancaster to Palmdale Boulevard, continuing south where it changes names to become Tierra Subida Avenue. South of SR 14 to Technology Drive, 10th Street West continues as a regional arterial. South of Technology Drive, until it becomes Tierra Subida Avenue at Palmdale Boulevard, 10th Street West is a major arterial road. Per the City's existing General Plan, 10th Street West between West Avenue M and West Palmdale Boulevard has a plan line dedication of 126 or 136 feet of right-of-way allowing for eight lanes with a median at build-out conditions.

A design effort is currently underway to widen 10th Street West south of SR 14 to Palmdale Boulevard.

Division Street

Division Street is a north–south, two-lane arterial that runs from just north of Avenue O to East Avenue R-8. The road is located between Sierra Highway and SR 14 and is discontinuous between Rancho Vista Boulevard and Technology Drive/East Avenue P-8. From Technology Drive/East Avenue P-8 to just north of East Avenue P-12, Division Street is not paved. As mentioned previously, Division Street is the dividing line between east and west naming of streets. Per the City's existing General Plan, Division Street between Avenue M and Avenue R-8 has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions.

Fifth Street East

Fifth Street East is a north–south running arterial west of the Union Pacific/Metrolink rail corridor. The road runs between East Avenue S and East Avenue Q and has two through lanes. Per the City's General Plan, Fifth Street East between East Avenue Q and Palmdale Avenue has a plan line dedication of 84 or 92 feet of right-of-way allowing for four lanes without a median, and a plan line dedication of 84 or

Traffic Report

92 feet of right-of-way between Palmdale Boulevard and East Avenue S allowing for four lanes with a median at build-out conditions.

Sierra Highway

Just west of 10th Street East, Sierra Highway is a four-lane regional arterial running in a northwest to southeast direction. From Rancho Vista Boulevard to Pearblossom Highway, Sierra Highway is a four-lane major arterial. Sierra Highway services residential, commercial, and industrial areas. Per the City's existing General Plan, Sierra Highway between East Avenue M and East Avenue P has a plan line dedication of 126 or 136 feet of right-of-way allowing for eight lanes with a median at build-out conditions, and between East Avenue P and Pearblossom Highway has a plan line dedication of 104 or 114 feet of right-of-way allowing for 6 lanes with a median at build-out conditions. A design effort is currently underway to widen Sierra Highway to six lanes between East Avenue Q and East Avenue R.

10th Street East

One mile west of 20th Street East, 10th Street East is a major two-lane arterial street running in a north-south direction. From the Lockheed Martin facility north of East Avenue P to East Avenue Q, the road services commercial and industrial areas. At East Avenue Q, 10th Street East widens to a four-lane major arterial continuing to Palmdale Boulevard. Per the City's existing General Plan, 10th Street East between East Avenue L and Palmdale Boulevard has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions, and between Palmdale Boulevard and East Avenue S has a plan line dedication of 84 or 92 feet of right-of-way allowing for four lanes with a median at build-out conditions.

15th Street East

Fifteenth Street East is a north-south running arterial that is 0.5 mile east of 10th Street East. This road reaches between Lockheed Way and East Avenue R and has two through lanes. Per the City's General Plan, 15th Street East between East Avenue L and East Avenue P has a plan line dedication of 84 or 92 feet of right-of-way allowing for 4 lanes with a median; the section between Avenue P and Avenue P-8 has a plan line dedication of 104 or 114 feet of right-of-way allowing for four lanes with a median at build-out conditions.

20th Street East

Twentieth Street East is a north-south running arterial located one-half mile east of 15th Street East. This road runs from East Avenue P on the north to East Avenue S on the south. Between East Avenue P and Palmdale Boulevard, 20th Street East is two lanes wide and serves some commercial development, but mainly residential land uses. At Palmdale Boulevard, 20th Street East widens to a four-lane secondary arterial road, servicing residential areas. Per the City's existing General Plan, 20th Street East between East Avenue L and East Avenue M has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median; and between East Avenue P and East Avenue S has a plan line dedication of 84 or 92 feet of right-of-way allowing for four lanes with a median at build-out conditions. The planned High Desert Corridor freeway would have a local service interchange with 20th Street East.

25th Street East

One-half mile to the east of 20th Street East is 25th Street East, a major arterial which runs from East Avenue P to south of Pearblossom Highway. Like 30th Street, 25th Street is a two-lane road north of Palmdale Boulevard. South of Palmdale Boulevard, it is a four-lane road until Pearblossom Highway,

Traffic Report

where it narrows to a two-lane road. Per the City's General Plan, 25th Street East between East Avenue L and East Avenue M has a plan line dedication of 84 or 92 feet of right-of-way allowing for four lanes with a median; and between East Avenue P and Pearblossom Highway/Barrel Springs Road has a 104- or 114-foot right-of-way allowing for six lanes with a median at build-out conditions.

30th Street East

Running parallel to 25th Street East, one-half mile to the east, is 30th Street East. Thirtieth Street East is a two-lane major arterial road which runs from just north of East Avenue P to just south of East Avenue S. At Palmdale Boulevard, 30th Street East widens to four lanes. Per the City's existing General Plan, 30th Street East has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions. The planned High Desert Corridor freeway would have a local service interchange with 30th Street East.

40th Street East

Fortieth Street East is one mile east of 30th Street East. Between East Avenue N, two miles north of East Avenue P, and East Avenue P, 40th Street East is a two-lane secondary arterial road. From East Avenue P to East Avenue R-8, 2.5 miles to the south, 40th Street is a major arterial. South of East Avenue R-8 to Pearblossom Highway, 40th Street East continues as a major arterial which serves residential areas. Per the City's existing General Plan, 40th Street East between East Avenue L and East Avenue P has a plan line dedication of 84 or 92 feet of right-of-way allowing for four lanes with a median, and between East Avenue P and East Avenue S has a dedicated 104- or 114-foot right-of-way allowing for six lanes with a median at build-out conditions.

50th Street East/47th Street East

Approximately six miles to the east of SR 14, 50th Street East runs in a north-south direction, parallel with the SR 14 freeway. Fiftieth Street East is a two-lane expressway that services mainly unincorporated areas of Palmdale. Per the City's existing General Plan, 50th Street East/47th Street East between East Avenue L and East Avenue S-8 has a plan line dedication of 126 or 136 feet of right-of-way allowing for eight lanes with a median at build-out conditions. The planned High Desert Corridor freeway would have a local service interchange with 50th Street East.

70th Street East

Seventieth Street East runs primarily in a north-south direction from its origin at East Avenue D in the north to its terminus operating as a paved roadway. As the secondary arterial makes a 90-degree turn to the west and becomes East Avenue

S. Seventieth Street East continues southward as an unpaved road to the Union Pacific (Colton-Palmdale Cutoff) railroad tracks. The unpaved roadway begins again to the south of East Avenue T and continues to the south past the quarry until its terminus at SR 138. The majority of this roadway operates as one lane in each direction.

90th Street East/87th Street East

Ninetieth Street East begins as a paved major arterial approximately one mile north of East Avenue E in Lancaster. In Littlerock, near Avenue S, 90th Street East makes a jog to the west and becomes 87th Street east, operating as a secondary arterial until its terminus at Mt. Emma Road. The arterial operates in a north-south direction primarily as one lane in each direction.

Methodology

The Southern California Association of Governments (SCAG) region encompasses six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and 191 cities in an area covering more than 38,000 square miles. The agency develops long-range regional transportation plans including sustainable community strategies and growth forecast components, regional transportation improvement programs, and regional housing needs allocations. Palmdale, California is located within the SCAG region.

The SCAG region utilizes the SCAG 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Travel Demand Model (SCAG model) to produce forecasts for the region. The SCAG model used for the Palmdale General Plan Update (Palmdale GP) is consistent with the RTP assumptions for existing year and future year conditions as all projects in the RTP are included. The 2040 future year model datasets were used to produce the future conditions for the Palmdale GP scenarios. The external-to-internal (XI) and internal-to-external (IX) trips forecast by the SCAG model are terminated at the external zones known as gateways. For Palmdale, the nearest gateway is State Route (SR) 14 at the Kern County line. These external trips with one end in the SCAG region are fixed for each horizon year and do not vary with changes in socioeconomic data. The SCAG model roadway classifications are consistent with the Federal Highway Administration (FHWA) roadway classifications, which are more detailed and do not necessarily align with the City of Palmdale classifications, but are generally similar in nature. The main roadway classifications for the SCAG model are listed below, where each of these roadway types are further sub-divided.

- Freeways
- HOV and express lanes
- Expressways/parkways
- Principal arterials
- Minor arterials
- Major collectors
- Minor collectors
- Ramps
- Centroid connectors

The SCAG traffic analysis zone (TAZ) system was refined for the Palmdale sphere of influence (SOI) only to perform traffic assignments after the original SCAG model was run through the four steps of the complete model with the updated land use datasets for each of the scenarios. The SCAG model had 45 zones in the Tier 1 zone system within the Palmdale SOI. This zone system within the Palmdale SOI was disaggregated to the Tier 3 zone system with 336 zones as illustrated in Figure 2. The expanded zone system in the Palmdale SOI was used for traffic assignment purposes to better reflect the ground conditions in the study area because the original SCAG Tier 1 zones were too large. The SCAG model networks for existing and future conditions were updated with the revised zone system to perform traffic assignments. The SCAG model datasets were available for horizon year 2040 but not beyond; hence, the 2040 datasets were used for the 2045 Palmdale GP scenarios with updated land use within the Palmdale SOI.

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Various land use scenarios were developed as part of the General Plan Update for the City of Palmdale, after which the SCAG model results were tabulated for the Palmdale SOI that encompasses Palmdale. The 45 zones in the Tier 1 zone system of the SCAG model were identified as the Palmdale SOI. The geographic area covered by the Palmdale SOI includes Palmdale and the surrounding areas as illustrated in Figure 3.

Figure 2: Palmdale Traffic Analysis Zones

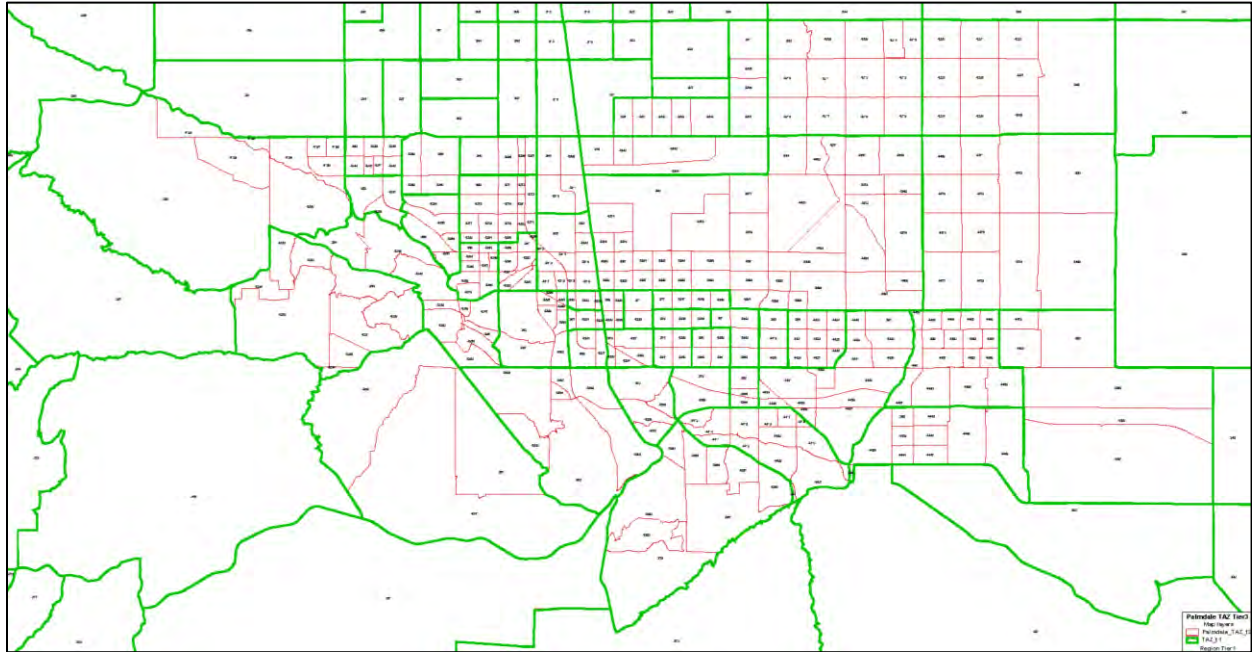
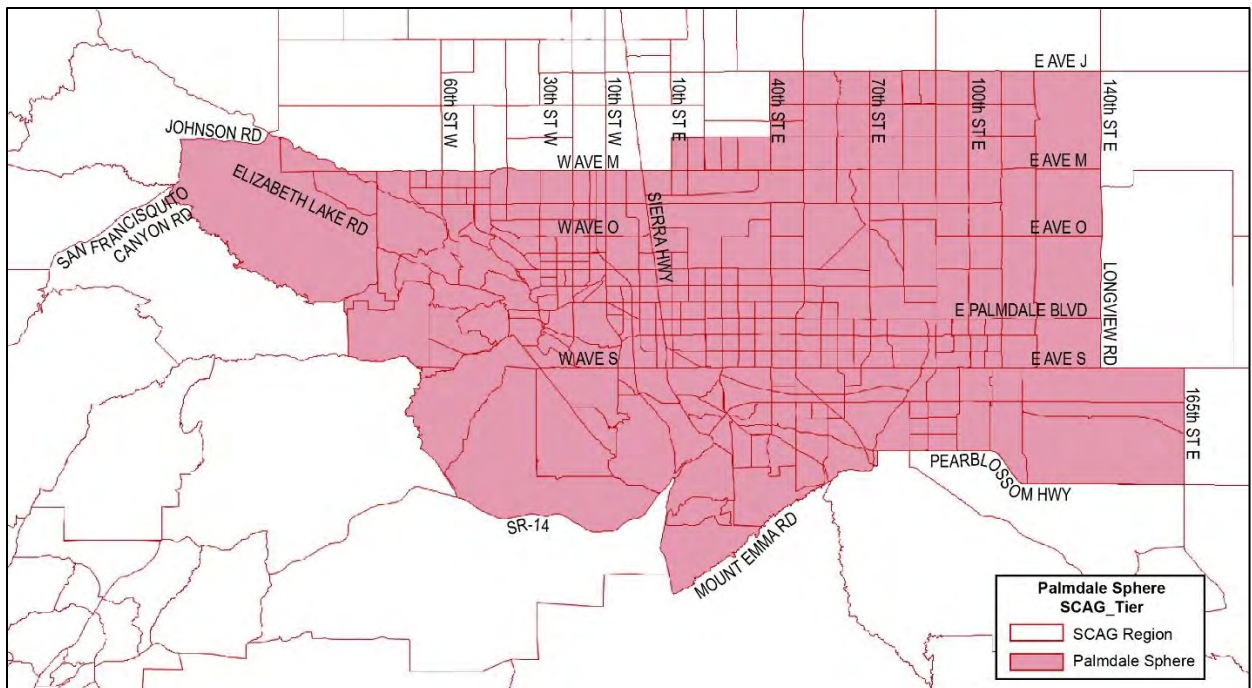


Figure 3: Palmdale Sphere of Influence



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The SCAG model comprises the entire SCAG region, which includes the counties of San Bernardino, Los Angeles, Ventura, Orange, Riverside, and Imperial. The Palmdale sphere of influence (SOI) is a very small part of the SCAG region, as shown in Table 1. The contribution of Palmdale SOI to the 2045 Base scenario for the region is 1.09 percent for population, 0.98 percent for households and 0.68 percent for employment. As such, it can be assumed that land use changes in the Palmdale SOI would have very little effect on the region.

Table 1: Percentage of the Palmdale Sphere of Influence in the SCAG Region

District Name	2017 Existing			2045 Base		
	Population	Households	Employment	Population	Households	Employment
Palmdale SOI	188,488	53,626	49,501	240,515	72,840	67,085
Remainder of SCAG region	18,797,418	6,156,694	8,064,233	21,883,490	7,334,073	9,804,345
Total	18,985,906	6,210,320	8,113,734	22,124,005	7,406,913	9,871,430
Percent Share for Palmdale	0.99%	0.86%	0.61%	1.09%	0.98%	0.68%

Most Palmdale trips primarily stay within Los Angeles County, with a small number traveling to nearby San Bernardino, Ventura, and Riverside counties. With the update of the socio-economic data for the Palmdale General Plan, the intent is to make Palmdale less of an exporter of trips, making it more self-sustainable, whereby more trips stay in Palmdale than leave Palmdale. As such, the socio-economic data outside the Palmdale SOI would have much less of an impact. The cities and entities across the SCAG region are developing future land use based on having both employment and population growth, leading to more trips staying within their jurisdiction to the extent possible. Applying standard growth rates across the region would not be possible because different cities have different assumptions for future growth. As such, the current land use data in the SCAG region would be more conservative and the growth is unlikely to be very different in the 5-year period. Like Palmdale, which strives to be less of an exporter of trips to other areas, primarily in Los Angeles County, other cities/agencies may also seek to reduce the exporting of trips. This would lead to the reduction of vehicle miles traveled (VMT) as required by the new SB 743 guidelines.

The SCAG model currently has the last horizon year as 2040, with a calibration year of 2012, and will be used for the SCAG region outside of the Palmdale SOI limits. It is always best to maintain consistency with the regional model to the extent possible. In addition, there is no basis for altering the land use for rest of the region which comprises 99 percent of the population.

The SCAG model was run for the following scenarios with updated land use within the Palmdale SOI:

- **2017 Existing:** The Palmdale SOI land use was updated based on input from the City, the four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions.
- **2045 Base:** The Palmdale SOI land use was updated based on input from the City, the four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions.

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- 2045 Base with High Desert Corridor Freeway (HDC):** The highway network was updated to include a proposed facility beginning at SR 14 and joining SR138/SR18 east of Longview Road. Traffic assignments were performed utilizing 2045 Base scenario trip tables. This scenario was run to illustrate the effects of the HDC facility on the Palmdale street system because the proposed HDC facility would be a major east–west freeway connecting Palmdale and Victorville. The HDC may not be built before 2050 or beyond as no funding sources are identified.
- 2045 Preferred Plan:** The Palmdale SOI land use was updated based on the 2045 Preferred Plan scenario assumptions. The four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. This scenario also included the addition of High-Speed Rail (HSR) trips at the Palmdale Station prior to performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions. In addition, the network was updated based on review and recommendations by the City of Palmdale.

Table 2 summarizes population, households and employment land use for the scenarios in the Palmdale SOI. The detailed land use by traffic analysis zones (TAZ) for the Palmdale SOI is provided in Appendix A.

Table 2: Palmdale Sphere of Influence Land Use Comparisons

	2017 Existing	2045 Base	2045 Preferred Plan
Populations	188,488	240,515	225,692
Households	53,626	72,840	70,618
Employment	49,501	67,085	74,804

The analysis for each of the scenarios include the following within the Palmdale sphere of influence (SOI):

- Daily segment level of service for selected locations.
- Post-processed daily volumes for selected segments.
- Measures of effectiveness (MOEs) metrics, i.e., vehicle miles travelled (VMT), vehicle hours travelled (VHT), vehicle hours of delay (VHD) and congested speeds, will be reported from traffic assignments for the Palmdale SOI on the transportation network performance.
- Select zone will create a subset of the trip table with Palmdale SOI trips only, which in turn will be used to produce trip lengths, VMT and VHT by district (aggregations of TAZs). In addition, the assignment procedures will also produce the VMT and VHT on all links as part of the assignment process and is known as link-based. The results of the link-based and zone-based procedures will be similar, but not equal, as two different procedures are employed.
- Vehicle miles travelled analysis for SB 743 compliance, where SB 743 eliminates level of service (LOS) as the basis for determining significant transportation impacts under CEQA and provides a new performance metric—VMT. The zone-based VMT procedures will be used for these computations. Home-based work and home-based all trips will also be used to compute VMT and other statistics.
- Average trip lengths will be reported for trip origins.
- VMT per capita will be reported by trip purpose for trip origins.

Existing Conditions

The network assumptions in the SCAG model used for the 2017 existing conditions scenario are consistent with the SCAG 2017 forecast year assumptions. The socio-economic data for the Palmdale SOI was updated with inputs from the City of Palmdale. The socio-economic data outside the Palmdale SOI is consistent with the SCAG assumptions for the region. The SCAG four-step model procedures were run with the updated land use covering the Palmdale SOI. Table 3 below lists the planning variable assumptions for the SCAG region.

Table 3: 2017 Existing Socio-Economic Data

2017 Existing	Population	Households	Employment
Palmdale sphere	188,488	53,626	49,501
Lancaster sphere	176,422	55,712	51,676
High Desert region	39,685	15,711	3,952
Ventura County	213,907	63,350	69,515
Los Angeles County remainder	9,759,145	3,275,180	4,411,709
Orange County	3,200,193	1,045,270	1,666,324
Riverside County	2,391,954	761,979	761,653
San Bernardino County	2,148,780	660,273	740,722
Imperial County	867,332	279,219	358,682
Externals	0	0	0
Seaport/airport	0	0	0
Total Region	18,985,906	6,210,320	8,113,734

Select zone traffic assignment procedures were performed on the zones within the Palmdale SOI to produce trips that were generated or attracted to the Palmdale SOI area only. All other trips were not counted as they were pass through trips. The daily average trip lengths for the Palmdale SOI only trips are shown in Table 4. The daily link-based VMT, vehicle hours traveled and the average speeds by facility types are shown in Table 5 for the Palmdale SOI only trips. The daily percent share of VMT for trips originating in the Palmdale SOI to all areas in the region, including Palmdale, is illustrated in Figure 4.

Table 4: 2017 Existing Average Trip Length for Palmdale SOI Trips

From/To	Trip Length (II and IX*) (miles)	Percent Share of Trips
Palmdale sphere	4.25	70.2%
Lancaster sphere	9.83	15.6%
High Desert region	15.46	2.9%
Imperial County	223.37	0.0%
Los Angeles County	55.62	7.8%
Orange County	105.28	0.4%
Riverside County	97.28	0.4%
San Bernardino County	62.41	1.2%
Ventura County	75.29	0.5%
Externals	60.99	0.9%
Seaport/airport	60.05	0.2%
Weighted Average	11.87	100.0%

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI

IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.

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Table 5: 2017 Existing Palmdale SOI (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

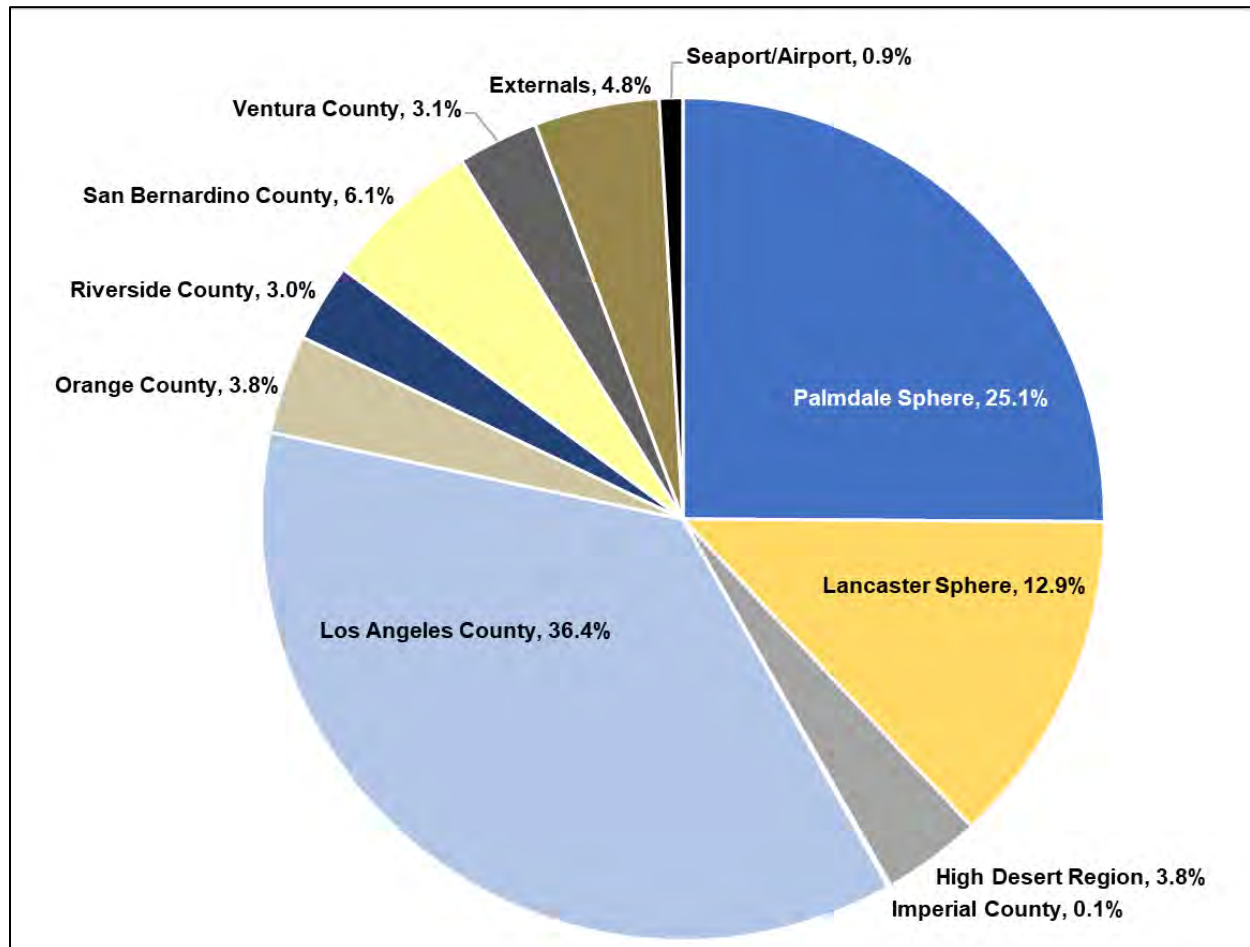
Facility	VMT	VHT	Average Speed (mph)
Freeways	2,893,868	110,892	47.5
HOT facilities	11,431	364	54.4
HOV facilities	284,701	12,647	54.0
Expressways/parkways	4,381	145	53.9
Principal arterials	1,484,072	40,118	30.6
Minor arterials	1,631,560	42,584	31.7
Major collectors	1,067,379	29,211	25.1
Minor connectors	41,916	1,279	31.4
Freeway ramps	152,550	17,266	21.1
Truck lanes only	6,323	245	51.1
Centroid connectors	450,545	17,702	24.2
Total without centroid connectors	7,578,181	254,752	37.1
Total of All Links	8,028,726	272,454	35.9

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI

IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region

XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI

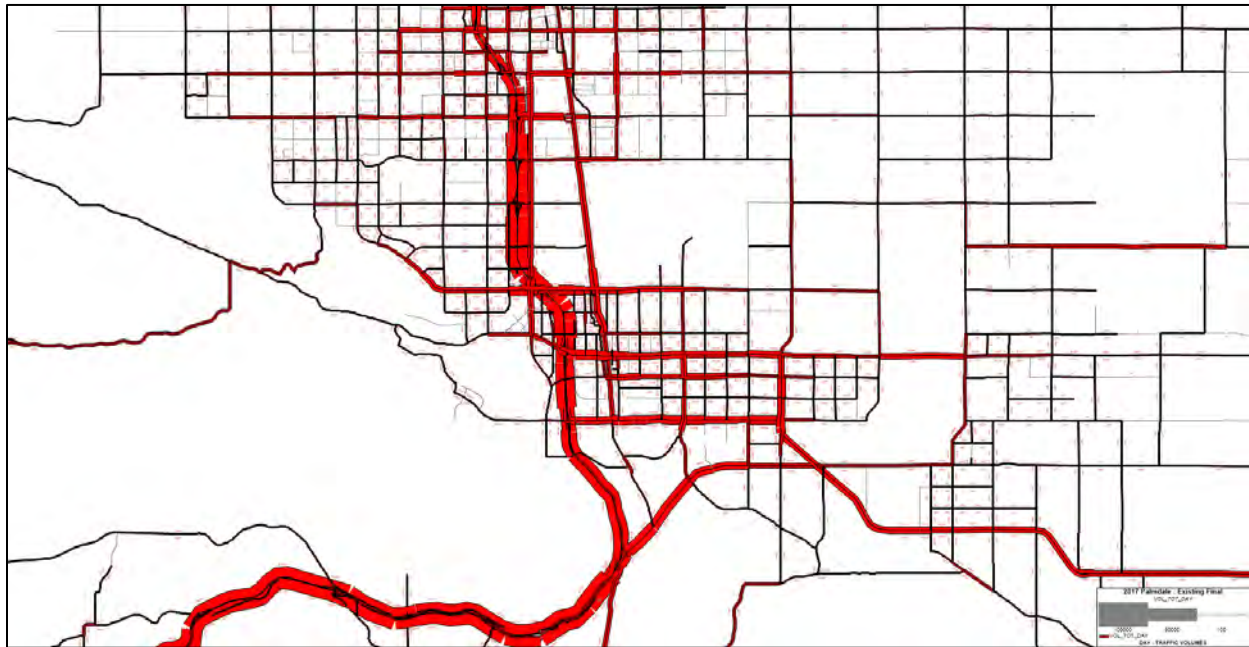
Figure 4: 2017 Existing Daily VMT Share Originating in the Palmdale SOI



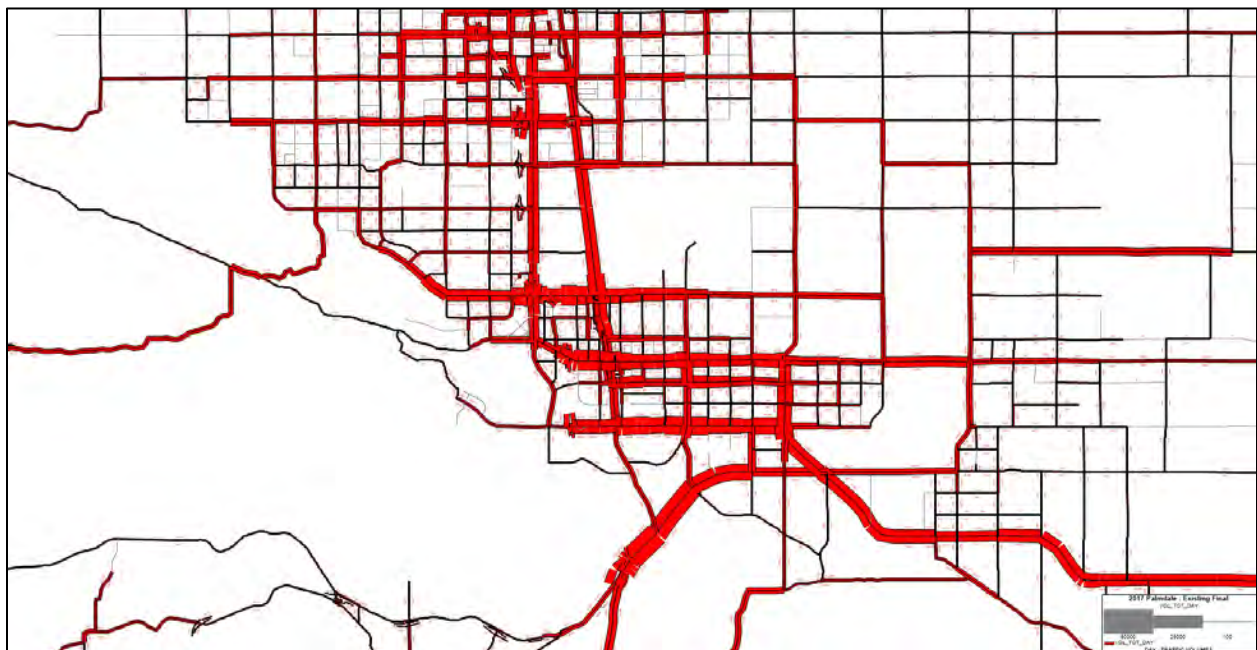
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Traffic assignments were performed to produce traffic volumes on the facilities inside and outside the Palmdale SOI. Traffic assignments are available for AM peak period, mid-day period, PM peak period, evening period, night period and daily. The daily traffic assignment volumes (band widths) are illustrated in Figure 5 (Figure 5b excludes SR 14).

Figure 5: 2017 Existing Daily Assigned Traffic Volumes



a. 2017 Existing Daily Assigned Traffic Volumes with SR 14



b. 2017 Existing Daily Assigned Traffic Volumes without SR 14

LEVEL OF SERVICE DEFINITIONS AND STANDARDS

Assessment of the volume and level of operation of selected corridors in the region is conducted biennially through the County’s Congestion Management Program (CMP) process. In addition, other traffic volume data is collected by local agencies during other planning exercises and traffic studies conducted for development projects.

By statute, each CMP must include a performance element containing measures that evaluate current and future multimodal system performance for the movement of goods and people. The level of service indicators for the highway and roadway system is based on the volume of traffic for designated sections of roadway during a typical day and the practical vehicular capacity of that segment. These two measures for each monitored segment of the roadway system are expressed as a ratio. The volume-to-capacity ratio (V/C) is then converted to an alpha descriptor identifying operating conditions and expressed as a level of service, LOS A through LOS F. Level of service A identifies the best operating conditions along a section of roadway and is characterized by free-flow traffic, low volumes, and little or no restrictions on maneuverability. Level of service F characterizes forced traffic flow with high traffic densities, slow travel speeds, and often stop-and-go conditions. Level of service standards in the county can be set no lower than LOS E or no lower than the current level of service and V/C ratio if the level of service is already below LOS E. City of Palmdale has established LOS D as its criterion for an acceptable level of service.

Table 6, Level of Service Criteria, defines and describes the level of service criteria for roadway segments. Table 7 reports the model daily assignment volumes compared to the existing counts and the level of service at various segments. Table 7 also identifies the level of service for arterial roadway segments based on these criteria. In some locations, differences in model results are to be expected. All future volumes are post-processed to reflect sensitivity to model/count differences.

Table 6: Level of Service Criteria

Level of Service	Interpretation	Volume-to-Capacity Ratio
A	Free-flow speeds prevail. Vehicles are almost unimpeded in their ability to maneuver within the traffic stream.	0.00–0.60
B	Reasonably free-flow speeds are maintained. The ability to maneuver within traffic is only slightly restricted.	0.61–0.70
C	Flow with speeds at or near free-flow speed of the roadway. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more care and vigilance on the part of the driver.	0.71–0.80
D	Speeds begin to decline slightly with increasing flows. In this range, density begins to increase somewhat more quickly with increasing flow. Freedom to maneuver within the traffic stream is noticeably limited.	0.81–0.90
E	Operation at capacity with no usable gaps in the traffic stream. Any disruption to the traffic stream has little or no room to dissipate.	0.91–1.0
F	Breakdown of the traffic flow with long queues of traffic. Unacceptable conditions.	> 1.0

Source: Los Angeles County Metropolitan Transit Authority 2003 Congestion Management Program.

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Table 7: 2017 Existing Daily Segment Volumes

LINKID	Roadway Segments		Lanes	Type of Arterial	Capacity	2017 Existing Counts			2017 Existing Model		
	Roadway	From/To				2-Way Count	V/C	LOS	2017_Tot_Flow	V/C	LOS
1001	Columbia Way/Avenue M	10th Street W to Sierra Hwy	4	Regional arterial	36,000	23,348	0.65	B	10,947	0.30	A
1002	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	4	Regional arterial	36,000	28,434	0.79	C	18,061	0.50	A
1003	Columbia Way/Avenue M	10th Street E to 20th Street E	4	Regional arterial	36,000	17,513	0.49	A	9,454	0.26	A
1004	Columbia Way/Avenue M	20th Street E to 30th Street E	4	Regional arterial	36,000	13,832	0.38	A	5,558	0.15	A
1005	Columbia Way/Avenue M	30th Street E to 40th Street E	4	Regional arterial	36,000	7,475	0.21	A	5,771	0.16	A
1006	Columbia Way/Avenue M	40th Street E to 50th Street	4	Regional arterial	36,000	10,559	0.29	A	5,304	0.15	A
1007	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	4	Major arterial	36,000	16,758	0.47	A	15,225	0.42	A
1008	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	4	Major arterial	36,000	20,985	0.58	A	15,225	0.42	A
1009	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	4	Major arterial	36,000	22,457	0.62	B	22,382	0.62	B
1010	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	4	Major arterial	36,000	27,509	0.76	C	22,532	0.63	B
1011	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	4	Major arterial	36,000	26,453	0.73	C	20,958	0.58	A
1012	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	6	Major arterial	54,000	41,536	0.77	C	36,131	0.67	B
1013	Rancho Vista Ave/Avenue P	10th Street W to SR 14	6	Major arterial	54,000	35,290	0.65	B	33,055	0.61	B
1014	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	4	Major arterial	36,000	23,332	0.65	B	25,923	0.72	C
1015	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	4	Major arterial	36,000	26,481	0.74	C	39,327	1.09	F
1016	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	4	Major arterial	36,000	22,334	0.62	B	36,838	1.02	F
1017	East Avenue P	Sierra Hwy to 8th Street E	4	Major arterial	36,000	33,863	0.94	E	27,833	0.77	C
1018	East Avenue P	8th Street E to 15th Street E	4	Major arterial	36,000	24,509	0.68	B	27,833	0.77	C
1019	East Avenue P	15th Street E to 20th Street E	4	Major arterial	36,000	24,973	0.69	B	25,851	0.72	C
1020	East Avenue P	20th Street E to 25th Street E	4	Major arterial	36,000	18,699	0.52	A	24,985	0.69	B
1021	East Avenue P	25th Street E to 30th Street E	4	Major arterial	36,000	14,695	0.41	A	18,093	0.50	A
1022	Avenue Q	Trade Center Dr to 5th Street W	4	Regional arterial	36,000	2,216	0.06	A	1,660	0.05	A
1023	Avenue Q	Division Street to 6th Street E	2	Major arterial	18,000	3,815	0.21	A	3,707	0.21	A
1024	Avenue Q	Sierra Hwy to 10th Street E	2	Major arterial	18,000	9,447	0.52	A	12,752	0.71	C
1025	Avenue Q	10th Street E to 20th Street E	2	Major arterial	18,000	8,323	0.46	A	10,201	0.57	A
1026	Avenue Q	20th Street E to 30th Street E	2	Major arterial	18,000	7,106	0.39	A	9,105	0.51	A
1027	Avenue Q	30th Street E to 40th Street E	2	Major arterial	18,000	4,960	0.28	A	6,277	0.35	A
1028	Elizabeth Lake Rd	25th Street W to 20th Street W	4	Major arterial	36,000	13,937	0.39	A	7,118	0.20	A
1029	Elizabeth Lake Rd	20th Street W to 15th Street W	4	Regional arterial	36,000	13,828	0.38	A	13,606	0.38	A
1030	Elizabeth Lake Rd	15th Street W to 10th Street W	4	Regional arterial	36,000	18,930	0.53	A	13,412	0.37	A

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Table 7: 2017 Existing Daily Segment Volumes

LINKID	Roadway Segments		Lanes	Type of Arterial	Capacity	2017 Existing Counts			2017 Existing Model		
	Roadway	From/To				2-Way Count	V/C	LOS	2017_Tot_Flow	V/C	LOS
1031	Palmdale Blvd	10th Street W to Trade Center Dr	4	Regional arterial	36,000	17,408	0.48	A	19,413	0.54	A
1032	Palmdale Blvd	Trade Center Dr to 5th Street W	4	Regional arterial	36,000	16,548	0.46	A	14,374	0.40	A
1033	Palmdale Blvd	5th Street W to State Route 14	4	Regional arterial	36,000	27,366	0.76	C	24,034	0.67	B
1034	Palmdale Blvd	Division Street to 5th St E	6	Major arterial	54,000	25,175	0.47	A	40,613	0.75	C
1035	Palmdale Blvd	5th Street E to 10th Street E	4	Major arterial	36,000	25,257	0.70	C	34,556	0.96	E
1036	Palmdale Blvd	10th Street E to 15th Street E	4	Major arterial	36,000	25,869	0.72	C	31,975	0.89	D
1037	Palmdale Blvd	15th Street E to 20th Street E	4	Major arterial	36,000	19,223	0.53	A	27,772	0.77	C
1038	Palmdale Blvd	20th Street E to 25th Street E	4	Major arterial	36,000	23,470	0.65	B	28,412	0.79	C
1040	Palmdale Blvd	40th Street E to 47th Street E	4	Major arterial	36,000	18,458	0.51	A	29,731	0.83	D
1041	Palmdale Blvd	50th Street E to 60th Street E	4	Major arterial	36,000	14,147	0.39	A	16,795	0.47	A
1042	Palmdale Blvd	70th Street E to 80th Street E	2	Major arterial	18,000	16,681	0.93	E	21,759	1.21	F
1043	E Avenue R	Sierra Hwy to 10th Street E	4	Major arterial	36,000	19,490	0.54	A	20,337	0.56	A
1044	E Avenue R	10th Street E to 20th Street E	4	Major arterial	36,000	18,495	0.51	A	23,916	0.66	B
1045	E Avenue R	20th Street E to 30th Street E	4	Major arterial	36,000	18,408	0.51	A	16,169	0.45	A
1046	E Avenue R	30th Street E to 40th Street E	3	Major arterial	27,000	14,851	0.55	A	23,278	0.86	D
1047	E Avenue R	40th Street E to 47th Street E	4	Major arterial	36,000	16,231	0.45	A	13,706	0.38	A
1048	E Avenue R	47th Street E to 60th Street E	4	Major arterial	36,000	15,158	0.42	A	4,970	0.14	A
1049	E Avenue R	60th Street E to 70th Street E	4	Major arterial	36,000	5,811	0.16	A	1,285	0.04	A
1050	Avenue S	Tovey Avenue to Tierra Subida Ave	4	Major arterial	36,000	9,346	0.26	A	6,971	0.19	A
1051	Avenue S	Tierra Subida Ave to SR 14	4	Major arterial	36,000	14,027	0.39	A	7,099	0.20	A
1052	Avenue S	SR 14 to 5th Street E	4	Major arterial	36,000	13,190	0.37	A	27,924	0.78	C
1053	Avenue S	5th Street E to Sierra Hwy	4	Major arterial	36,000	25,828	0.72	C	27,339	0.76	C
1054	Avenue S	Sierra Hwy to 10th Street E	4	Major arterial	36,000	32,170	0.89	D	37,784	1.05	F
1055	Avenue S	10th Street E to 20th Street E	4	Major arterial	36,000	29,830	0.83	D	35,288	0.98	E
1056	Avenue S	20th Street E to 25th Street E	4	Major arterial	36,000	30,323	0.84	D	35,328	0.98	E
1057	Avenue S	25th Street E to 30th Street E	4	Major arterial	36,000	29,058	0.81	D	35,702	0.99	E
1058	Avenue S	30th Street E to 35th Street E	6	Major arterial	54,000	24,137	0.45	A	28,809	0.53	A
1059	Avenue S	35th Street E to 40th Street E	6	Major arterial	54,000	23,612	0.44	A	29,185	0.54	A
1060	Avenue S	40th Street E to 47th Street E	6	Major arterial	54,000	23,867	0.44	A	33,374	0.62	B
1061	Avenue S	47th Street E to 55th Street E	4	Major arterial	36,000	21,305	0.59	A	11,417	0.32	A

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Table 7: 2017 Existing Daily Segment Volumes

LINKID	Roadway Segments		Lanes	Type of Arterial	Capacity	2017 Existing Counts			2017 Existing Model		
	Roadway	From/To				2-Way Count	V/C	LOS	2017_Tot_Flow	V/C	LOS
1062	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	4	Regional arterial	36,000	48,960	1.36	F	40,919	1.14	F
1063	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	4	Regional arterial	36,000	40,419	1.12	F	32,686	0.91	E
1064	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	4	Regional arterial	36,000	22,788	0.63	B	18,197	0.51	A
1065	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	4	Regional arterial	36,000	22,898	0.64	B	18,197	0.51	A
1066	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	4	Regional arterial	36,000	13,027	0.36	A	18,197	0.51	A
1067	10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	4	Regional arterial	36,000	15,186	0.42	A	21,879	0.61	B
1068	10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	4	Regional arterial	36,000	19,402	0.54	A	21,538	0.60	A
1069	10th Street W/Tierra Subida Ave	W Avenue O to SR 14	4	Regional arterial	36,000	17,627	0.49	A	20,532	0.57	A
1070	10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	6	Regional arterial	54,000	35,324	0.65	B	33,268	0.62	B
1071	10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology Dr	6	Regional arterial	54,000	31,954	0.59	A	23,914	0.44	A
1072	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	5	Regional arterial	45,000	39,039	0.87	D	20,004	0.44	A
1073	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	4	Major arterial	36,000	16,569	0.46	A	12,169	0.34	A
1074	Sierra Hwy	Columbia Way to E Avenue N	4	Regional arterial	36,000	25,408	0.71	C	23,325	0.65	B
1075	Sierra Hwy	E Avenue N to E Avenue O	4	Regional arterial	36,000	27,037	0.75	C	24,702	0.69	B
1076	Sierra Hwy	E Avenue O to E Avenue P	4	Regional arterial	36,000	32,133	0.89	D	25,292	0.70	C
1077	Sierra Hwy	E Avenue P to E Avenue Q	4	Major arterial	36,000	14,366	0.40	A	27,740	0.77	C
1078	Sierra Hwy	E Avenue Q to Palmdale Blvd	4	Major arterial	36,000	15,176	0.42	A	15,554	0.43	A
1079	Sierra Hwy	Palmdale Blvd to E Avenue R	4	Major arterial	36,000	9,993	0.28	A	14,783	0.41	A
1080	Sierra Hwy	E Avenue R to E Avenue S	4	Major arterial	36,000	7,289	0.20	A	16,575	0.46	A
1081	Sierra Hwy	E Avenue S to Pearblossom Hwy	4	Major arterial	36,000	8,070	0.22	A	8,009	0.22	A
1082	10th Street E	E Avenue P to E Avenue Q	2	Major arterial	18,000	2,357	0.13	A	712	0.04	A
1083	10th Street E	E Avenue Q to E Palmdale Blvd	4	Major arterial	36,000	5,732	0.16	A	1,179	0.03	A
1084	10th Street E	E. Palmdale Blvd to Avenue R	2	Secondary arterial	18,000	5,756	0.32	A	9,545	0.53	A
1085	10th Street E	Avenue R to Avenue S1	2	Secondary arterial	18,000	3,898	0.22	A	2,907	0.16	A
1086	20th Street E	E Avenue P to E Avenue Q	2	Secondary arterial	18,000	4,738	0.26	A	868	0.05	A
1087	20th Street E	E Avenue Q to Palmdale Blvd	2	Secondary arterial	18,000	7,760	0.43	A	429	0.02	A
1088	20th Street E	Palmdale Blvd to E Avenue R	4	Secondary arterial	36,000	13,063	0.36	A	1,453	0.04	A
1089	20th Street E	E Avenue R to E Avenue S	4	Secondary arterial	36,000	12,215	0.34	A	1,724	0.05	A
1090	25th Street E	E Avenue P to E Avenue Q	2	Major arterial	18,000	4,102	0.23	A	9,277	0.52	A
1091	25th Street E	E Avenue Q to Palmdale Blvd	2	Major arterial	18,000	6,948	0.39	A	12,727	0.71	C

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Table 7: 2017 Existing Daily Segment Volumes

LINKID	Roadway Segments		Lanes	Type of Arterial	Capacity	2017 Existing Counts			2017 Existing Model			
	Roadway	From/To				2-Way Count	V/C	LOS	2017_Tot_Flow	V/C	LOS	
1092	25th Street E	Palmdale Blvd to E Avenue R	4	Major arterial	36,000	12,851	0.36	A	23,475	0.65	B	
1093	25th Street E	E Avenue R to E Avenue S	4	Major arterial	36,000	16,629	0.46	A	15,749	0.44	A	
1094	25th Street E	E Avenue S to Pearblossom Hwy	4	Major arterial	36,000	14,269	0.40	A	22,843	0.63	B	
1095	30th Street E	E Avenue P to E Avenue Q	2	Major arterial	18,000	5,987	0.33	A	3,708	0.21	A	
1096	30th Street E	E Avenue Q to Palmdale Blvd	2	Major arterial	18,000	6,083	0.34	A	2,743	0.15	A	
1097	30th Street E	Palmdale Blvd to E Avenue R	4	Major arterial	36,000	7,721	0.21	A	1,295	0.04	A	
1098	30th Street E	E Avenue R to E Avenue S	4	Major arterial	36,000	8,871	0.25	A	2,452	0.07	A	
1099	40th Street E	E Avenue P to E Avenue Q	2	Major arterial	18,000	5,610	0.31	A	5,769	0.32	A	
1100	40th Street E	E Avenue Q to E Palmdale Blvd	2	Major arterial	18,000	7,185	0.40	A	6,713	0.37	A	
1101	40th Street E	E Palmdale Blvd to E Avenue R	3	Major arterial	27,000	9,892	0.37	A	5,754	0.21	A	
1102	40th Street E	E Avenue R to E Avenue S	3	Major arterial	27,000	9,037	0.33	A	3,635	0.13	A	
1103	40th Street E	E Avenue S to Sierra Hwy	2	Major arterial	18,000	10,505	0.58	A	13,530	0.75	C	
1104	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	2	Major arterial	18,000	18,016	1.00	F	10,381	0.58	A	
1105	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	2	Major arterial	18,000	12,874	0.72	C	9,551	0.53	A	
1106	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	4	Regional arterial	36,000	25,702	0.71	C	23,134	0.64	B	
1107	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	4	Regional arterial	36,000	26,908	0.75	C	32,008	0.89	D	
1108	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	4	Regional arterial	36,000	19,854	0.55	A	28,501	0.79	C	
1109	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	5	Regional arterial	45,000	24,514	0.54	A	35,084	0.78	C	
1110	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	4	Regional arterial	36,000	24,367	0.68	B	25,270	0.70	C	
1111	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	4	Regional arterial	36,000	21,099	0.59	A	27,236	0.76	C	
1120	Technology Dr	10th Street W to Trade Center Dr	4	Major arterial	36,000	7,205	0.20	A	3,852	0.11	A	
1121	Technology Dr	5th Street W to Division St	4	Major arterial	36,000	7,574	0.21	A	5,113	0.14	A	
1122	Technology Dr	Division St to Sierra Hwy	4	Major arterial	36,000	7,805	0.22	A	8,902	0.25	A	
Total LOS A through D								108			103	
Total LOS E									2			5
Total LOS F									3			5
Total LOS Reported								113			113	

Traffic Report

Table 8 reports the link-based VMT, VHT, VHD, and average speeds by facility in the Palmdale SOI for all trips regardless of trip origin or destination (including pass-through trips).

Table 8: 2017 Existing Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips

Facility	AM Peak				PM Peak				Daily			
	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay
Freeways	250,250	4,517	55.4	942	290,275	4,600	63.1	453	1,084,421	17,015	63.7	1,523
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	50,301	786	64.0	68	55,530	821	67.6	28	118,683	1,791	66.3	95
Expressways/parkways	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Principal arterials	183,392	4,673	39.2	624	286,587	7,374	38.9	1,021	1,023,896	24,923	41.1	2,281
Minor arterials	220,022	5,389	40.8	353	359,485	8,914	40.3	669	1,173,770	28,367	41.4	1,369
Major collectors	99,797	2,629	38.0	233	145,238	3,757	38.7	273	463,447	11,700	39.6	600
Minor collectors	1,845	51	36.3	1	3,196	92	34.8	4	9,393	270	34.8	8
Freeway ramps	11,323	630	18.0	288	16,345	830	19.7	345	57,372	2,626	21.9	907
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	64,106	2,479	25.9	0	103,593	4,022	25.8	0	344,572	13,394	25.7	0
Total—All Links	881,037	21,155	41.6	2,509	1,260,249	30,411	41.4	2,792	4,275,553	100,085	42.7	6,783

SUMMARY

Daily trips are defined as having an origin, destination or both within the Palmdale SOI and do not include pass-through trips. The Palmdale trips generate a VMT of 8,028,726 and a VHT of 272,454 on all the roadway way facilities within the SCAG region. The Palmdale SOI only accounts for 25.1 percent of the total VMT generated, Lancaster accounts for 12.9 percent, High Desert region accounts for 3.8 percent, rest of Los Angeles County accounts for 36.4 percent.

The average trip length for trips originating and staying within the Palmdale SOI is 4.25 miles. This constitutes 70.2 percent of all the Palmdale trips. The average trip length for trips originating in Palmdale SOI and having a destination anywhere in the SCAG region including itself is 11.87 miles.

Based on the 2017 existing counts, the daily segment-based LOS results show the number of segments operating at LOS E is two and LOS F is three and accounts for 1.8 percent and 2.7 percent, respectively, of all the segments analyzed. For the 2017 existing model, the daily segment-based LOS results show the number of segments operating at LOS E is five and LOS F is five and accounts for 4.4 percent and 4.4 percent, respectively, of all the segments analyzed.

The Palmdale transportation network as a “system,” which includes all roadway facilities within the Palmdale SOI, generates 4,275,533 VMT, 100,085 VHT and 6,783 VHD daily. This accounts for all trips, including pass through trips, using the highway network within the Palmdale SOI.

Future Conditions

ROADWAY IMPROVEMENTS

The future highway network is consistent with the SCAG model assumptions for the forecast year 2040, which is the farthest out horizon year available with the SCAG regional model. The 2040 horizon year is the basis for the future year 2045 forecasts for the Palmdale General Plan scenarios, with several roadway improvements additionally assumed for the 2045 horizon year. These include (noting some of them may have already been upgraded):

- Avenue P/Rancho Vista Boulevard
 - Three lanes per direction between west of 30th Street West and Division Street
 - Two lanes per direction between Division Street and 20th Street East
 - One lane per direction between 20th Street East and 50th Street East.
- Technology Drive/East Avenue P8
 - Two lanes per direction between Sierra Highway and 20th Street East.
- East Avenue R
 - Two lanes per direction between Sierra Highway and 70th Street East.
- East Avenue S
 - Three lanes per direction between 30th Street and 47th Street East.
- East Avenue Q
 - Connection between 6th Street and Sierra Highway to facilitate better access to the proposed Palmdale High-Speed Rail Station

The 2045 Preferred Plan also included the Palmdale High-Speed Rail Station boardings, which are integrated into the traffic assignment procedures. Daily boarding for the 2045 scenarios are reported to be 5,600 riders one way, per the Transportation Technical Report published by the California High-Speed Rail Authority Palmdale to Burbank Project Section and dated March 2019.

Following a review by the City of Palmdale, the 2045 Preferred Plan scenario highway network was updated based on their recommendations.

Figure 6 illustrates the future roadway network in Palmdale, including a general alignment for the proposed High Desert Corridor freeway.

Figure 6. Future Roadway Network

Placeholder

2045 BASE

The 2045 Base scenario used the SCAG model forecast year 2040 dataset, and the network assumptions are consistent with the RTP assumptions. The 2045 socio-economic data for the Palmdale SOI was updated with inputs from the City of Palmdale. The socio-economic data outside the Palmdale SOI is consistent with the SCAG assumptions for the region for the year 2040. The SCAG four-step model procedures were run with the updated land use in the Palmdale SOI. The Table 9 lists the planning variable assumptions for the region.

Table 9: 2045 Base Socio-Economic Forecast

	Population	Households	Employment
Palmdale sphere	240,515	72,840	67,085
Lancaster sphere	218,843	69,963	59,678
High Desert region	40,845	14,409	5,030
Ventura County	282,025	92,482	101,050
Los Angeles County remainder	11,001,144	3,783,739	5,117,195
Orange County	3,460,381	1,152,340	1,898,952
Riverside County	3,183,378	1,054,557	1,174,500
San Bernardino County	2,731,308	854,360	1,028,132
Imperial County	965,566	312,223	419,808
Externals	0	0	0
Seaport/airport	0	0	0
Total Region	22,124,005	7,406,913	9,871,430

Select zone traffic assignment procedures were performed on the zones within the Palmdale SOI to account for trips that were generated or attracted to Palmdale SOI only. All other trips were not counted as they were pass through trips. The daily average trip lengths for the Palmdale only trips to different locations are shown in Table 10. The daily link-based VMT, VHT and the average speeds by facility types are shown in Table 11 for the Palmdale only trips. The daily percent share of VMT for trips originating in the Palmdale SOI to all areas in the region, including Palmdale, is illustrated in Figure 7.

Table 10: 2045 Base Average Trip Length for Palmdale Sphere of Influence Trips

From/To	Trip Length (II and IX*) (miles)	Percent Share of Trips
Palmdale sphere	4.43	71.7%
Lancaster sphere	9.46	15.4%
High Desert region	15.52	2.5%
Imperial County	228.35	0.0%
Los Angeles County	55.68	6.8%
Orange County	108.62	0.4%
Riverside County	110.91	0.3%
San Bernardino County	68.66	1.3%
Ventura County	75.65	0.4%
Externals	68.69	1.0%
Seaport/airport	38.89	0.3%
Weighted Average	11.56	100.0%

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI

IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.

Table 11: 2045 Base Palmdale Sphere of Influence (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

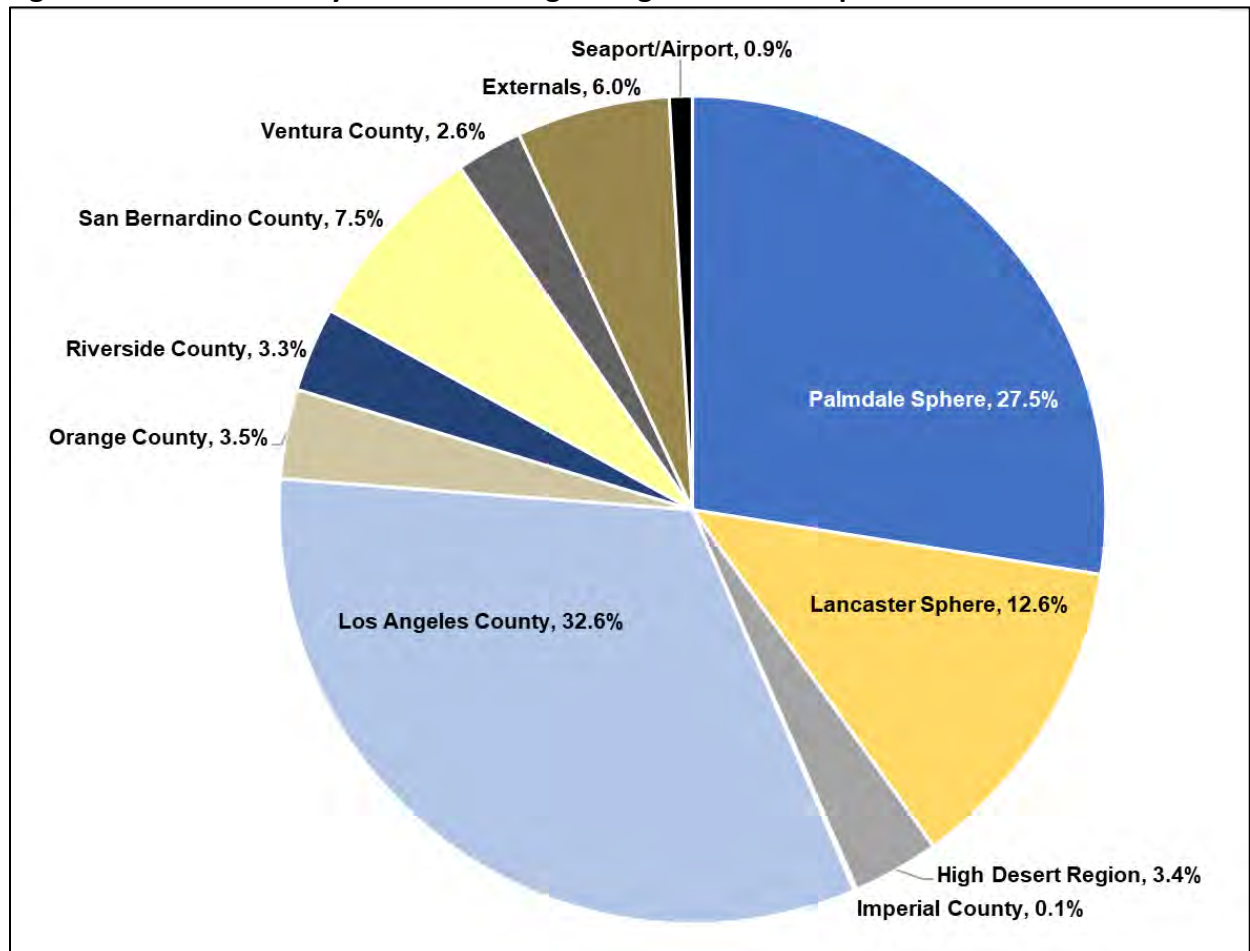
Facility	VMT	VHT	Average Speed (mph)
Freeways	2,945,756	129,261	44.7
HOT facilities	9,285	271	63.3
HOV facilities	284,422	17,684	47.7
Expressways/parkways	5,650	213	51.2
Principal arterials	1,671,644	47,215	29.8
Minor arterials	1,897,218	58,807	30.3
Major collectors	1,321,027	39,778	23.6
Minor connectors	43,307	1,357	29.0
Freeway ramps	156,041	22,220	20.1
Truck lanes only	7,485	730	22.2
Centroid connectors	520,432	20,729	24.4
Total without centroid connectors	8,341,835	317,535	35.2
Total of All Links	8,862,268	338,264	34.2

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI

IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region

XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI

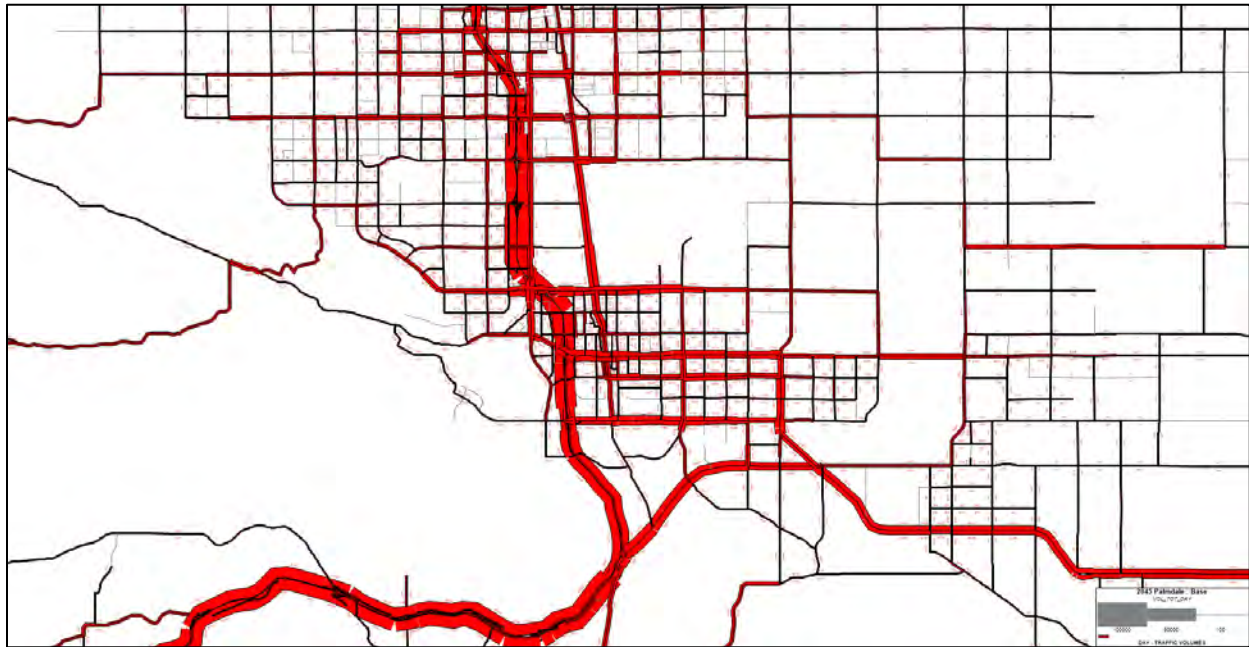
Figure 7: 2045 Base Daily VMT Share Originating in Palmdale Sphere of Influence



Traffic Report

Traffic assignments were performed to produce traffic volumes on the facilities inside and outside the Palmdale SOI. Traffic assignments are available for AM peak period, mid-day period, PM peak period, evening period, night period and daily. The daily traffic assignment volumes (bandwidths) are shown in Figure 8. The post-processed daily assignment volumes and the LOS at various segments are shown in the Table 12.

Figure 8: 2045 Base Daily Traffic Volumes Forecast



Traffic Report

Table 12: 2045 Base Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base			
	Roadway	From/To		2045Base_Tot_Flow	Capacity	V/C	LOS
1001	Columbia Way/Avenue M	10th Street W to Sierra Hwy	4	31,993	36,000	0.89	D
1002	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	4	33,414	36,000	0.93	E
1003	Columbia Way/Avenue M	10th Street E to 20th Street E	4	20,665	36,000	0.57	A
1004	Columbia Way/Avenue M	20th Street E to 30th Street E	4	15,610	36,000	0.43	A
1005	Columbia Way/Avenue M	30th Street E to 40th Street E	4	10,578	36,000	0.29	A
1006	Columbia Way/Avenue M	40th Street E to 50th Street	4	13,306	36,000	0.37	A
1007	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	4	20,985	36,000	0.58	A
1008	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	4	20,985	36,000	0.58	A
1009	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	4	22,457	36,000	0.62	B
1010	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	4	27,517	36,000	0.76	C
1011	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	4	27,426	36,000	0.76	C
1012	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	6	42,819	54,000	0.79	C
1013	Rancho Vista Ave/Avenue P	10th Street W to SR 14	6	37,114	54,000	0.69	B
1014	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	4	23,823	54,000	0.44	A
1015	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	4	28,050	45,000	0.62	B
1016	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	4	22,334	36,000	0.62	B
1017	East Avenue P	Sierra Hwy to 8th Street E	4	41,328	36,000	1.15	F
1018	East Avenue P	8th Street E to 15th Street E	4	41,328	36,000	0.89	D
1019	East Avenue P	15th Street E to 20th Street E	4	33,406	36,000	0.93	E
1020	East Avenue P	20th Street E to 25th Street E	4	26,501	36,000	0.74	C
1021	East Avenue P	25th Street E to 30th Street E	4	20,757	36,000	0.58	A
1022	Avenue Q	Trade Center Dr to 5th Street W	4	4,700	36,000	0.13	A
1023	Avenue Q	Division Street to 6th Street E	2	8,517	18,000	0.47	A
1024	Avenue Q	Sierra Hwy to 10th Street E	2	12,262	18,000	0.68	B
1025	Avenue Q	10th Street E to 20th Street E	2	8,323	18,000	0.46	A
1026	Avenue Q	20th Street E to 30th Street E	2	7,375	18,000	0.41	A
1027	Avenue Q	30th Street E to 40th Street E	2	8,100	18,000	0.45	A
1028	Elizabeth Lake Rd	25th Street W to 20th Street W	4	16,726	36,000	0.46	A
1029	Elizabeth Lake Rd	20th Street W to 15th Street W	4	17,906	36,000	0.50	A
1030	Elizabeth Lake Rd	15th Street W to 10th Street W	4	22,454	36,000	0.62	B
1031	Palmdale Blvd	10th Street W to Trade Center Dr	4	24,318	54,000	0.45	A

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Table 12: 2045 Base Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base			
	Roadway	From/To		2045Base_Tot_Flow	Capacity	V/C	LOS
1032	Palmdale Blvd	Trade Center Dr to 5th Street W	4	20,913	54,000	0.39	A
1033	Palmdale Blvd	5th Street W to State Route 14	4	30,395	54,000	0.56	A
1034	Palmdale Blvd	Division Street to 5th St E	6	30,499	54,000	0.56	A
1035	Palmdale Blvd	5th Street E to 10th Street E	4	30,526	54,000	0.57	A
1036	Palmdale Blvd	10th Street E to 15th Street E	4	30,423	36,000	0.85	D
1037	Palmdale Blvd	15th Street E to 20th Street E	4	22,630	36,000	0.63	B
1038	Palmdale Blvd	20th Street E to 25th Street E	4	28,230	36,000	0.78	C
1040	Palmdale Blvd	40th Street E to 47th Street E	4	24,334	36,000	0.68	B
1041	Palmdale Blvd	50th Street E to 60th Street E	4	16,404	36,000	0.46	A
1042	Palmdale Blvd	70th Street E to 80th Street E	2	16,681	18,000	0.93	E
1043	E Avenue R	Sierra Hwy to 10th Street E	4	20,559	36,000	0.57	A
1044	E Avenue R	10th Street E to 20th Street E	4	20,289	36,000	0.56	A
1045	E Avenue R	20th Street E to 30th Street E	4	23,421	36,000	0.65	B
1046	E Avenue R	30th Street E to 40th Street E	3	20,743	36,000	0.58	A
1047	E Avenue R	40th Street E to 47th Street E	4	21,629	36,000	0.60	B
1048	E Avenue R	47th Street E to 60th Street E	4	16,355	36,000	0.45	A
1049	E Avenue R	60th Street E to 70th Street E	4	7,563	36,000	0.21	A
1050	Avenue S	Tovey Avenue to Tierra Subida Ave	4	9,505	36,000	0.26	A
1051	Avenue S	Tierra Subida Ave to SR 14	4	14,400	36,000	0.40	A
1052	Avenue S	SR 14 to 5th Street E	4	16,681	36,000	0.46	A
1053	Avenue S	5th Street E to Sierra Hwy	4	29,095	36,000	0.81	D
1054	Avenue S	Sierra Hwy to 10th Street E	4	36,424	36,000	1.01	F
1055	Avenue S	10th Street E to 20th Street E	4	33,024	36,000	0.92	E
1056	Avenue S	20th Street E to 25th Street E	4	32,796	36,000	0.91	E
1057	Avenue S	25th Street E to 30th Street E	4	29,920	36,000	0.83	D
1058	Avenue S	30th Street E to 35th Street E	6	24,137	54,000	0.45	A
1059	Avenue S	35th Street E to 40th Street E	6	23,612	54,000	0.44	A
1060	Avenue S	40th Street E to 47th Street E	6	23,867	54,000	0.44	A
1061	Avenue S	47th Street E to 55th Street E	4	23,819	36,000	0.66	B
1062	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	4	56,434	36,000	1.57	F
1063	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	4	47,628	36,000	1.32	F

Traffic Report

Table 12: 2045 Base Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base			
	Roadway	From/To		2045Base_Tot_Flow	Capacity	V/C	LOS
1064	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	4	33,627	36,000	0.93	E
1065	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	4	33,627	36,000	0.93	E
1066	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	4	33,627	36,000	0.93	E
1067	10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	4	15,470	36,000	0.43	A
1068	10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	4	21,544	36,000	0.60	A
1069	10th Street W/Tierra Subida Ave	W Avenue O to SR 14	4	17,627	36,000	0.49	A
1070	10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	6	36,947	54,000	0.68	B
1071	10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology Dr	6	43,093	54,000	0.80	C
1072	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	5	46,068	45,000	1.02	F
1073	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	4	20,129	36,000	0.56	A
1074	Sierra Hwy	Columbia Way to E Avenue N	4	32,154	36,000	0.89	D
1075	Sierra Hwy	E Avenue N to E Avenue O	4	33,741	36,000	0.94	E
1076	Sierra Hwy	E Avenue O to E Avenue P	4	46,043	36,000	1.28	F
1077	Sierra Hwy	E Avenue P to E Avenue Q	4	15,375	36,000	0.43	A
1078	Sierra Hwy	E Avenue Q to Palmdale Blvd	4	15,176	36,000	0.42	A
1079	Sierra Hwy	Palmdale Blvd to E Avenue R	4	11,555	36,000	0.32	A
1080	Sierra Hwy	E Avenue R to E Avenue S	4	7,289	36,000	0.20	A
1081	Sierra Hwy	E Avenue S to Pearblossom Hwy	4	8,070	36,000	0.22	A
1082	10th Street E	E Avenue P to E Avenue Q	2	2,357	18,000	0.13	A
1083	10th Street E	E Avenue Q to E Palmdale Blvd	4	5,966	36,000	0.17	A
1084	10th Street E	E. Palmdale Blvd to Avenue R	2	8,945	18,000	0.50	A
1085	10th Street E	Avenue R to Avenue S1	2	5,055	18,000	0.28	A
1086	20th Street E	E Avenue P to E Avenue Q	2	8,506	18,000	0.47	A
1087	20th Street E	E Avenue Q to Palmdale Blvd	2	8,996	18,000	0.50	A
1088	20th Street E	Palmdale Blvd to E Avenue R	4	14,236	36,000	0.40	A
1089	20th Street E	E Avenue R to E Avenue S	4	13,125	36,000	0.36	A
1090	25th Street E	E Avenue P to E Avenue Q	2	8,458	18,000	0.47	A
1091	25th Street E	E Avenue Q to Palmdale Blvd	2	8,663	18,000	0.48	A
1092	25th Street E	Palmdale Blvd to E Avenue R	4	15,584	36,000	0.43	A
1093	25th Street E	E Avenue R to E Avenue S	4	19,259	36,000	0.53	A
1094	25th Street E	E Avenue S to Pearblossom Hwy	4	17,793	36,000	0.49	A

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Table 12: 2045 Base Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base			
	Roadway	From/To		2045Base_Tot_Flow	Capacity	V/C	LOS
1095	30th Street E	E Avenue P to E Avenue Q	2	8,526	18,000	0.47	A
1096	30th Street E	E Avenue Q to Palmdale Blvd	2	8,295	18,000	0.46	A
1097	30th Street E	Palmdale Blvd to E Avenue R	4	8,891	36,000	0.25	A
1098	30th Street E	E Avenue R to E Avenue S	4	8,871	36,000	0.25	A
1099	40th Street E	E Avenue P to E Avenue Q	2	9,856	18,000	0.55	A
1100	40th Street E	E Avenue Q to E Palmdale Blvd	2	7,185	18,000	0.40	A
1101	40th Street E	E Palmdale Blvd to E Avenue R	3	13,236	27,000	0.49	A
1102	40th Street E	E Avenue R to E Avenue S	3	13,439	27,000	0.50	A
1103	40th Street E	E Avenue S to Sierra Hwy	2	12,118	18,000	0.67	B
1104	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	2	20,800	18,000	1.16	F
1105	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	2	14,713	18,000	0.82	D
1106	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	4	28,780	36,000	0.80	C
1107	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	4	32,805	36,000	0.91	E
1108	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	4	25,499	36,000	0.71	C
1109	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	5	29,940	45,000	0.67	B
1110	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	4	15,334	36,000	0.43	A
1111	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	4	33,448	36,000	0.93	E
1120	Technology Dr	10th Street W to Trade Center Dr	4	9,375	36,000	0.26	A
1121	Technology Dr	5th Street W to Division St	4	10,498	36,000	0.29	A
1122	Technology Dr	Division St to Sierra Hwy	4	9,096	36,000	0.25	A
Total LOS A Through D							95
Total LOS E							11
Total LOS F							7
Total LOS Reported							113

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The Table 13 reports the link-based VMT, VHT, VHD, and average speeds by facility for the Palmdale SOI for all trips regardless of trip origin or destination.

Table 13: 2045 Base Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips

Facility	AM Peak				PM Peak				Daily			
	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay
Freeways	270,601	5,517	49.1	1,651	305,078	5,068	60.2	710	1,181,686	19,501	60.6	2,620
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	69,103	1,239	55.8	252	68,108	1,040	65.5	67	145,399	2,395	60.7	318
Expressways/parkways	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Principal arterials	226,065	6,363	35.5	1,382	338,346	9,459	35.8	1,972	1,257,146	32,740	38.4	5,022
Minor arterials	262,555	6,673	39.3	658	419,648	10,697	39.2	1,065	1,401,721	34,643	40.5	2,427
Major collectors	123,229	3,449	35.7	489	180,141	4,873	37.0	519	568,232	14,924	38.1	1,182
Minor collectors	2,741	73	37.7	2	3,415	113	30.2	19	11,491	349	32.9	32
Freeway ramps	11,492	582	19.8	232	17,115	871	19.6	363	61,651	2,836	21.7	990
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	73,459	2,881	25.5	0	121,957	4,786	25.5	0	402,448	15,803	25.5	0
Total—All Links	1,039,246	26,775	38.8	4,666	1,453,807	36,907	39.4	4,714	5,029,773	123,190	40.8	12,590

Summary

Daily trips are defined as having an origin, destination or both within the Palmdale SOI and do not include pass-through trips. The Palmdale trips generate a VMT of 8,862,268 and a VHT of 338,264 on all the roadway way facilities within the SCAG region. The Palmdale SOI only accounts for 27.5 percent of the total VMT generated, Lancaster accounts for 12.6 percent, High Desert region accounts for 3.4 percent, while the rest of Los Angeles County accounts for 32.6 percent.

The average trip length for trips originating and staying within the Palmdale SOI is 4.43 miles and this constitutes 71.7 percent of all the Palmdale trips. The average trip length for trips originating in Palmdale SOI and having a destination anywhere in the SCAG region including itself is 11.56 miles.

Daily segment-based LOS results show the number of segments operating at LOS E is eleven and LOS F is seven and accounts for 9.7 percent and 6.2 percent, respectively, of all the segments analyzed.

The Palmdale transportation network as a system, which includes all roadway facilities within the Palmdale SOI, generates 5,029,773 VMT, 123,190 VHT and 12,590 VHD daily. This accounts for all trips, including pass through trips, using the highway network within the Palmdale SOI.

2045 BASE WITH HIGH DESERT CORRIDOR FREEWAY

The 2045 base with High Desert Corridor freeway used the 2045 Base year dataset and the network assumptions are consistent with the RTP except for the HDC facility. The 2045 socio-economic data for the Palmdale SOI was updated with inputs from the City of Palmdale. The socio-economic data outside the Palmdale SOI is consistent with the SCAG assumptions for the region for the year 2040. The High Desert Corridor Freeway was coded from SR 14 to SR 138. The 2045 Base scenario trip tables were used to perform traffic assignments only. Table 14 reports the land use assumptions for the region. This scenario was performed to illustrate the effects of the HDC on the Palmdale street system as the HDC would be major east–west freeway connecting Palmdale and Victorville. The HDC may not be built before 2050 or beyond as no funding sources are identified.

Select zone traffic assignment procedures were performed on the zones within the Palmdale SOI to account for trips that were generated or attracted to Palmdale SOI only. All other trips were not counted as they were pass through trips.

Table 14: 2045 Base with High Desert Corridor Freeway Socio-Economic Forecast

	Population	Households	Employment
Palmdale sphere	240,515	72,840	67,085
Lancaster Sphere	218,843	69,963	59,678
High Desert region	40,845	14,409	5,030
Ventura County	282,025	92,482	101,050
Los Angeles County remainder	11,001,144	3,783,739	5,117,195
Orange County	3,460,381	1,152,340	1,898,952
Riverside County	3,183,378	1,054,557	1,174,500
San Bernardino County	2,731,308	854,360	1,028,132
Imperial County	965,566	312,223	419,808
Externals	0	0	0
Seaport/airport	0	0	0
Total Region	22,124,005	7,406,913	9,871,430

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The daily average trip lengths for the Palmdale only trips to different locations are reported in Table 15.

Table 15: 2045 Base with High Desert Corridor Average Trip Length for Palmdale SOI Trips

From/To	Trip Length (II and IX*) (miles)	Percent Share of Trips
Palmdale sphere	4.46	71.9%
Lancaster sphere	9.53	15.3%
High Desert region	15.49	2.5%
Imperial County	227.28	0.0%
Los Angeles County	55.83	6.6%
Orange County	108.82	0.4%
Riverside County	110.51	0.3%
San Bernardino County	69.10	1.3%
Ventura County	75.73	0.4%
Externals	68.89	1.0%
Seaport/airport	39.03	0.3%
Weighted Average	11.62	100.0%

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI

IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.

The daily link-based VMT, VHT and the average speeds by facility types are reported in Table 16 for Palmdale only trips.

Table 16: 2045 Base with High Desert Corridor Palmdale Sphere of Influence (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	3,068,071	131,896	44.8
HOT facilities	10,024	292	63.2
HOV facilities	282,077	17,774	47.7
Expressways/parkways	192,155	3,645	51.7
Principal arterials	1,579,551	44,131	29.8
Minor arterials	1,696,186	53,626	30.2
Major collectors	1,301,285	39,251	23.6
Minor connectors	48,311	1,537	29.0
Freeway ramps	166,282	22,421	20.2
Truck lanes only	7,516	710	23.0
Centroid connectors	517,058	20,595	24.4
Total without centroid connectors	8,351,459	315,282	35.2
Total of All Links	8,868,517	335,877	34.2

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI

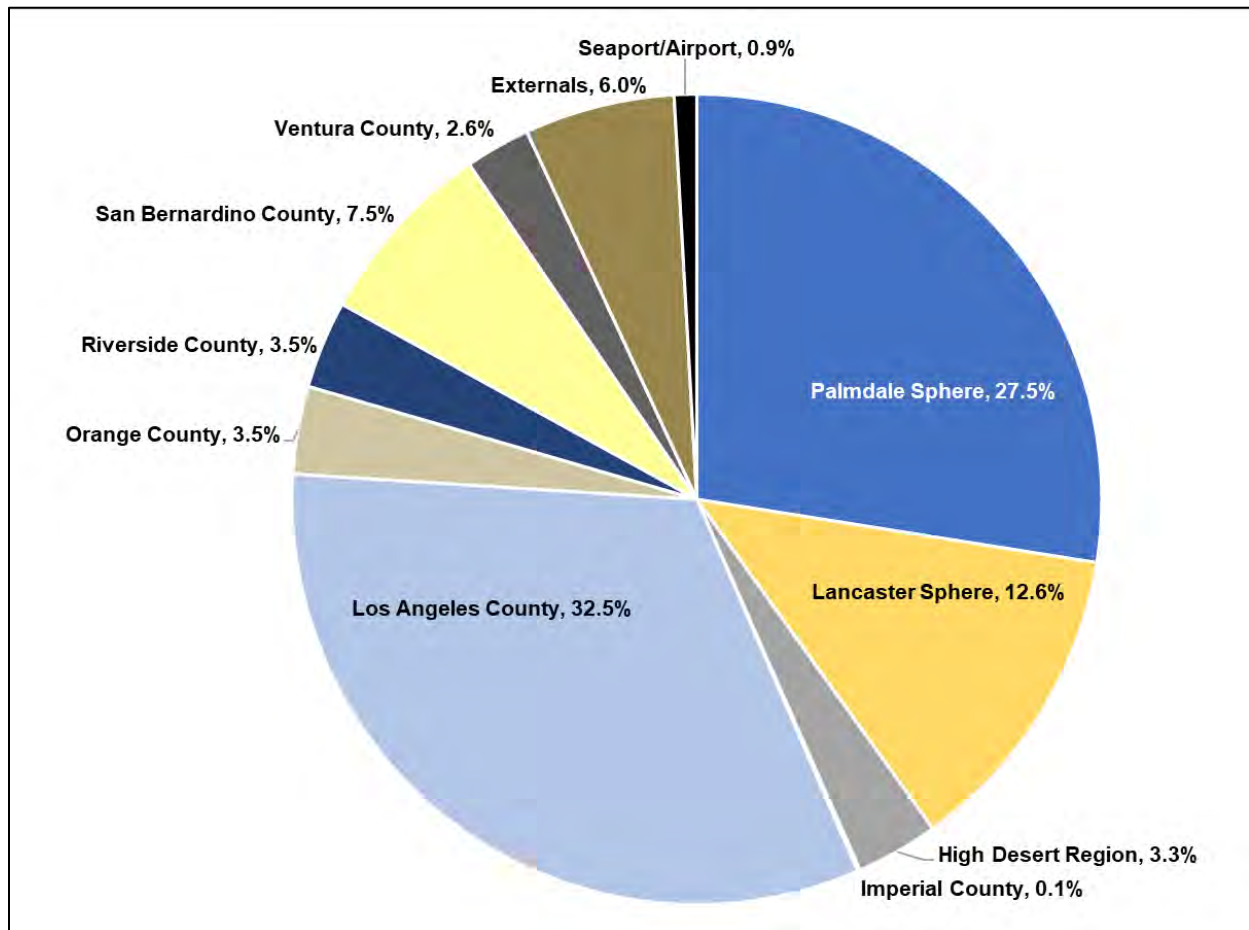
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region

XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI

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The daily percent share of the VMT for trips originating in the Palmdale SOI to all areas in the region, including Palmdale, is illustrated in Figure 9.

Figure 9: 2045 Base with High Desert Corridor Daily VMT Share Originating in the Palmdale Sphere of Influence



Traffic assignments are performed to produce traffic volumes on the various facilities, both within and outside the Palmdale SOI. Traffic assignments are available for AM peak period, mid-day period, PM peak period, evening period, night period and daily. The daily traffic assignment volumes (bandwidths) are shown in Figure 10. Figure 11 displays the difference in daily volumes with and without the High Desert Corridor Freeway, where green bandwidths display the volumes that the new facility is carrying, and red bandwidths display the decrease in volumes on all other facilities, thereby improving LOS conditions on these facilities.

Figure 10: 2045 Base with High Desert Corridor Daily Traffic Volumes Forecast

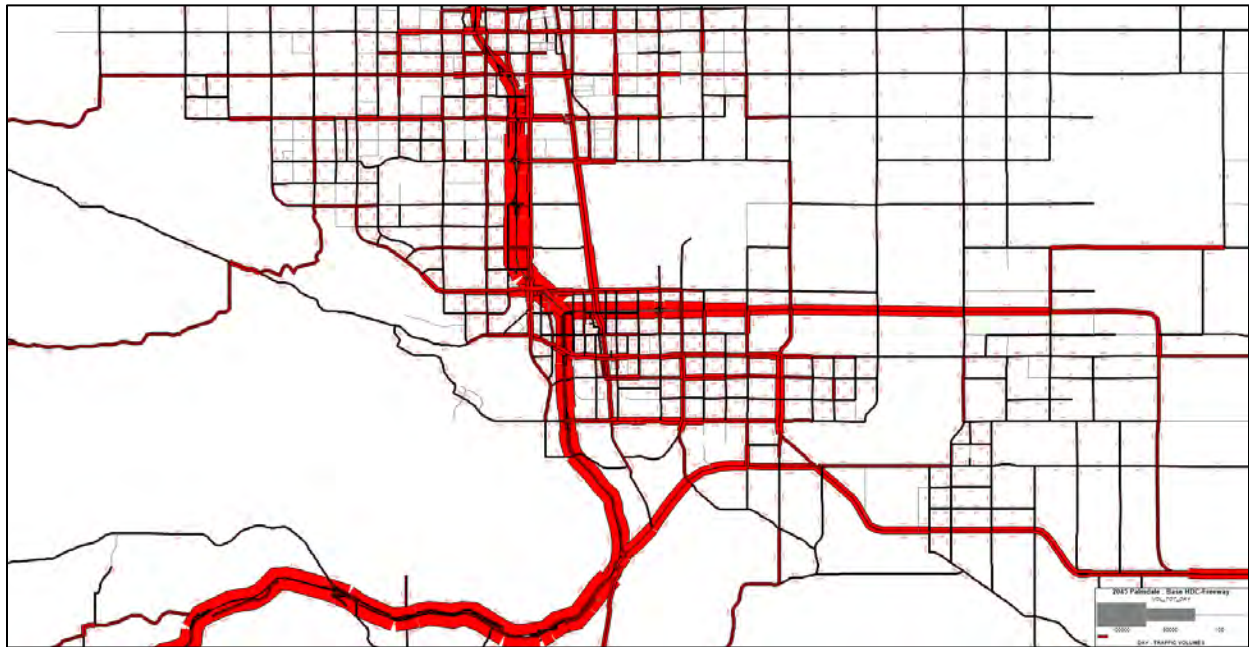
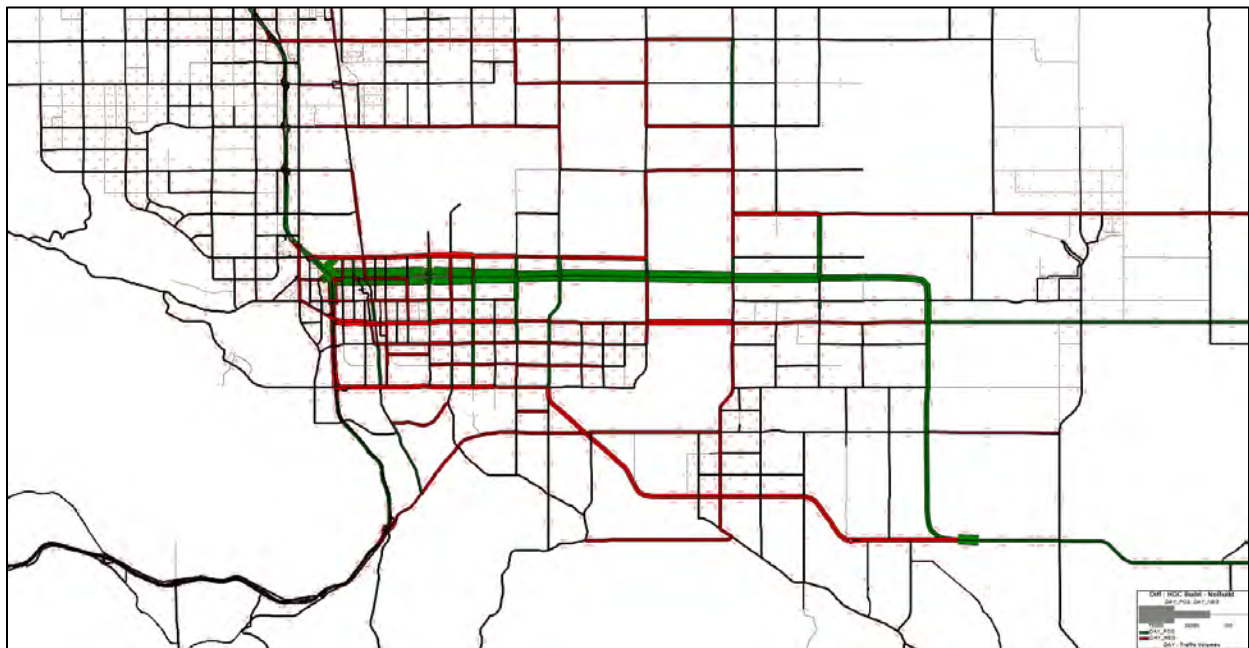


Figure 11: Comparison of 2045 Base to 2045 Base with High Desert Corridor Daily Traffic Volumes Forecasts



The post-processed daily assignment volumes and the LOS at various segments are reported in Table 17.

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Table 17: 2045 Base with High Desert Corridor Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base with High Desert Corridor			
	Roadway	From/To		2045HDC_Tot_Flow_adj	Capacity	V/C	LOS
1001	Columbia Way/Avenue M	10th Street W to Sierra Hwy	4	30,032	36,000	0.83	D
1002	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	4	30,598	36,000	0.85	D
1003	Columbia Way/Avenue M	10th Street E to 20th Street E	4	17,513	36,000	0.49	A
1004	Columbia Way/Avenue M	20th Street E to 30th Street E	4	13,382	36,000	0.37	A
1005	Columbia Way/Avenue M	30th Street E to 40th Street E	4	7,475	36,000	0.21	A
1006	Columbia Way/Avenue M	40th Street E to 50th Street	4	10,559	36,000	0.29	A
1007	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	4	20,985	36,000	0.58	A
1008	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	4	20,985	36,000	0.58	A
1009	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	4	22,457	36,000	0.62	B
1010	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	4	27,509	36,000	0.76	C
1011	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	4	27,134	36,000	0.75	C
1012	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	6	43,279	54,000	0.80	D
1013	Rancho Vista Ave/Avenue P	10th Street W to SR 14	6	38,223	54,000	0.71	C
1014	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	4	23,332	54,000	0.43	A
1015	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	4	26,481	54,000	0.49	A
1016	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	4	22,334	45,000	0.59	A
1017	East Avenue P	Sierra Hwy to 8th Street E	4	33,683	36,000	0.62	B
1018	East Avenue P	8th Street E to 15th Street E	4	33,683	36,000	0.94	E
1019	East Avenue P	15th Street E to 20th Street E	4	24,973	36,000	0.68	B
1020	East Avenue P	20th Street E to 25th Street E	4	18,699	36,000	0.69	B
1021	East Avenue P	25th Street E to 30th Street E	4	14,695	36,000	0.52	A
1022	Avenue Q	Trade Center Dr to 5th Street W	4	4,549	36,000	0.41	A
1023	Avenue Q	Division Street to 6th Street E	2	6,977	36,000	0.13	A
1024	Avenue Q	Sierra Hwy to 10th Street E	2	9,447	18,000	0.39	A
1025	Avenue Q	10th Street E to 20th Street E	2	8,323	18,000	0.52	A
1026	Avenue Q	20th Street E to 30th Street E	2	7,106	18,000	0.46	A
1027	Avenue Q	30th Street E to 40th Street E	2	7,085	18,000	0.39	A
1028	Elizabeth Lake Rd	25th Street W to 20th Street W	4	17,153	36,000	0.48	A
1029	Elizabeth Lake Rd	20th Street W to 15th Street W	4	17,781	36,000	0.49	A
1030	Elizabeth Lake Rd	15th Street W to 10th Street W	4	22,627	36,000	0.63	B
1031	Palmdale Blvd	10th Street W to Trade Center Dr	4	22,061	54,000	0.41	A
1032	Palmdale Blvd	Trade Center Dr to 5th Street W	4	18,772	54,000	0.35	A
1033	Palmdale Blvd	5th Street W to State Route 14	4	29,963	54,000	0.55	A
1034	Palmdale Blvd	Division Street to 5th St E	6	25,175	54,000	0.47	A

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Table 17: 2045 Base with High Desert Corridor Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base with High Desert Corridor			
	Roadway	From/To		2045HDC_Tot_Flow_adj	Capacity	V/C	LOS
1035	Palmdale Blvd	5th Street E to 10th Street E	4	25,257	54,000	0.47	A
1036	Palmdale Blvd	10th Street E to 15th Street E	4	25,869	36,000	0.72	C
1037	Palmdale Blvd	15th Street E to 20th Street E	4	19,233	36,000	0.53	A
1038	Palmdale Blvd	20th Street E to 25th Street E	4	23,470	36,000	0.65	B
1040	Palmdale Blvd	40th Street E to 47th Street E	4	20,780	36,000	0.58	A
1041	Palmdale Blvd	50th Street E to 60th Street E	4	14,147	36,000	0.39	A
1042	Palmdale Blvd	70th Street E to 80th Street E	2	16,681	18,000	0.93	E
1043	E Avenue R	Sierra Hwy to 10th Street E	4	19,490	36,000	0.54	A
1044	E Avenue R	10th Street E to 20th Street E	4	18,495	36,000	0.51	A
1045	E Avenue R	20th Street E to 30th Street E	4	18,408	36,000	0.51	A
1046	E Avenue R	30th Street E to 40th Street E	3	14,851	36,000	0.41	A
1047	E Avenue R	40th Street E to 47th Street E	4	17,922	36,000	0.50	A
1048	E Avenue R	47th Street E to 60th Street E	4	15,158	36,000	0.42	A
1049	E Avenue R	60th Street E to 70th Street E	4	6,317	36,000	0.18	A
1050	Avenue S	Tovey Avenue to Tierra Subida Ave	4	9,346	36,000	0.26	A
1051	Avenue S	Tierra Subida Ave to SR 14	4	14,798	36,000	0.41	A
1052	Avenue S	SR 14 to 5th Street E	4	13,190	36,000	0.37	A
1053	Avenue S	5th Street E to Sierra Hwy	4	25,828	36,000	0.72	C
1054	Avenue S	Sierra Hwy to 10th Street E	4	32,170	36,000	0.89	D
1055	Avenue S	10th Street E to 20th Street E	4	29,830	36,000	0.83	D
1056	Avenue S	20th Street E to 25th Street E	4	30,323	36,000	0.84	D
1057	Avenue S	25th Street E to 30th Street E	4	29,058	36,000	0.81	D
1058	Avenue S	30th Street E to 35th Street E	6	24,137	54,000	0.45	A
1059	Avenue S	35th Street E to 40th Street E	6	23,612	54,000	0.44	A
1060	Avenue S	40th Street E to 47th Street E	6	23,867	54,000	0.44	A
1061	Avenue S	47th Street E to 55th Street E	4	23,500	36,000	0.65	B
1062	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	4	53,902	36,000	1.50	F
1063	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	4	44,895	36,000	1.25	F
1064	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	4	30,912	36,000	0.86	D
1065	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	4	30,912	36,000	0.86	D
1066	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	4	30,912	36,000	0.86	D
1067	10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	4	15,186	36,000	0.42	A
1068	10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	4	21,170	36,000	0.59	A
1069	10th Street W/Tierra Subida Ave	W Avenue O to SR 14	4	17,627	36,000	0.49	A

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Table 17: 2045 Base with High Desert Corridor Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base with High Desert Corridor			
	Roadway	From/To		2045HDC_Tot_Flow_adj	Capacity	V/C	LOS
1070	10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	6	35,324	54,000	0.65	B
1071	10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology Dr	6	38,620	54,000	0.72	C
1072	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	5	43,093	45,000	0.96	E
1073	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	4	19,634	36,000	0.55	A
1074	Sierra Hwy	Columbia Way to E Avenue N	4	30,922	36,000	0.86	D
1075	Sierra Hwy	E Avenue N to E Avenue O	4	32,221	36,000	0.90	D
1076	Sierra Hwy	E Avenue O to E Avenue P	4	44,357	36,000	1.23	F
1077	Sierra Hwy	E Avenue P to E Avenue Q	4	14,366	36,000	0.40	A
1078	Sierra Hwy	E Avenue Q to Palmdale Blvd	4	16,842	36,000	0.47	A
1079	Sierra Hwy	Palmdale Blvd to E Avenue R	4	10,222	36,000	0.28	A
1080	Sierra Hwy	E Avenue R to E Avenue S	4	9,588	36,000	0.27	A
1081	Sierra Hwy	E Avenue S to Pearblossom Hwy	4	8,070	36,000	0.22	A
1082	10th Street E	E Avenue P to E Avenue Q	2	2,357	18,000	0.13	A
1083	10th Street E	E Avenue Q to E Palmdale Blvd	4	5,732	36,000	0.16	A
1084	10th Street E	E. Palmdale Blvd to Avenue R	2	7,914	18,000	0.44	A
1085	10th Street E	Avenue R to Avenue S1	2	3,898	18,000	0.22	A
1086	20th Street E	E Avenue P to E Avenue Q	2	12,843	18,000	0.71	C
1087	20th Street E	E Avenue Q to Palmdale Blvd	2	11,632	18,000	0.65	B
1088	20th Street E	Palmdale Blvd to E Avenue R	4	15,425	36,000	0.43	A
1089	20th Street E	E Avenue R to E Avenue S	4	13,258	36,000	0.37	A
1090	25th Street E	E Avenue P to E Avenue Q	2	6,632	18,000	0.37	A
1091	25th Street E	E Avenue Q to Palmdale Blvd	2	7,356	18,000	0.41	A
1092	25th Street E	Palmdale Blvd to E Avenue R	4	13,824	36,000	0.38	A
1093	25th Street E	E Avenue R to E Avenue S	4	20,571	36,000	0.57	A
1094	25th Street E	E Avenue S to Pearblossom Hwy	4	18,408	36,000	0.51	A
1095	30th Street E	E Avenue P to E Avenue Q	2	16,388	18,000	0.91	E
1096	30th Street E	E Avenue Q to Palmdale Blvd	2	12,702	18,000	0.71	C
1097	30th Street E	Palmdale Blvd to E Avenue R	4	11,480	36,000	0.32	A
1098	30th Street E	E Avenue R to E Avenue S	4	10,654	36,000	0.30	A
1099	40th Street E	E Avenue P to E Avenue Q	2	19,798	18,000	1.10	F
1100	40th Street E	E Avenue Q to E Palmdale Blvd	2	10,909	18,000	0.61	B
1101	40th Street E	E Palmdale Blvd to E Avenue R	3	15,073	27,000	0.56	A
1102	40th Street E	E Avenue R to E Avenue S	3	11,906	27,000	0.44	A
1103	40th Street E	E Avenue S to Sierra Hwy	2	12,162	18,000	0.68	B

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Table 17: 2045 Base with High Desert Corridor Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base with High Desert Corridor			
	Roadway	From/To		2045HDC_Tot_Flow_adj	Capacity	V/C	LOS
1104	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	2	19,600	18,000	1.09	F
1105	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	2	17,449	18,000	0.97	E
1106	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	4	31,244	36,000	0.87	D
1107	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	4	34,153	36,000	0.95	E
1108	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	4	29,287	36,000	0.81	D
1109	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	5	24,514	45,000	0.54	A
1110	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	4	15,334	36,000	0.43	A
1111	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	4	24,541	36,000	0.68	B
1120	Technology Dr	10th Street W to Trade Center Dr	4	7,974	36,000	0.22	A
1121	Technology Dr	5th Street W to Division St	4	7,958	36,000	0.22	A
1122	Technology Dr	Division St to Sierra Hwy	4	7,805	36,000	0.22	A
2011	HDC Freeway - SR14 to 20th Street	SR14 to 20th Street	8	30,187	72,000	0.42	A
2012	HDC Freeway - SR14 to 20th Street	SR14 to 20th Street	8	34,756	72,000	0.48	A
2021	HDC Freeway - 20th Street to 30th Street	20th Street to 30th Street	8	29,318	72,000	0.41	A
2022	HDC Freeway - 20th Street to 30th Street	20th Street to 30th Street	8	37,066	72,000	0.51	A
2030	HDC Expressway	30th Street to 40th Street	4	53,779	60,000	0.90	D
2031	HDC Expressway	40th Street to 40th Street	4	39,413	60,000	0.66	B
2032	HDC Expressway	50th Street to 70th Street	4	41,244	60,000	0.69	B
2033	HDC Expressway	70th Street to 90th Street	4	41,070	60,000	0.68	B
2034	HDC Expressway	90th Street to 110th Street	4	31,559	60,000	0.53	A
2035	HDC Expressway	110th Street to Avenue Q	4	19,165	60,000	0.32	A
2036	HDC Principal Arterial	Avenue T to SR138	4	12,809	60,000	0.21	A
Total LOS A through D							113
Total LOS E							6
Total LOS F							5
Total LOS Reported							124

Traffic Report

Table 18 reports the link-based VMT, VHT, VHD, and average speeds by facility for the Palmdale SOI for all trips regardless of the trip origin or destination.

Table 18: 2045 Base with High Desert Corridor Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips

Facility	AM Peak				PM Peak				Daily			
	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay
Freeways	312,614	6,131	51.0	1,665	373,363	6,101	61.2	768	1,403,737	22,764	61.7	2,711
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	72,021	1,328	54.2	299	72,002	1,122	64.2	94	149,952	2,535	59.2	393
Expressways/ parkways	81,889	1,455	56.3	218	115,712	2,056	56.3	309	398,295	6,736	59.1	731
Principal arterials	205,935	5,348	38.5	922	306,588	7,915	38.7	1,282	1,144,438	27,929	41.0	3,315
Minor arterials	211,775	5,217	40.6	314	344,683	8,536	40.4	551	1,128,747	27,502	41.0	1,233
Major collectors	105,296	3,013	34.9	460	161,020	4,418	36.4	490	511,576	13,631	37.5	1,108
Minor collectors	2,094	58	36.0	2	3,219	109	29.5	19	10,866	335	32.4	32
Freeway ramps	15,259	592	25.8	194	22,687	930	24.4	331	77,100	2,927	26.3	865
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	72,075	2,827	25.5	0	119,703	4,696	25.5	0	399,047	15,663	25.5	0
Total—All Links	1,078,958	25,970	41.5	4,074	1,518,977	35,883	42.3	3,843	5,223,759	120,023	43.5	10,388

Summary

Daily trips are defined as having an origin, destination or both within the Palmdale SOI, and excludes pass-through trips. The Palmdale trips generate a VMT of 8,868,517 and a VHT of 335,887 on all the roadway way facilities within the SCAG region. The Palmdale SOI only accounts for 27.5 percent of the total VMT generated, Lancaster accounts for 12.6 percent, and the High Desert region accounts for 3.3 percent. The rest of Los Angeles County accounts for 32.5 percent.

The average trip length for trips originating and staying within the Palmdale SOI is 4.46 miles and this constitutes 71.9 percent of all the Palmdale trips. The average trip length for trips originating in the Palmdale SOI and having a destination anywhere in the SCAG region including itself is 11.62 miles.

Daily segment-based LOS results show the number of segments operating at LOS E is six and LOS F is five and accounts for 4.8 percent and 4.0 percent, respectively, of all the segments analyzed.

The Palmdale transportation network as a system, which includes all roadway facilities within the Palmdale SOI, generates 5,223,759 VMT, 120,023 VHT and 10,388 VHD daily. This accounts for all trips, including pass through trips, using the highway network within the Palmdale SOI.

2045 PREFERRED PLAN

The 2045 Base dataset was used for 2045 Preferred Plan scenario and the network assumptions are consistent with the RTP. The 2045 socio-economic data for the Palmdale SOI was updated based on the 2045 Preferred Plan used for the Palmdale General Plan update. The socio-economic data outside the Palmdale SOI is consistent with the SCAG assumptions for the region in the year 2040. The SCAG four-step model procedures were run with the updated planning variables in the Palmdale SOI. Table 19 reports the land use assumptions for the region.

The 2045 Base Highway network was reviewed by the City of Palmdale for the 2045 Preferred Plan and based on their recommendations, the highway network was updated. In addition, High-Speed Rail ridership at the Palmdale station was incorporated into the highway assignment procedures.

Table 19: 2045 Preferred Plan Socio-Economic Forecast

	Population	Households	Employment
Palmdale sphere	225,692	70,618	74,804
Lancaster sphere	218,843	69,963	59,678
High Desert region	40,845	14,409	5,030
Ventura County	282,025	92,482	101,050
Los Angeles County remainder	11,001,144	3,783,739	5,117,195
Orange County	3,460,381	1,152,340	1,898,952
Riverside County	3,183,378	1,054,557	1,174,500
San Bernardino County	2,731,308	854,360	1,028,132
Imperial County	965,566	312,223	419,808
Externals	0	0	0
Seaport/airport	0	0	0
Total Region	22,109,182	7,404,691	9,879,149

Select zone traffic assignment procedures were performed on the zones within the Palmdale SOI to produce trips that were generated or attracted to Palmdale SOI only. All other trips were not counted, as they were pass through trips. The daily average trip lengths for Palmdale only trips to different locations are shown in Table 20. The daily link-based VMT, VHT, and the average speeds by facility types are shown in Table 21 for Palmdale SOI only trips. The daily percent share of VMT for trips originating in the Palmdale SOI to all areas in the region, including Palmdale, is illustrated in Figure 12.

Table 20: 2045 Preferred Plan Palmdale Sphere of Influence (II and IX) Average Trip Length

From/To	Trip Length (II and IX*) (miles)	Percent Share of Trips
Palmdale sphere	4.44	70.8%
Lancaster sphere	8.99	17.2%
High Desert region	16.32	2.7%
Imperial County	224.68	0.0%
Los Angeles County	54.94	5.4%
Orange County	108.77	0.3%
Riverside County	106.06	0.3%
San Bernardino County	61.08	1.5%
Ventura County	76.42	0.4%
Externals	68.00	1.1%
Seaport/airport	38.84	0.3%
Weighted Average	10.86	100.0%

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI

IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.

Table 21: 2045 Preferred Plan Palmdale Sphere of Influence (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

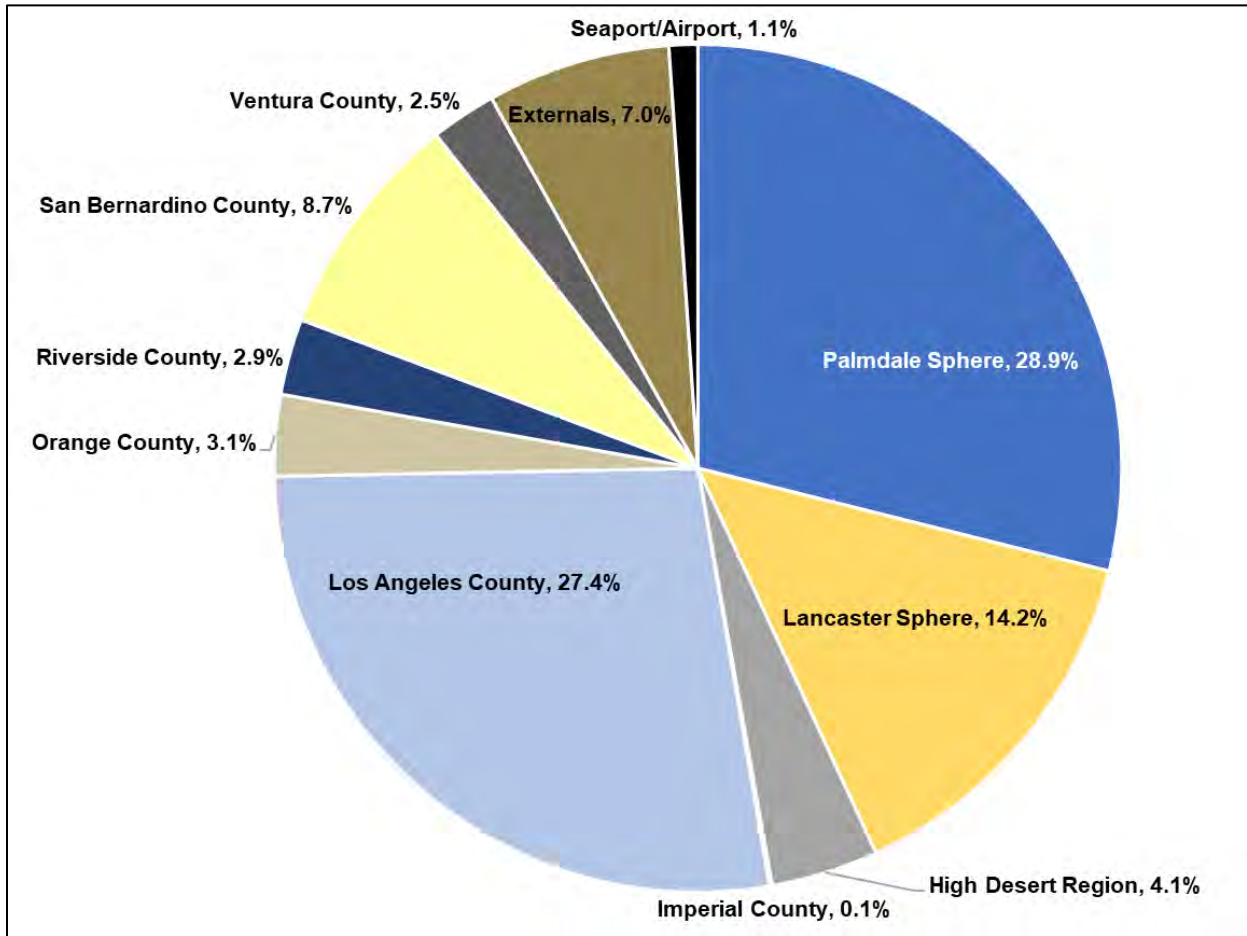
Facility	VMT	VHT	Average Speed (mph)
Freeways	2,395,390	92,084	45.2
HOT facilities	7,911	230	63.4
HOV facilities	184,453	9,425	49.0
Expressways/parkways	5,083	184	51.2
Principal arterials	1,571,929	42,699	29.9
Minor arterials	1,821,834	50,209	30.5
Major collectors	1,075,565	30,851	23.7
Minor connectors	53,726	1,575	29.1
Freeway ramps	122,764	14,415	20.4
Truck lanes only	8,130	646	24.9
Centroid connectors	480,325	19,048	24.4
Total without centroid connectors	7,246,785	242,319	35.5
Total of All Links	7,727,110	261,367	34.5

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI

IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region

XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI

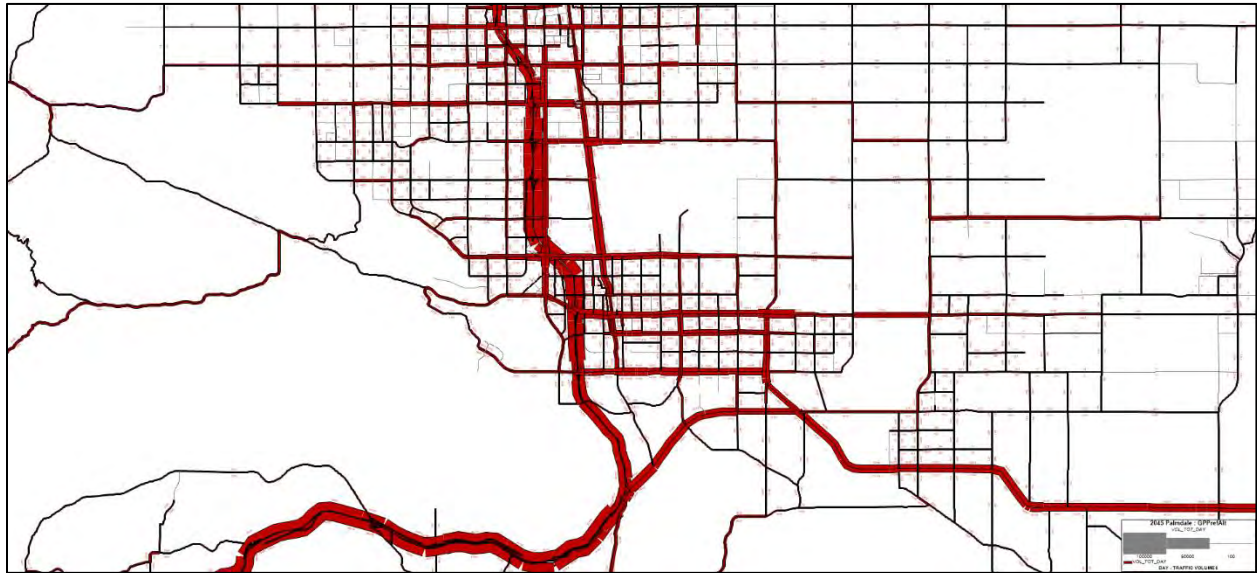
Figure 12: 2045 Preferred Plan Daily VMT Share Originating in Palmdale Sphere of Influence



Traffic Report

Traffic assignments were performed to produce traffic volumes on the various facilities inside and outside the Palmdale SOI. Traffic assignments are available for AM peak period, mid-day period, PM peak period, evening period, night period and daily. The daily traffic assignment volumes (bandwidths) are shown in Figure 13. The post-processed daily assignment volumes and the LOS at various segments are reported in the Table 22.

Figure 13: 2045 Preferred Plan Daily Traffic Volumes



Traffic Report

LINKID	Roadway Segments		Lanes	2045 Preferred Plan			
	Roadway	From/To		2045PrefPlan_Tot_Flow_adj	Capacity	V/C	LOS
1001	Columbia Way/Avenue M	10th Street W to Sierra Hwy	4	32,760	36,000	0.91	E
1002	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	4	35,733	36,000	0.99	E
1003	Columbia Way/Avenue M	10th Street E to 20th Street E	4	23,321	36,000	0.65	B
1004	Columbia Way/Avenue M	20th Street E to 30th Street E	4	17,482	36,000	0.49	A
1005	Columbia Way/Avenue M	30th Street E to 40th Street E	4	12,192	36,000	0.34	A
1006	Columbia Way/Avenue M	40th Street E to 50th Street	4	14,334	36,000	0.40	A
1007	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	4	16,758	36,000	0.47	A
1008	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	4	20,985	36,000	0.58	A
1009	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	4	22,457	54,000	0.42	A
1010	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	4	27,509	54,000	0.51	A
1011	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	4	27,276	54,000	0.51	A
1012	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	6	41,536	54,000	0.77	C
1013	Rancho Vista Ave/Avenue P	10th Street W to SR 14	6	35,290	54,000	0.65	B
1014	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	4	23,332	54,000	0.43	A
1015	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	4	26,481	45,000	0.59	A
1016	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	4	22,334	36,000	0.62	B
1017	East Avenue P	Sierra Hwy to 8th Street E	4	37,052	36,000	1.03	F
1018	East Avenue P	8th Street E to 15th Street E	4	27,698	36,000	0.77	C
1019	East Avenue P	15th Street E to 20th Street E	4	30,657	36,000	0.85	D
1020	East Avenue P	20th Street E to 25th Street E	4	23,798	36,000	0.66	B
1021	East Avenue P	25th Street E to 30th Street E	4	18,896	36,000	0.52	A
1022	Avenue Q	Trade Center Dr to 5th Street W	4	4,805	36,000	0.13	A
1023	Avenue Q	Division Street to 6th Street E	2	8,053	18,000	0.45	A
1024	Avenue Q	Sierra Hwy to 10th Street E	2	10,165	18,000	0.56	A
1025	Avenue Q	10th Street E to 20th Street E	2	8,349	18,000	0.46	A
1026	Avenue Q	20th Street E to 30th Street E	2	7,293	18,000	0.41	A
1027	Avenue Q	30th Street E to 40th Street E	2	7,814	18,000	0.43	A
1028	Elizabeth Lake Rd	25th Street W to 20th Street W	4	20,874	36,000	0.58	A
1029	Elizabeth Lake Rd	20th Street W to 15th Street W	4	16,038	36,000	0.45	A
1030	Elizabeth Lake Rd	15th Street W to 10th Street W	4	19,583	36,000	0.54	A
1031	Palmdale Blvd	10th Street W to Trade Center Dr	4	22,179	36,000	0.62	B

Traffic Report

LINKID	Roadway Segments		Lanes	2045 Preferred Plan			
	Roadway	From/To		2045PrefPlan_Tot_Flow_adj	Capacity	V/C	LOS
1032	Palmdale Blvd	Trade Center Dr to 5th Street W	4	17,785	36,000	0.49	A
1033	Palmdale Blvd	5th Street W to State Route 14	4	27,366	36,000	0.76	C
1034	Palmdale Blvd	Division Street to 5th St E	6	25,510	54,000	0.47	A
1035	Palmdale Blvd	5th Street E to 10th Street E	4	25,257	36,000	0.70	C
1036	Palmdale Blvd	10th Street E to 15th Street E	4	25,869	36,000	0.72	C
1037	Palmdale Blvd	15th Street E to 20th Street E	4	19,233	36,000	0.53	A
1038	Palmdale Blvd	20th Street E to 25th Street E	4	24,649	36,000	0.68	B
1040	Palmdale Blvd	40th Street E to 47th Street E	4	28,011	36,000	0.78	C
1041	Palmdale Blvd	50th Street E to 60th Street E	4	23,700	36,000	0.66	B
1042	Palmdale Blvd	70th Street E to 80th Street E	2	16,681	18,000	0.93	E
1043	E Avenue R	Sierra Hwy to 10th Street E	4	19,490	36,000	0.54	A
1044	E Avenue R	10th Street E to 20th Street E	4	18,495	36,000	0.51	A
1045	E Avenue R	20th Street E to 30th Street E	4	18,408	36,000	0.51	A
1046	E Avenue R	30th Street E to 40th Street E	3	18,843	36,000	0.52	A
1047	E Avenue R	40th Street E to 47th Street E	4	22,831	36,000	0.63	B
1048	E Avenue R	47th Street E to 60th Street E	4	17,279	36,000	0.48	A
1049	E Avenue R	60th Street E to 70th Street E	4	6,564	36,000	0.18	A
1050	Avenue S	Tovey Avenue to Tierra Subida Ave	4	10,895	36,000	0.30	A
1051	Avenue S	Tierra Subida Ave to SR 14	4	17,336	36,000	0.48	A
1052	Avenue S	SR 14 to 5th Street E	4	13,190	36,000	0.37	A
1053	Avenue S	5th Street E to Sierra Hwy	4	25,828	36,000	0.72	C
1054	Avenue S	Sierra Hwy to 10th Street E	4	32,170	36,000	0.89	D
1055	Avenue S	10th Street E to 20th Street E	4	29,830	36,000	0.83	D
1056	Avenue S	20th Street E to 25th Street E	4	30,323	36,000	0.84	D
1057	Avenue S	25th Street E to 30th Street E	4	29,058	36,000	0.81	D
1058	Avenue S	30th Street E to 35th Street E	6	24,137	54,000	0.45	A
1059	Avenue S	35th Street E to 40th Street E	6	23,612	54,000	0.44	A
1060	Avenue S	40th Street E to 47th Street E	6	23,867	54,000	0.44	A
1061	Avenue S	47th Street E to 55th Street E	4	21,305	36,000	0.59	A
1062	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	4	52,520	36,000	1.46	F
1063	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	4	45,045	36,000	1.25	F

Traffic Report

LINKID	Roadway Segments		Lanes	2045 Preferred Plan			
	Roadway	From/To		2045PrefPlan_Tot_Flow_adj	Capacity	V/C	LOS
1064	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	4	31,951	36,000	0.89	D
1065	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	4	32,061	36,000	0.89	D
1066	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	4	22,190	36,000	0.62	B
1067	10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	4	15,186	36,000	0.42	A
1068	10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	4	22,897	36,000	0.64	B
1069	10th Street W/Tierra Subida Ave	W Avenue O to SR 14	4	17,627	36,000	0.49	A
1070	10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	6	35,324	54,000	0.65	B
1071	10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology Dr	6	37,661	54,000	0.70	B
1072	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	5	47,477	45,000	1.06	F
1073	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	4	18,512	36,000	0.51	A
1074	Sierra Hwy	Columbia Way to E Avenue N	4	37,932	36,000	1.05	F
1075	Sierra Hwy	E Avenue N to E Avenue O	4	36,183	36,000	1.01	F
1076	Sierra Hwy	E Avenue O to E Avenue P	4	53,660	36,000	1.49	F
1077	Sierra Hwy	E Avenue P to E Avenue Q	4	14,366	36,000	0.40	A
1078	Sierra Hwy	E Avenue Q to Palmdale Blvd	4	15,253	36,000	0.42	A
1079	Sierra Hwy	Palmdale Blvd to E Avenue R	4	9,993	36,000	0.28	A
1080	Sierra Hwy	E Avenue R to E Avenue S	4	7,289	36,000	0.20	A
1081	Sierra Hwy	E Avenue S to Pearblossom Hwy	4	8,070	36,000	0.22	A
1082	10th Street E	E Avenue P to E Avenue Q	2	2,357	18,000	0.13	A
1083	10th Street E	E Avenue Q to E Palmdale Blvd	4	5,732	36,000	0.16	A
1084	10th Street E	E. Palmdale Blvd to Avenue R	2	5,756	18,000	0.32	A
1085	10th Street E	Avenue R to Avenue S1	2	3,898	18,000	0.22	A
1086	20th Street E	E Avenue P to E Avenue Q	2	6,362	18,000	0.35	A
1087	20th Street E	E Avenue Q to Palmdale Blvd	2	9,746	18,000	0.54	A
1088	20th Street E	Palmdale Blvd to E Avenue R	4	13,063	36,000	0.36	A
1089	20th Street E	E Avenue R to E Avenue S	4	12,938	36,000	0.36	A
1090	25th Street E	E Avenue P to E Avenue Q	2	8,624	18,000	0.48	A
1091	25th Street E	E Avenue Q to Palmdale Blvd	2	8,947	18,000	0.50	A
1092	25th Street E	Palmdale Blvd to E Avenue R	4	13,007	36,000	0.36	A
1093	25th Street E	E Avenue R to E Avenue S	4	16,629	36,000	0.46	A
1094	25th Street E	E Avenue S to Pearblossom Hwy	4	14,269	36,000	0.40	A

Traffic Report

LINKID	Roadway Segments		Lanes	2045 Preferred Plan			
	Roadway	From/To		2045PrefPlan_Tot_Flow_adj	Capacity	V/C	LOS
1095	30th Street E	E Avenue P to E Avenue Q	2	7,961	18,000	0.44	A
1096	30th Street E	E Avenue Q to Palmdale Blvd	2	7,821	18,000	0.43	A
1097	30th Street E	Palmdale Blvd to E Avenue R	4	8,354	36,000	0.23	A
1098	30th Street E	E Avenue R to E Avenue S	4	8,871	36,000	0.25	A
1099	40th Street E	E Avenue P to E Avenue Q	2	11,891	18,000	0.66	B
1100	40th Street E	E Avenue Q to E Palmdale Blvd	2	7,185	18,000	0.40	A
1101	40th Street E	E Palmdale Blvd to E Avenue R	3	14,092	27,000	0.52	A
1102	40th Street E	E Avenue R to E Avenue S	3	12,432	27,000	0.46	A
1103	40th Street E	E Avenue S to Sierra Hwy	2	10,612	18,000	0.59	A
1104	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	2	22,987	18,000	1.28	F
1105	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	2	16,180	18,000	0.90	D
1106	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	4	26,588	36,000	0.74	C
1107	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	4	26,908	36,000	0.75	C
1108	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	4	19,854	36,000	0.55	A
1109	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	5	28,816	45,000	0.64	B
1110	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	4	24,367	36,000	0.68	B
1111	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	4	30,811	36,000	0.86	D
1120	Technology Dr	10th Street W to Trade Center Dr	4	7,277	36,000	0.20	A
1121	Technology Dr	5th Street W to Division St	4	7,574	36,000	0.21	A
1122	Technology Dr	Division St to Sierra Hwy	4	7,805	36,000	0.22	A
Total LOS A through D							102
Total LOS E							3
Total LOS F							8
Total LOS Reported							113

Traffic Report

Table 23 reports the link-based VMT, VHT, VHD, and average speeds by facility for the Palmdale SOI for all trips regardless of trip origin or destination.

Table 23: 2045 Preferred Plan Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips

Facility	AM Peak				PM Peak				Daily			
	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay	VMT	VHT	Speed	Delay
Freeways	243,132	4,149	58.6	675	294,514	4,620	63.7	413	1,063,365	16,410	64.8	1,219
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	50,509	776	65.1	55	41,547	598	69.5	4	99,507	1,480	67.2	59
Expressways/ parkways	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Principal arterials	225,647	6,006	37.6	1,038	330,852	8,917	37.1	1,601	1,208,274	30,538	39.6	3,914
Minor arterials	262,849	6,443	40.8	449	420,218	10,415	40.3	824	1,382,559	33,333	41.5	1,738
Major collectors	110,627	2,819	39.2	212	157,278	3,986	39.5	250	492,059	12,273	40.1	563
Minor collectors	5,977	144	41.5	2	7,070	178	39.6	6	19,576	497	39.4	12
Freeway ramps	11,299	537	21.1	197	15,858	759	20.9	286	55,388	2,412	23.0	754
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	67,697	2,650	25.5	0	109,639	4,293	25.5	0	364,492	14,297	25.5	0
Total—All Links	977,736	23,524	41.6	2,628	1,376,977	33,764	40.8	3,384	4,685,219	111,241	42.1	8,259

Summary

Daily trips are defined as having an origin, destination or both within the Palmdale SOI and do not include pass-through trips. The Palmdale trips generate a VMT of 7,727,110 and a VHT of 261,367 on all the roadway facilities within the SCAG region. The Palmdale SOI only accounts for 28.9 percent of the total VMT generated, Lancaster accounts for 14.2 percent, and the High Desert region accounts for 4.1 percent. The rest of Los Angeles County accounts for 27.4 percent.

The average trip length for trips originating and staying within the Palmdale SOI is 4.44 miles, constituting 70.8 percent of all Palmdale trips. The average trip length for trips originating in the Palmdale SOI and having a destination anywhere in the SCAG region including itself is 10.86 miles.

Daily segment-based LOS results show the number of segments operating at LOS E is three and LOS F is eight and accounts for 2.7 percent and 7.1 percent, respectively, of all the segments analyzed.

The Palmdale transportation network as a system, which includes all roadway facilities within the Palmdale SOI, generates 4,685,219 VMT, 111,241 VHT and 8,259 VHD daily. This accounts for all trips, including pass through trips, using the highway network within the Palmdale SOI.

Measures of Effectiveness

Measures of effectiveness (MOE) metrics can be used for scenarios to predict the effects of a project on the transportation network in Palmdale as a “system.” Some of the more important metrics include the change in VMT, VHT, and VHD between the project and no-project scenarios. Delay represents the amount of time lost for vehicles from the free-flow condition. If delay decreases, then the transportation network as a system will have improved performance with better operations and travel speeds. This is also in line with VMT as a metric that is being used for project-related impacts. Level of service metrics can still be used for intersection operations analysis and segment levels of service for an area defined around the project.

Measures of effectiveness were computed for all scenarios for the Palmdale General Plan.

Table 24 shows the various statistics for the home-based and all trip purposes for the Palmdale SOI under all scenarios. The average trip lengths for home-based work, home-based trips and all trip purposes decrease in the future Palmdale GP scenarios, which in turn reduces the VMT generated. The VMT per capita and the VMT per employee also decrease. In addition, the average trip lengths for the 2045 Preferred Plan scenario decreases. All these reductions effectively contribute toward the overall reduction in VMT and thereby improve the air quality by reducing the emissions of greenhouse gases and CO₂.

Table 25 presents the percent share of VMT generated by trips between the Palmdale SOI and other areas of the SCAG region. The intra-Palmdale VMT increased in the 2045 Preferred Plan scenario, reducing VMT to other areas as designed using smart growth assumptions (e.g., a good mixture of households and employment and transit-oriented developments). Palmdale, an exporter of workers, now finds itself being less of an exporter with smart growth initiatives and striving toward being self-contained as evident by the reduction in the VMT to other regions and the increase in VMT to the Palmdale sphere of influence and neighboring areas (e.g., Lancaster and the High Desert Region). The VMT to other parts of Los Angeles and Orange counties dropped from 46 to 36 percent, a decrease of 10 percent, primarily due to the reduced number of longer trips.

Table 26 displays the link-based daily VMT generated by the SCAG model for the different facility types having an origin or destination in the Palmdale sphere of influence. Trips which are pass-through in nature, where they do not have an origin or destination in the Palmdale SOI are not counted. The future year Palmdale Preferred Plan has the lowest VMT among all the scenarios, reflecting shorter trip lengths to and from the Palmdale sphere of influence.

Table 24: Trip Purpose Statistics

Palmdale Sphere—Statistics	2017 Existing	2045 Base	2045 Preferred Plan
Home-based work trips—VMT per capita	16.43	14.54	8.85
Home-based work trips—average trip length	31.57	31.10	21.59
Home-based all trips—VMT per capita	26.19	23.20	16.57
Home-based all trips—average trip length	16.49	15.63	12.62
All trips—VMT per service population	34.30	30.60	27.00
All trips—average trip length	11.87	11.56	10.86

Table 25: VMT between Palmdale Sphere and Areas within the SCAG Region

Percent VMT	2017 Existing	2045 Base	2045 Preferred Plan
Within Palmdale sphere	14.4%	15.9%	16.9%
Within Palmdale/Lancaster/High Desert region	33.4%	34.4%	38.3%
Between Palmdale and LA County/Orange County	45.9%	41.9%	35.6%
Between Palmdale and remainder of SCAG region and external trips from outside the region	20.7%	23.8%	26.1%
Total	100.0%	100.0%	100.0%

Table 26: VMT to/from Palmdale Sphere to Areas within the SCAG Region by Facility Type

Facility Type	2017 Existing	2045 Base	2045 Preferred Plan
Freeways	2,893,868	2,945,756	2,395,390
HOT facilities	11,431	9,285	7,911
HOV facilities	284,701	284,422	184,453
Expressway/parkway	4,381	5,650	5,083
Principal arterials	1,484,072	1,671,644	1,571,929
Minor arterials	1,631,560	1,897,218	1,821,834
Major collectors	1,067,379	1,321,027	1,075,565
Minor collectors	41,916	43,307	53,726
Freeway ramps	152,550	156,041	122,764
Truck lanes only	6,323	7,485	8,130
Centroid connectors	450,545	520,432	480,325
Total	8,028,726	8,862,268	7,727,110

Table 27 displays the link-based daily VMT, VHT, VHD, and average speeds for the Palmdale transportation network as a system that includes all roadway facilities within the Palmdale SOI. The summary statistics include all trips generated by the SCAG model regardless of whether the trip begins or ends within the Palmdale SOI. All trips using the highway network within the Palmdale SOI are counted.

Table 27: VMT for All Links within the Palmdale Sphere of Influence

All Trips Generated within or Passing through Palmdale Sphere (II, IX-XI and XX)*	2017 Existing	2045 Base	2045 Preferred Plan
Daily VMT (miles)	4,275,553	5,029,773	4,685,219
Daily VHT (hours)	100,085	123,190	111,241
Daily delay (hours)	6,783	12,590	8,259
Average speed (mph)	42.7	40.8	42.1

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI

IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.

XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI

XX = External-to-external trips, where both the origin and destination of the trips could be anywhere in the SCAG region

Traffic Report

The link-based performance statistics for the roadway facilities within the Palmdale SOI are shown in Table 28. The VMT, VHT, and VHD are reported for daily and AM and PM peak periods for all the scenarios. These metrics are lower in the 2045 Preferred Plan than in the 2045 base scenario. The VHD decreases by more than 30 percent, suggesting that the Palmdale transportation network as a system is performing exceptionally well. The delay represents the degradation of the system from free-flow conditions where there is minimal or no delay. The congested speeds on the system have also improved.

Table 28: Performance Statistics by Facility Type within the Palmdale Sphere of Influence

Performance Measurement	Facility Type	Palmdale Sphere of Influence Analysis		
		2017 Existing	2045 Base	2045 Preferred Plan
Daily VMT (thousands)	Freeways	1,203.1	1,327.1	1,162.9
	Arterials	2,197.7	2,658.9	2,590.8
	Other	874.8	1,043.8	931.5
	All Facilities	4,275.6	5,029.8	4,685.2
AM and PM peak period VMT (thousands)	Freeways	646.4	712.9	629.7
	Arterials	1,049.5	1,246.6	1,239.6
	Other	445.4	533.5	485.4
	All Facilities	2,141.3	2,493.1	2,354.7
Daily VHT (thousands)	Freeways	18.8	21.9	17.9
	Arterials	53.3	67.4	63.9
	Other	28.0	33.9	29.5
	All Facilities	100.1	123.2	111.2
AM and PM peak period VHT (thousands)	Freeways	10.7	12.9	10.1
	Arterials	26.4	33.2	31.8
	Other	14.5	17.6	15.4
	All Facilities	51.6	63.7	57.3
Daily VHD (thousands)	Freeways	1.6	2.9	1.3
	Arterials	3.6	7.4	5.7
	Other	1.5	2.2	1.3
	All Facilities	6.8	12.6	8.3
AM and PM peak period VHD (thousands)	Freeways	1.5	2.7	1.1
	Arterials	2.7	5.1	3.9
	Other	1.1	1.6	1.0
	All Facilities	5.3	9.4	6.0

Table 29 summarizes the level of service for all the scenarios showing segments with LOS E and LOS F. There are eleven segments with LOS E or LOS F in the 2045 Preferred Plan scenario, of which five have similar level of service in the 2017 Existing Counts scenario.

Traffic Report

Table 29. Summary of Roadway Segments at Level of Service E or F

LINKID	Roadway Segments		Level of Service				
			2017 Existing Counts	2017 Existing Model	2045 Base	2045 Base with HDC	2045 Preferred Plan
	Roadway	From/To					
1001	Columbia Way/Avenue M	10th Street W to Sierra Hwy	B	A	D	D	E
1002	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	C	A	E	D	E
1015	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	C	F	B	A	A
1016	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	B	F	B	B	B
1017	East Avenue P	Sierra Hwy to 8th Street E	E	C	F	E	F
1019	East Avenue P	15th Street E to 20th Street E	B	B	E	B	D
1035	Palmdale Blvd	5th Street E to 10th Street E	C	E	A	A	C
1042	Palmdale Blvd	70th Street E to 80th Street E	E	F	E	E	E
1054	Avenue S	Sierra Hwy to 10th Street E	D	F	F	D	D
1055	Avenue S	10th Street E to 20th Street E	D	E	E	D	D
1056	Avenue S	20th Street E to 25th Street E	D	E	E	D	D
1057	Avenue S	25th Street E to 30th Street E	D	E	D	D	D
1062	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	F	F	F	F	F
1063	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	F	E	F	F	F
1064	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	B	A	E	D	D
1065	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	B	A	E	D	D
1066	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	A	A	E	D	B
1072	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	D	A	F	E	F
1074	Sierra Hwy	Columbia Way to E Avenue N	C	B	D	D	F
1075	Sierra Hwy	E Avenue N to E Avenue O	C	B	E	D	F
1076	Sierra Hwy	E Avenue O to E Avenue P	D	C	F	F	F
1095	30th Street E	E Avenue P to E Avenue Q	A	A	A	E	A
1099	40th Street E	E Avenue P to E Avenue Q	A	A	A	F	B
1104	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	F	A	F	F	F
1105	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	C	A	D	E	D
1107	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	C	D	E	E	C
1111	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	A	C	E	B	D
Total LOS E			2	5	11	6	3
Total LOS F			3	5	7	5	8
Total LOS E and F			5	10	18	11	11

Figures 14 through 16 illustrate the comparison of scenarios by facility types. The figures clearly show the 2045 Preferred Plan scenario performs very well compared to the 2045 Base scenario.

Figure 14: Daily VMT by Facility Type within the Palmdale Sphere of Influence for All Scenarios

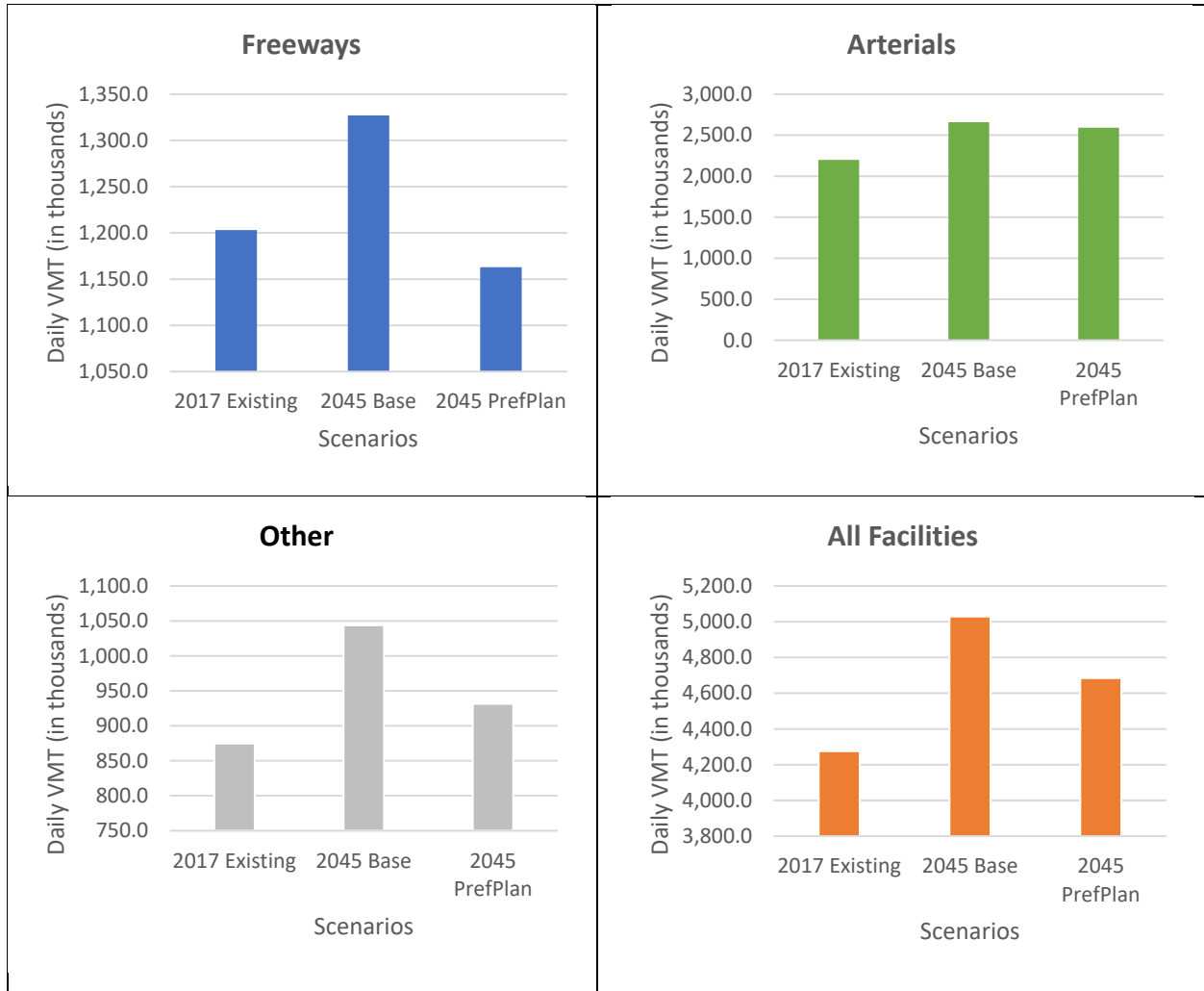


Figure 15: Daily VHT by Facility Type within the Palmdale Sphere of Influence for All Scenarios



Figure 16: Daily VHD by Facility Type within the Palmdale Sphere of Influence for All Scenarios



Summary

The 2045 Preferred Plan scenario significantly reduces home-based work VMT per capita compared to the 2017 Existing scenario. This is validated by average trip lengths that are more than 30 percent shorter. The average trip length for all home-based trips in the 2045 Preferred Plan scenario decreases by 23 percent from the 2017 Existing scenario. The VMT per service population also decreases by more than 22 percent, and the average trips length for all trips decreases by 8 percent. The VMT generated by the 2045 Preferred Plan scenario from the Palmdale sphere of influence to the entire SCAG region also reduces by about four percent. The significant decrease in VMT as seen above contributes to the reduction in greenhouse gases and effectively contributes to SB 743 compliance.

The VMT for all trips (II, IX, XI and XX) using the Palmdale Transportation Network, regardless of their origin or destination also decreases by seven percent when comparing the 2045 Preferred Plan to the 2045 Base scenario. The VHT also decreases by 10 percent. Most importantly, the VHD (which reflects the performance of the system) reduces by 34 percent. This reduction in delay makes the Palmdale transportation network as a system operate exceptionally well when compared to the 2045 Base scenario. Better operating conditions result in higher speeds and lower greenhouse gas emissions.

Vehicle Miles Traveled Impact Criteria Analysis

SB 743 OVERVIEW

On September 27, 2013, Governor Jerry Brown signed SB 743 into law to start a process intended to fundamentally change transportation impact analysis as part of CEQA compliance. In response to SB 743, the Office of Planning and Research (OPR) selected vehicle miles of travel (VMT) as the new transportation impact metric. The OPR then submitted updates to the CEQA Guidelines and these updates were certified by the Natural Resources Agency in December 2018. Lead agencies have been granted a grace period until July 1, 2020 to opt-in to implementing a VMT analysis as part of the environmental review process.

CEQA refers to the California Environmental Quality Act. This statute requires identification of any significant environmental impacts of state or local action including approval of new development or infrastructure projects. The process of identifying these impacts is typically referred to as the environmental review process.

Accordingly, SB 743 eliminates level of service (LOS) as the basis for determining significant transportation impacts under CEQA and provides a new performance metric – VMT. With this change, the State is shifting the focus from measuring a project’s impact to drivers (LOS) to measuring the impact of driving (VMT) to achieve the goals of reducing greenhouse gas (GHG) emissions, encouraging infill development, and improving public health through active transportation.

The OPR produced a Technical Advisory to assist lead agencies with the implementation of SB 743 by steering lead agencies toward the variety of implementation questions they face with respect to shifting to a VMT metric. However, lead agencies must continue to make specific decisions regarding VMT methodology, thresholds, and mitigation that are consistent with the county’s goals as expressed in their relevant plans and policies.

PROJECTS AFFECTED BY SB 743

Two types of projects, land use development projects and transportation infrastructure projects, are affected by SB 743.

- **Land Use:** Development projects and plans (e.g., Community Plan or Specific Plan) will continue to require a transportation impact analysis. However, transportation impact studies conducted as part of the CEQA process will now be required to base project impacts on VMT. In addition, some projects, such as those located adjacent to transit, may be screened from requiring a detailed VMT analysis.
- **Transportation Infrastructure:** Prior to SB 743, transportation projects that had the potential to worsen vehicle delay, such as narrowing a roadway to enhance travel for bicyclists and pedestrians, may result in an environmental impact under CEQA. With SB 743 in place, transportation projects that promote travel by non-auto modes are no longer considered to result in an environmental impact. Roadway widening projects will now need to consider the potential to induce vehicle travel demand due to increased capacities, which may make driving a more attractive travel option.

SB 743 does not prevent a jurisdiction from continuing to analyze LOS as part of the development review process to determine if transportation improvements are needed to accommodate the proposed land uses, but LOS will no longer constitute the basis for CEQA impacts.

LOS ANGELES COUNTY VMT IMPLEMENTATION

Los Angeles County updated its *Transportation Impact Report Guidelines* in July 2020 to lay forth the requirements for CEQA and non-CEQA sections of transportation studies.

The updated CEQA guidelines contains a new section to determine the significance of transportation impacts (Section 15064.3). While OPR's Technical Advisory helped lead agencies regarding the variety of implementation questions to consider when adopting the new CEQA guidance, lead agencies must still make their own specific decisions about VMT methodology, thresholds, and mitigation.

The Los Angeles County guidance states that the Public Works Department will (generally) require the preparation and submission of a transportation impact analysis for projects that meet the following criteria.

- **Development Projects**
 - Estimated to generate a net increase of 110 or more daily vehicle trips.
- **Transportation Projects**
 - Likely to induce additional vehicle miles traveled (VMT) by increasing vehicle capacity.
 - Projects for which a transportation impact analysis is required by County ordinance, regulation, resolution, court order, or directive from the Board of Supervisors, Regional Planning Commission.

The transportation impact analysis will require the analyses and forecasting of impacts or deficiencies to the circulation system generated by the project. The transportation impact analysis will also identify feasible measures or corrective conditions to offset any impacts or deficiencies.

The county's process includes defining its Baseline VMT, developing VMT screening criteria, defining its impact thresholds, and determining potential mitigation strategies.

Defining the county's Baseline VMT is an important initial step in the implementation process because a VMT of the project will be compared to the county Baseline VMT to determine if the project exceeds the county's thresholds for VMT impacts. To determine the appropriate Baseline VMT for Los Angeles County, the VMT trends throughout the county and region were considered.

The regional Southern California Association of Governments (SCAG) model was determined to be the best available tool to estimate VMT in Los Angeles County. The most current version of the SCAG model, with a base year of 2012 and future year of 2040, was developed for the *2016 SCAG Regional Transportation Plan/ Sustainable Communities Strategy*, April 2016. The model utilizes traffic analysis zones (TAZs) that contain socio-economic data reflecting the population, employment, and land use development characteristics throughout the region.

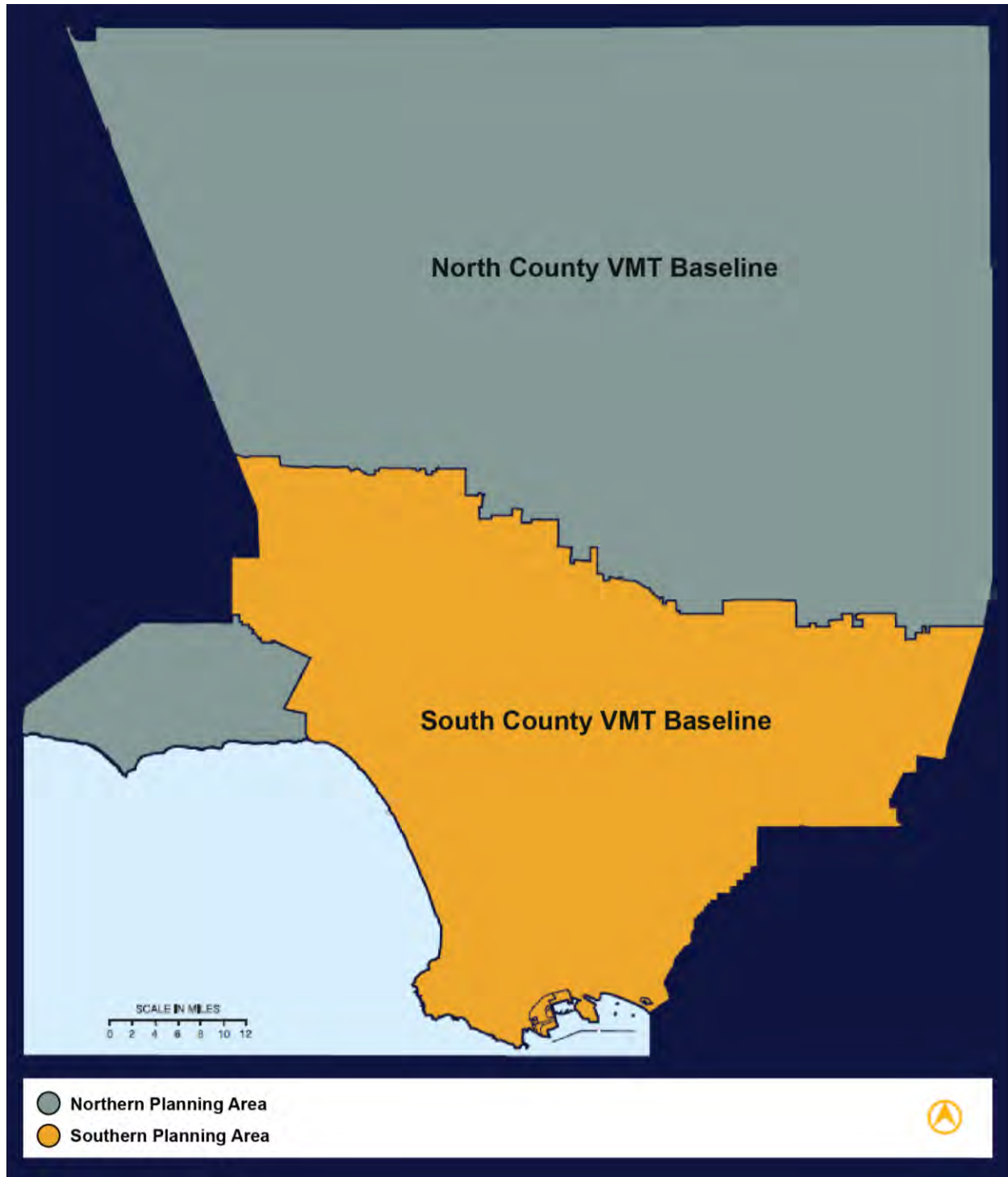
BASELINE VMT

Given the differences in VMT trends between the northern and southern planning areas in Los Angeles County, the County has adopted separate North County and South County Baseline VMT benchmarks. As shown in Figure 17, the North County Baseline VMT contains the Antelope Valley, Santa Clarita Valley, and Santa Monica Mountains planning areas in the more rural portion of the County and the South County Baseline VMT contains the remaining planning areas in the more urban portion of the County.

Traffic Report

By establishing a North County and South County Baseline VMT, the County is acknowledging the differences in travel behavior in these areas given the land use context and transportation network to represent a more realistic and reasonable picture of VMT activity levels, and thus a more appropriate and feasible baseline for VMT analysis.

Figure 17: Baseline VMT Benchmark Coverage Area for Los Angeles County



Traffic Report

Table 30 reports the North County and South County Baseline VMT metrics for the county as reported in the *Transportation Impact Analysis Guidelines* document published by the Los Angeles County Public Works updated September 2, 2020. Future development projects and plans in each of these areas will be compared to the applicable Baseline VMT metrics to determine if they meet the County’s thresholds for a VMT impact. The higher North County Baseline VMT acknowledges that projects and plans in the northern portion of the county will generate higher levels of VMT and should be compared to current VMT trends when determining the significant findings for VMT impacts. The lower South County Baseline VMT holds projects and plans in the southern portion of the county to a more conservative standard than if it was compared to the average VMT for the overall county. However, projects and plans should be compared to current VMT trends in the southern portion of the county with similar land use context when determining if VMT impacts may occur.

Table 30: Baseline VMT Thresholds for North and South County

Baseline Area	Total VMT per Service Population	Residential VMT per Capita	Employment VMT per Employee
North County	43.1	22.3	19.0
South County	31.1	12.7	18.4

Source: *Transportation Impact Analysis Guidelines*, Los Angeles County Public Works, July 23, 2020

While the baseline VMT trends included in this table reflect the base year of the SCAG model, baseline conditions for CEQA purposes will be specific to the release date of a project’s notice of preparation. The Total VMT per Service Population threshold is independent of (and not necessarily a total of) Residential VMT per Capita and Employment per Employee.

The VMT methodology for land use projects and plans is based on the origin-destination (OD) VMT method. The OD VMT method estimates VMT generated by land uses in a specific geographic area such as the entire county, or a smaller area such as a regional planning area (e.g., Palmdale) or project site. All vehicles traveling to and from the defined geographic area are tracked within the SCAG model and the number of trips and length of trips are used to calculate the OD VMT. The OD VMT method requires two major data inputs. The first data input is the set of vehicle trip tables (including all vehicle trips by vehicle mode and by time of day) that contain the number of trips between each zone in the model. The second data input is the set of highway distance skims (by vehicle mode and by time of day) that allows the trip distances for each OD pair to be based on congested travel time, speed, and cost from the final highway assignment. The total VMT matrices are then generated by multiplying the final OD trip tables with the corresponding highway distance skims. This method of computing VMT is also referred to as zone-based.

For land use projects and plans, the OD VMT methodology is the most appropriate method because it tracks all trips by trip purpose and the full length of those trips generated by the proposed land uses. The methodology can be used to report the following VMT metric.

- **Total VMT per Service Population** (all vehicles and all trip purposes): The total VMT to and from all zones in the geographic area are divided by the total service population to establish the efficiency metric of VMT per service population. The total service population is the sum of the number residents and the number of employees.

VMT THRESHOLDS FOR LAND USE PLANS

The Los Angeles County Transportation Impact Analysis Guidelines call for land use plans to promote outcomes whereby total VMT per service population (residents and employees) should be 16.8 percent below the existing VMT per service population for the Baseline Area in which the plan is located (see Table 30). Doing so will align the county with the latest state climate goals and help achieve its own targets. A 16.8 percent VMT reduction threshold also sets a higher bar than the suggested OPR threshold of 15 percent based on the latest research available. **At the time of the preparation of this document, the City of Palmdale is utilizing the LA County Guidelines for North County as the most appropriate VMT thresholds and analysis methodology.**

VMT ANALYSIS

The Palmdale General Plan envisions a growth in population, households and employment to work toward a goal of being a self-contained community in the northern part of Los Angeles County, also known as Antelope Valley. The socio-economic data for the Palmdale sphere of influence, which includes the City of Palmdale and the surrounding areas, is reported in Table 31. The socio-economic data reported include population, households, employment and service population (which represents the sum of population and employment). A map of the area is displayed in Figure 18.

Table 31: Palmdale Sphere of Influence Socio-economic Data

	2017 SCAG*	2017 Existing**	2040 SCAG†	2045 Base‡	2045 Preferred Plan§
Population	195,574	188,488	248,031	240,515	225,692
Households	56,863	53,626	75,925	72,840	70,618
Employment	35,575	49,501	39,821	67,085	74,804
Service Population	231,149	237,989	287,852	307,600	300,496

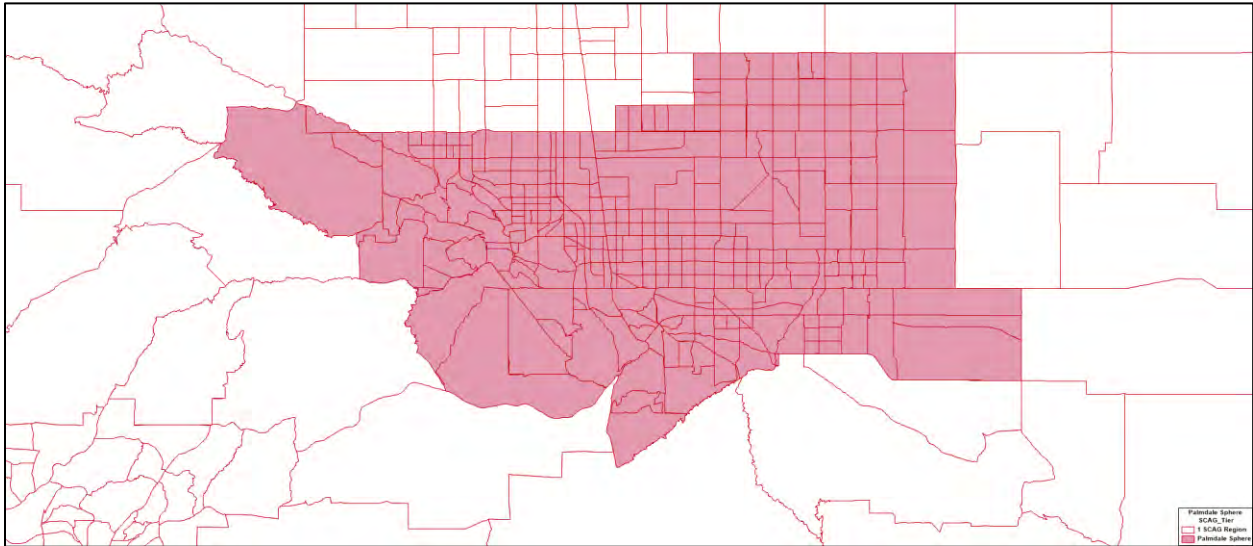
*Based on the 2017 existing SCAG land use scenario and the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS).

**Based on the 2017 SCAG with the City of Palmdale assumptions for households, population and employment and the SCAG 2016-2040 RTP/SCS. In addition, Plant 42 employment was added. The land use was updated for the Palmdale SOI zones only, all other zones contained the SCAG 2016-2040 RTP/SCS.

†Based on the 2040 SCAG land use scenario and the SCAG 2016-2040 RTP/SCS.

‡Based on the 2040 SCAG with the City of Palmdale assumptions for households, population and employment and the SCAG 2016-2040 RTP/SCS. In addition, Plant 42 employment was added. The land use was updated for the Palmdale SOI zones only, all other zones contained the SCAG 2016-2040 RTP/SCS.

§Based on the 2040 SCAG with the GP Preferred Plan assumptions for households, population and employment and SCAG 2016-2040. The land use was updated for the Palmdale SOI zones only, all other zones contained the SCAG 2016-2040 RTP/SCS.

Figure 18: Palmdale Sphere of Influence

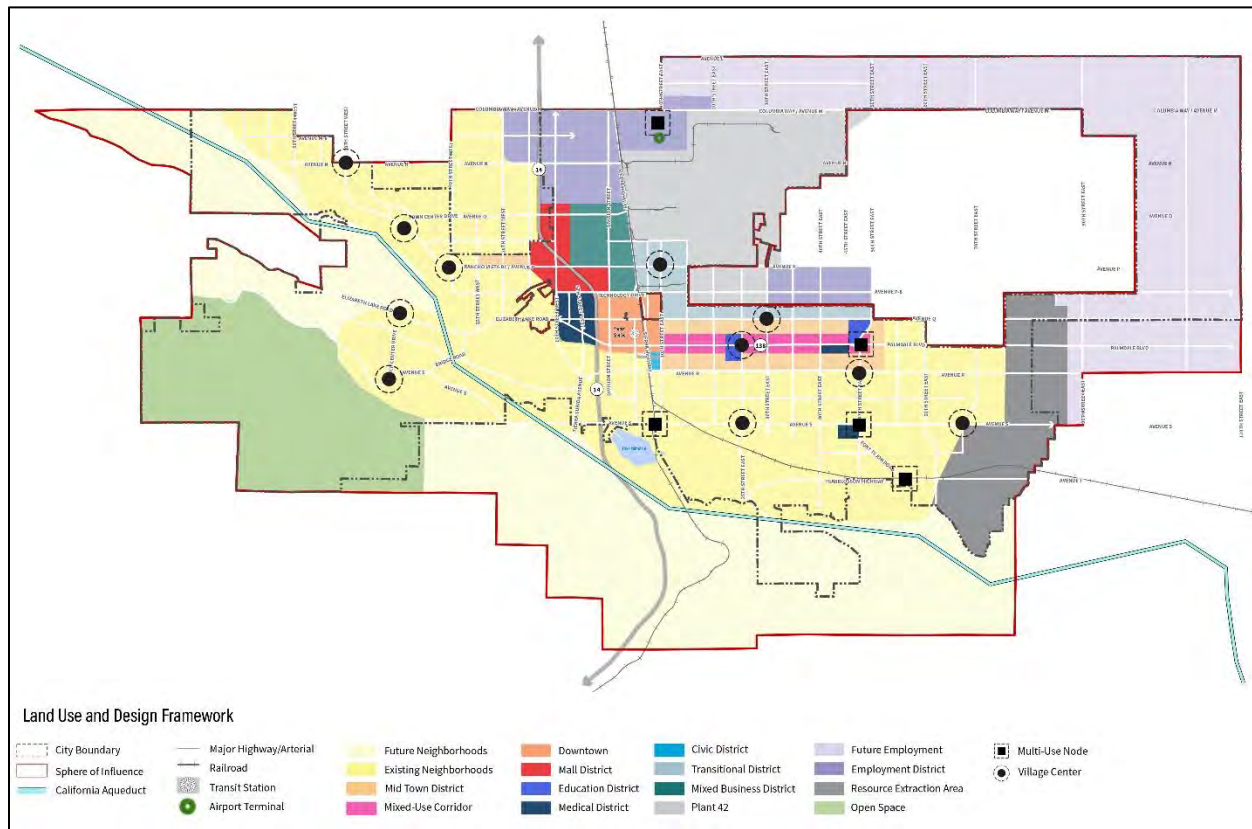
The project impacts criterion, as defined by the Los Angeles SB 743 implementation guideline, states that all land use plans in the Los Angeles County area have certain VMT thresholds that must be met.

Palmdale is located in the North County region and as such the North County VMT criteria apply. The Baseline VMT threshold guidelines were presented previously in Table 30. The VMT screening procedure of the Palmdale General Plan Update (Palmdale GP) suggests that there are impacts because more than 110 trips are generated; therefore, a VMT impact criteria assessment is required for the Palmdale GP. The procedure compares the “Total VMT per Service Population” against the North County Baseline VMT scenario (see Table 30) for any impacts generated by the Palmdale GP.

The Palmdale General Plan preferred scenario (2045 Preferred Plan) is the future land use forecasting developed for future growth within the Palmdale city limits and its sphere of influence. The 2045 Preferred Plan was selected based on extensive review and feedback received of the scenarios by the Planning Commission, City Council, General Plan Advisory Committee, the community, and stakeholders. The major elements of the 2045 Preferred Plan, as shown in Figure 19, include:

- Two education districts
- Three health and wellness districts
- Regional commercial uses around the Antelope Valley Mall and a regional commercial area to the west of the intersection of Avenue Q/45th Street East
- A mix of employment uses around Plant 42
- Mixed uses along the Palmdale Boulevard corridor
- Medium density housing north and south of Palmdale Boulevard
- Village Centers with a mix of neighborhood retail or commercial uses along with residential uses in mixed-use format in various locations throughout the city.

Figure 19. 2045 Preferred Plan Land Use and Design Framework



The SCAG RTP/SCS Travel Demand Model (SCAG model) was run through all four steps of the SCAG model for the following scenarios:

- **2017 SCAG:** This model run is based on the 2017 model forecast year assumptions using the 2016 RTP/SCS model directly without any modifications.
- **2017 Existing:** The 2017 SCAG model forecast year is used and the land use in the Palmdale SOI is modified with land use obtained from the City of Palmdale. The employment is updated for several zones to account for Plant 42, which is not in the employment forecasts.
- **2040 SCAG:** This model run is based on the 2040 model forecast year assumptions using the 2016 RTP/SCS model directly without any modifications.
- **2045 Base:** The 2040 SCAG model forecast year is used and the land use in the Palmdale City limits were modified to reflect updated assumptions. The 2045 Base scenario is developed by updating the 2040 SCAG land use within the Palmdale SOI with land use obtained from the City of Palmdale. The employment is updated for a few zones to account for Plant 42, which was not in the employment forecasts. The land use updates are made to all the zones within the Palmdale SOI to reflect updated socioeconomic data forecasts.
- **2045 Preferred Plan:** The 2040 SCAG model forecast year is used and the land use in the Palmdale City limits are modified to reflect the final 2045 Preferred Plan scenario assumptions. The 2045 Preferred Plan scenario are updated with revised socioeconomic data forecasts which are conservative in nature. Land use updates are made to all the zones within the Palmdale SOI to reflect updated socioeconomic data forecasts.

Traffic Report

The SCAG zone system is refined for the Palmdale sphere of influence only to perform traffic assignments after the original SCAG model is run through the complete SCAG model (four steps) for each of the scenarios. The expanded zone system in the Palmdale sphere of influence is used for traffic assignment purposes to better reflect the ground conditions in the study area as the original SCAG zones are too large.

The VMT generated by the Palmdale sphere of Influence encompasses the city of Palmdale for which the land use plan is being developed. The geographic area covered by the Palmdale sphere of influence includes the city of Palmdale and the surrounding areas as shown previously in Figure 2. The VMT generated by trips between the Palmdale sphere of influence and other areas of the SCAG region is computed for all trips from and to the Palmdale SOI. The VMT threshold results of the various scenarios are shown in Table 32, which compares the Baseline VMT threshold criteria for the North County region. The Palmdale GP scenarios are well below the North County targets of 35.9, which is a 16.8 percent reduction from the baseline VMT. The Palmdale GP scenarios effectively reduce the total VMT per service population by more than double the required reduction needed. VMT per service population is the only metric or impact criteria required for a land use plan such as the Palmdale General Plan, as reported in Section 3.1.3—Impact Criteria of the *Transportation Impact Analysis Guidelines* document published by the Los Angeles County Public Works (July 23, 2020). The 2045 Preferred Plan has the least significant impact of all the scenarios, where the socio-economic data were evaluated and placed in the optimum locations for smart growth considerations. Therefore, there is no VMT impact from the 2045 Preferred Plan and as such, no mitigations are necessary.

Table 32: Baseline VMT Thresholds—Total VMT per Service Population

	2017 SCAG	2017 Existing	2040 SCAG	2045 Base	2045 Preferred Plan
Total VMT for service population from the model scenarios *	35.4	34.3	32.5	30.6	27.0
VMT impact criteria threshold result	Pass	Pass	Pass	Pass	Pass

Note: North County baseline VMT for total service population is 43.1 as shown in Table 31.

*A 16.8% decrease from the baseline VMT amounts to 35.9 as recommended by the Los Angeles County Public Works *Transportation Impact Analysis Guidelines*.

In addition, other metrics are reported against the Baseline North County targets as shown in Table 32 below for home-based work and all home-based trips. All home-based trips are trips that originate at home; home-based work trips originate at home and end at a workplace. These metrics are not required for land use plans such as the Palmdale General Plan as they are primarily required for project specific VMT impacts. Table 33 shows the home-based VMT comparisons, where the employment VMT per employee is very similar to the North County Baseline target for the 2045 Preferred Plan scenario. The residential VMT per capita is, however, significantly lower than the baseline target and effectively reduces the overall VMT for home-based trips that includes all residents, which in turn reduces emissions.

Table 33: Baseline VMT Thresholds—Home-based Trips

North County Target	Target	2017 Existing	2045 Base	2045 Preferred Plan
Employment VMT per employee*	19.00	13.37	11.48	19.65
Residential VMT per capita**	22.30	26.19	23.20	16.57

*Employment VMT is the VMT generated by home-based work trip attractions

**Residential VMT is the VMT generated by home-based work and home-based other trip productions.

Note: These metrics are not required for land use plans such as the Palmdale General Plan and are presented for information purposes only.

Table 34 presents the various statistics for the resident home-based trips with origins (productions) in the Palmdale SOI for all the scenarios. The average trip lengths for home-based work and all home-based trips decrease in the 2045 scenarios, which in turn reduces the VMT generated. The resident VMT per capita and the resident VMT per employee also decrease. All these reductions effectively contribute to the overall reduction in VMT and thereby improve the air quality by reducing the emissions of greenhouse gases and CO₂.

Table 34: Home-based Trips and VMT Statistics

	2017 Existing	2045 Base	2045 Preferred Plan
Palmdale sphere - population	188,488	240,515	225,692
Palmdale sphere - households	53,626	72,840	70,618
Palmdale sphere - employment	49,501	67,085	74,804
Home-based work trips - productions	98,084	112,477	92,503
Home-based work VMT - productions	3,096,569	3,497,945	1,997,333
Home-based work trips - attractions	59,460	76,521	108,228
Home-based work VMT - attractions	661,869	770,230	1,469,886
Home-based work trips per capita	0.52	0.47	0.41
Home-based work trips per employee*	1.20	1.14	1.45
Home-based work VMT per capita	16.43	14.54	8.85
Home-based work VMT per employee*	13.37	11.48	19.65
Home-based work - trip length	31.57	31.10	21.59
Home-based all trips - productions	299,413	357,163	296,393
Home-based all VMT - productions	4,936,083	5,580,844	3,740,763
Home-based all trips - attractions	247,409	320,037	308,625
Home-based all VMT - attractions	2,040,790	2,543,397	2,874,992
Home-based all trips per capita	1.59	1.48	1.31
Home-based all trips per employee*	5.00	4.77	4.13
Home-based all VMT per capita	26.19	23.20	16.57
Home-based all VMT per employee*	41.23	37.91	38.43
Home-based all trips – trip length	16.49	15.63	12.62

*This computation uses attractions

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Table 35 shows that the average trip length for all trip purposes also decreases, thereby reducing VMT and contributing to the reduction of greenhouse gases. The zone-based VMT computations are computed by using a highway skim matrix for travel-time and travel-distances along with the trip table matrices. This procedure involves matrix computations, where the skim matrices are derived from a valid traffic assignment. The results of these computations are summarized only for the zones in the Palmdale SOI. Note that the VMT generated by this process (skim-based) will be slightly different from the VMT generated by a link-based process. The VMT reported in Table 35 is used for computing the total VMT per service population.

Table 35: All Trips and VMT Statistics

All Trip Purposes—Palmdale Sphere	2017 Existing	2045 Base	2045 Preferred Plan
Total service population	237,989	307,600	300,496
VMT (zone-based)	8,153,876	9,424,251	8,111,684
Total trips per capita	2.70	2.52	2.50
Total trips per employee	10.30	9.04	7.54
Total VMT per service population	34.30	30.60	27.00
All trips—average trip length	11.87	11.56	10.86

VMT MITIGATION OPPORTUNITIES

Although no mitigations are required for the 2045 Preferred Plan, it is useful to understand the mitigation strategies that may be applied in the future, if needed, to reduce the VMT through mitigation measures. The types of mitigation that affect VMT are those that reduce the number of single-occupant vehicles generated. This can be accomplished by modifying the proposed land uses or by implementing transportation demand management (TDM) strategies. Transportation demand management strategies are reductions to trip generation based on certain types of project site modifications, programming, and operational changes (see Table 36 for examples of TDM strategies).

Research documented in the 2010 California Air Pollution Control Officers Association (CAPCOA) publication, *Quantifying Greenhouse Gas Mitigation Measures*, offers TDM methodologies based on preferred literature, along with methodology based on alternative literature, to estimate the effectiveness of each strategy².

As part of the environmental process, specific mitigation strategies must be tailored to the characteristics of the project area followed by analysis and documentation of the effectiveness of the mitigation strategies to determine if those strategies will adequately mitigate impacts or if impacts will remain significant and unavoidable. Given that research on TDM strategies is on-going, feasible mitigation measures must be considered based on the best data available at the time.

The strategies described below in Table 36 are examples of the mitigation options that are most effective in areas comparable to Palmdale. Many of these strategies have already been implemented.

² California Air Pollution Control Officers Association, *Quantifying Greenhouse Gas Mitigation Measures*, August 2010
<http://www.capcoa.org/wp-content/uploads/downloads/2010/09/CAPCOA-Quantification-Report-9-14-Final.pdf>.

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Table 36: VMT Reduction Strategies

Strategy	Description	VMT Benefit	Range of CAPCOA VMT Reductions
Increase diversity of developments (mixed use)	Includes mixed uses within Projects or in consideration of surrounding area.	Minimizes number and length of vehicle trips.	9 to 30%
Provide pedestrian network improvements	Creates pedestrian network within projects and connects to nearby destinations. Could also occur through impact fee program for active transportation improvements.	Encourages people to walk within and to project.	0 to 2%
Provide traffic calming measures and low-stress bicycle network improvements	Creates networks with low vehicle speeds and volumes that support walking and bicycling. Could also occur through impact fee program for active transportation improvements.	Encourages people to bicycle, especially for shorter trips.	0.25 to 1%
Implement car-sharing and ride-sharing programs	Shared fleet of vehicles accessible on-site for residents or employees. Can serve as a first/last-mile solution to connect with transit.	Reduces the need to own a vehicle or the number of household vehicles.	Car-Sharing: 0.4 to 0.7% Ride-Sharing: 1 to 15%
Encourage telecommuting and alternative work schedules	Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered start times, flexible schedules, or compressed work weeks.	Reduces the number of days employees need to work and/or shifts commute time outside of peak periods to avoid adding to congestion.	0.07 to 5.5%
Commute Trip Reduction Programs	Projects can implement a voluntary Commute Trip Reduction program with employers to discourage single-occupancy vehicle trips and encourage alternative modes of transportation. Alternatively, a jurisdiction can implement a Commute Trip Reduction Ordinance with the intent of reducing drive-alone travel mode share.	Encourages alternatives to commuting in single-occupancy vehicles.	Varies based on selected programs
Limited Parking Supply	Projects can change parking requirements and types of supply within the Project site to encourage “smart growth” development and alternative transportation choices by project residents and employees.	Encourages alternatives to the use of single-occupancy vehicles.	5% - 12.5%
Unbundle Parking Costs from Property Cost	Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost from the property cost.	Encourages alternatives to the use of single-occupancy vehicles.	2.6% - 13%

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Table 37 presents the percent share of VMT generated by trips between the Palmdale sphere of influence and other areas of the SCAG region. The intra-Palmdale VMT increased in the 2045 Preferred Plan scenario, reducing VMT to other areas using smart growth assumptions (e.g., a good mixture of households and employment and transit-oriented developments). Palmdale has been an exporter of workers, but now finds itself being less of an exporter with smart growth initiatives and striving toward being self-contained as evident by the reduction to VMT to other regions and the increase in VMT to the Palmdale sphere of influence and neighboring areas (e.g., Lancaster and the High Desert Region). The VMT to other parts of Los Angeles and Orange counties dropped from 49 to 36 percent, a decrease of 13 percent, primarily due to the reduced number of longer trips.

Table 37: VMT between Palmdale Sphere and Areas within the SCAG Region

Percent Share of VMT	2017 SCAG	2017 Existing	2040 SCAG	2045 Base	2045 Preferred Plan
Within Palmdale sphere	12.7%	14.4%	12.7%	15.9%	16.9%
Within Palmdale/Lancaster/High Desert region	30.9%	33.4%	29.8%	34.4%	38.3%
Between Palmdale and LA County/Orange County	48.9%	45.9%	46.4%	41.9%	35.6%
Between Palmdale and remainder of SCAG region and external trips from outside the region	20.2%	20.7%	23.8%	23.8%	26.1%
Total	100%	100%	100%	100%	100%

Table 38 displays the link-based daily VMT generated by the SCAG model for the different facility types having an origin or destination in the Palmdale sphere of influence. Trips which are pass-through in nature, where they do not have an origin or destination in the Palmdale SOI are not counted. The link-based VMT computations are computed by selecting all the zones in the Palmdale SOI and performing a “Select Zones” traffic assignment procedure.

Table 38: VMT to/from Palmdale Sphere to Areas within the SCAG Region by Facility Type

Facility Type	2017 SCAG	2017 Existing	2040 SCAG	2045 Base	2045 Preferred Plan
Freeways	2,991,484	2,893,868	3,069,614	2,945,756	2,395,390
HOT facilities	11,995	11,431	10,255	9,285	7,911
HOV facilities	310,128	284,701	330,265	284,422	184,453
Expressway/parkway	3,940	4,381	4,855	5,650	5,083
Principal arterials	1,436,595	1,484,072	1,539,496	1,671,644	1,571,929
Minor arterials	1,566,404	1,631,560	1,744,660	1,897,218	1,821,834
Major collectors	1,101,524	1,067,379	1,343,539	1,321,027	1,075,565
Minor collectors	40,011	41,916	38,246	43,307	53,726
Freeway ramps	156,721	152,550	162,438	156,041	122,764
Truck lanes only	4,456	6,323	4,427	7,485	8,130
Centroid connectors	423,875	450,545	453,483	520,432	480,325
Total	8,047,133	8,028,726	8,701,278	8,862,268	7,727,110

Table 39 shows the link-based daily VMT including all trips generated by the SCAG model regardless of whether the trip begins or ends within the Palmdale sphere of influence. The 2045 Preferred Plan scenario is lower than the adopted 2040 SCAG RTP/SCS forecasts for both the SCAG region and the Palmdale sphere of influence. All trips using the highway network within the Palmdale SOI are counted.

Table 39: VMT for All Links within the Geographic Area

All Trips Generated within or Passing through Palmdale Sphere (II, IX-XI and XX)*	2017 SCAG	2017 Existing	2040 SCAG	2045 Base	2045 Preferred Plan
SCAG region-daily VMT	467,745,693	467,270,822	537,732,813	537,063,042	535,079,227
Palmdale sphere-daily VMT	4,196,206	4,275,553	4,798,099	5,029,773	4,685,219

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI

IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.

XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI

XX = External-to-external trips, where both the origin and destination of the trips is anywhere in the SCAG region

Conclusion

It can be seen from Table 32 that the Palmdale General Plan scenarios are well within the acceptable VMT thresholds for land use plans in the North County region as the decrease in total VMT per service population is more than double the required reduction needed. The 2045 Preferred Plan has the lowest total VMT per service population among the scenarios with a reduction of more than 37 percent compared to the Baseline VMT for North County. As such, the 2045 Preferred Plan does not require mitigations.

The average overall trip length for all trip purposes decreases in the 2045 Preferred Plan scenario, in turn reducing the VMT generated. The home-based work VMT per capita and the home-based all VMT per capita also decreases. In addition, the average trip length for home-based work and home-based all trip purposes decreases in the 2045 Preferred Plan scenario, which in turn reduces the total amount of VMT generated. All these reductions in the amount of VMT generated effectively contribute toward improved air quality and thereby reduce the emissions of greenhouse gases and CO₂.

APPENDIX

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Socioeconomic Data Summary for the Palmdale Sphere of Influence

TAZ	2017 Existing			2045 Base			2045 Preferred Plan		
	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
288	1273.0	582.0	82.5	1866.4	874.7	86.9	0.0	0.0	0.0
325	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.7
331	3.7	1.3	6.5	4.3	1.4	7.5	4.3	1.4	7.5
333	8.6	2.8	8.7	9.9	3.0	10.9	9.9	3.0	10.9
335	43.5	27.6	0.0	25.6	11.7	0.0	25.6	11.7	0.0
350	10.0	7.0	5.0	9.4	7.0	5.0	2035.0	740.0	137.0
352	1377.0	775.0	210.0	1627.7	976.0	358.0	2575.6	783.7	215.0
353	1210.8	418.6	140.9	1558.0	576.7	141.8	1558.0	576.7	141.8
354	0.0	0.0	0.0	0.0	0.0	0.0	8.2	2.8	0.0
355	1564.0	428.0	49.0	2051.1	598.0	71.0	2101.7	620.6	33.5
356	973.0	273.2	27.5	1226.6	354.1	29.3	1226.6	354.1	29.3
357	3602.0	1348.0	685.0	4424.0	1627.0	703.0	22.4	6.5	0.0
358	0.0	0.0	18.6	0.0	0.0	22.1	0.0	0.0	0.0
359	365.0	126.1	15.4	424.8	151.6	16.7	424.8	151.6	16.7
360	727.0	248.9	57.8	959.5	341.0	59.7	755.2	220.2	92.0
361	0.0	0.0	3174.2	0.0	0.0	4472.4	1735.3	684.5	2303.0
362	2355.0	703.0	489.0	3660.0	1164.0	569.0	2873.1	830.5	472.3
363	507.3	188.5	53.8	537.5	178.9	62.6	328.2	95.3	0.0
364	0.0	0.0	242.4	0.0	0.0	1159.2	0.0	0.0	2461.5
365	1577.0	659.0	2851.0	2165.3	964.0	3145.0	2496.0	721.5	2949.0
366	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	628.6
367	0.0	0.0	181.0	0.0	0.0	202.0	27.5	8.0	203.2
368	1498.0	360.0	30.0	2191.1	561.0	32.0	1309.7	380.1	4.2
369	939.0	325.0	816.0	1423.7	525.0	931.0	1174.7	446.5	766.0
370	49.9	13.7	188.2	49.9	14.5	205.8	799.4	293.7	188.0
371	1321.0	417.0	1135.0	2242.0	754.0	1270.0	1608.2	528.4	1069.1
372	1877.0	1084.0	126.0	3258.7	2005.0	126.0	3775.7	1194.5	76.5
374	2399.0	683.0	29.0	2891.3	877.0	328.0	2194.5	685.1	9.0
375	0.0	0.0	142.8	0.0	0.0	229.0	0.0	0.0	4743.7
376	521.7	207.4	580.4	729.9	309.1	655.0	545.3	205.9	491.9
377	1551.0	371.0	394.0	2354.4	600.0	459.0	1533.2	456.4	346.1
378	216.5	101.2	8.9	220.9	94.9	9.9	0.0	0.0	0.0
379	6707.0	1774.0	265.0	7611.9	2145.0	394.0	6222.8	1839.8	259.4
380	3008.0	705.0	67.0	3023.6	755.0	106.0	2339.6	713.5	53.0

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Socioeconomic Data Summary for the Palmdale Sphere of Influence

TAZ	2017 Existing			2045 Base			2045 Preferred Plan		
	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
381	800.4	173.3	241.3	963.1	222.1	286.4	2019.4	686.6	360.0
382	1367.8	333.0	200.2	2738.5	710.4	305.5	1236.5	362.3	383.9
383	0.0	0.0	7.0	0.0	0.0	19.0	0.0	0.0	0.0
384	0.0	0.0	2.1	0.0	0.0	2.6	0.0	0.0	2.6
385	1831.0	420.0	488.0	2614.7	639.0	509.0	4160.9	1540.1	929.0
386	1138.5	230.0	28.5	1639.1	352.8	32.5	1073.5	310.3	20.0
387	1.0	1.0	30.2	1.3	1.3	31.3	9.6	2.8	30.0
388	259.7	78.6	30.7	312.3	98.8	30.6	312.3	98.8	30.6
389	303.5	59.8	34.1	361.6	74.3	33.6	361.6	74.3	33.6
390	307.5	101.1	22.1	316.8	83.2	99.4	316.8	83.2	99.4
393	57.8	29.7	5.7	64.5	29.8	6.4	64.5	29.8	6.4
4193	0.0	0.0	4.4	0.0	0.0	4.6	0.0	0.0	4.6
4194	0.0	0.0	0.9	0.0	0.0	0.9	0.0	0.0	0.0
4195	0.0	0.0	7.2	0.0	0.0	7.6	0.0	0.0	0.0
4196	583.0	172.0	105.0	1409.4	443.0	107.0	1061.0	307.1	106.2
4197	845.4	245.8	21.0	1160.7	359.5	26.5	1120.0	323.8	20.0
4198	515.6	156.2	21.0	707.8	228.5	26.5	544.0	157.3	64.9
4199	625.0	198.0	26.0	1149.6	388.0	63.0	730.4	211.1	19.0
4200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4201	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	247.6
4202	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4203	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4204	38.0	11.0	0.0	61.6	19.0	0.0	38.4	11.1	0.0
4205	22.0	2.6	3.2	25.6	2.9	3.7	25.6	2.9	3.7
4206	18.3	5.1	3.2	21.3	5.8	3.7	21.3	5.8	3.7
4207	11.0	7.0	0.0	10.3	7.0	0.0	25.6	7.4	0.0
4208	7.4	1.4	7.8	8.5	1.5	9.7	8.5	1.5	9.7
4209	3.7	1.4	8.2	4.2	1.5	10.1	4.2	1.5	10.1
4210	70.1	30.4	8.3	80.7	32.8	10.4	80.7	32.8	10.4
4211	1.2	1.4	8.1	1.4	1.5	10.1	1.4	1.5	10.1
4212	12.3	2.8	8.3	14.2	3.0	10.3	14.2	3.0	10.3
4213	9.8	2.8	8.2	11.3	3.0	10.2	11.3	3.0	10.2
4214	4.9	1.4	4.3	5.7	1.5	5.3	5.7	1.5	5.3
4215	52.9	24.8	4.1	60.9	26.8	5.0	60.9	26.8	5.0

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Socioeconomic Data Summary for the Palmdale Sphere of Influence

TAZ	2017 Existing			2045 Base			2045 Preferred Plan		
	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4216	14.0	3.0	0.0	13.1	3.0	0.0	12.8	3.7	0.0
4217	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4218	6.0	2.0	0.0	5.6	2.0	0.0	6.4	1.9	0.0
4219	1.0	1.0	0.0	0.9	1.0	0.0	3.2	0.9	0.0
4220	61.8	19.7	0.0	36.4	8.4	0.0	36.4	8.4	0.0
4221	45.8	23.7	0.0	27.0	10.1	0.0	27.0	10.1	0.0
4222	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4223	1.5	0.5	0.0	2.8	1.0	0.0	0.9	0.2	0.0
4224	1.5	0.5	0.0	2.8	1.0	0.0	0.0	0.0	0.0
4225	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4226	2.0	1.0	0.0	1.9	1.0	0.0	3.2	0.9	0.0
4227	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4228	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4229	1.0	1.0	0.0	0.9	1.0	0.0	2901.5	925.0	0.0
4230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4231	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4232	0.0	0.0	1.8	0.0	0.0	1.8	0.0	0.0	0.0
4233	0.0	0.0	2.2	0.0	0.0	2.2	0.0	0.0	0.0
4234	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4235	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4236	77.0	26.0	3.0	98.9	35.2	4.5	3.2	0.9	0.0
4237	2097.0	592.0	323.0	2181.1	656.0	328.0	1848.0	592.0	360.0
4238	1410.0	608.0	32.0	1549.8	712.0	44.0	1583.0	608.7	33.0
4239	683.5	258.4	141.2	879.5	355.9	142.1	879.5	355.9	142.1
4240	874.7	332.0	140.9	1125.5	457.3	141.8	1125.5	457.3	141.8
4241	99.3	27.2	5.1	126.7	37.0	5.1	127.7	37.4	5.1
4242	128.8	43.9	10.4	164.3	59.7	10.4	165.7	60.4	10.5
4243	60.0	17.9	5.5	76.5	24.4	5.5	331.4	95.8	44.0
4244	1107.0	346.0	26.0	1147.2	382.0	26.0	1184.1	346.0	12.0
4245	6.0	2.0	0.0	5.6	2.0	0.0	3.6	1.1	0.0
4246	5.0	3.0	0.0	4.7	3.0	0.0	1385.2	408.0	52.3
4247	843.0	209.0	9.0	829.1	219.0	10.0	720.0	208.1	22.0
4248	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4249	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Socioeconomic Data Summary for the Palmdale Sphere of Influence

TAZ	2017 Existing			2045 Base			2045 Preferred Plan		
	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4250	1993.0	550.0	111.2	2027.1	596.0	114.0	2265.6	654.9	88.0
4251	0.0	0.0	48.8	0.0	0.0	50.0	0.0	0.0	50.0
4252	0.0	0.0	0.0	0.0	0.0	0.0	6400.0	1850.0	120.0
4253	1375.0	349.0	13.0	1368.3	370.0	15.0	1920.0	555.0	0.0
4254	3501.2	940.7	300.4	3456.4	989.4	430.0	3264.0	943.5	303.0
4255	4541.8	1300.3	297.6	4483.7	1367.6	426.0	4437.4	1300.3	342.0
4256	1160.0	359.0	497.0	1116.1	368.0	545.0	1237.7	358.8	515.0
4257	1819.0	511.0	34.0	2245.3	672.0	51.0	1856.0	536.5	31.0
4258	892.4	250.5	13.7	1125.1	324.7	14.6	1125.1	324.7	14.6
4259	186.5	57.2	6.6	235.2	74.2	7.0	144.0	41.6	0.0
4260	319.0	108.0	13.3	402.2	140.0	14.2	307.6	89.7	16.0
4261	0.0	0.0	0.0	0.0	0.0	0.0	16.0	4.6	0.0
4262	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4263	0.0	0.0	18.4	0.0	0.0	21.9	165.3	59.7	43.3
4264	897.0	243.0	30.0	928.6	268.0	31.0	905.6	261.8	30.0
4265	1306.0	308.0	33.0	1329.3	334.0	35.0	1129.6	326.5	16.0
4266	845.0	195.0	7.0	1448.0	356.0	7.0	1052.8	304.3	33.0
4267	794.2	190.7	38.2	959.8	245.6	38.7	656.0	189.6	30.0
4268	921.8	261.3	35.8	1114.1	336.4	36.3	1001.6	289.5	30.0
4269	350.0	98.0	323.0	600.0	179.0	325.0	342.4	99.0	327.0
4270	1084.0	308.0	27.0	1542.7	467.0	28.0	1057.8	309.9	0.0
4271	248.0	90.7	7.6	288.6	109.0	8.3	288.6	109.0	8.3
4272	115.9	45.4	2.9	134.9	54.5	3.2	134.9	54.5	3.2
4273	1.0	1.1	200.1	3.8	4.3	257.2	105.8	30.6	907.3
4274	1.0	0.9	97.9	3.7	3.7	125.8	75.6	22.3	99.2
4275	405.8	122.8	15.3	472.3	147.6	16.6	346.0	100.8	32.0
4276	178.2	71.9	7.6	207.4	86.4	8.2	193.8	56.4	5.0
4277	163.2	58.6	7.6	189.9	70.5	8.3	166.4	48.1	25.0
4278	182.5	52.0	7.7	212.4	62.5	8.3	147.2	42.6	1.0
4279	201.8	68.6	7.5	234.9	82.4	8.2	187.4	54.6	1.0
4280	96.6	33.2	3.7	112.4	39.9	4.1	102.4	29.6	0.0
4281	36.5	14.4	2.9	42.5	17.3	3.1	62.6	18.5	0.0
4282	76.2	28.8	3.1	88.7	34.6	3.4	81.8	24.1	0.0
4283	87.0	25.4	3.8	101.2	30.6	4.1	70.4	20.4	0.0

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TAZ	2017 Existing			2045 Base			2045 Preferred Plan		
	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4284	76.2	22.1	3.8	88.7	26.6	4.1	78.6	23.1	1.0
4285	0.0	0.0	29.2	0.0	0.0	30.2	0.0	0.0	0.0
4286	6.0	2.1	10.9	7.9	2.8	11.3	0.0	0.0	0.0
4287	8.0	3.0	1339.0	7.5	3.0	2909.0	16.0	4.6	1460.5
4288	0.0	0.0	419.8	0.0	0.0	591.6	0.0	0.0	400.0
4289	248.0	73.0	2.0	363.5	114.0	6.0	2261.0	845.1	209.6
4290	2072.6	527.1	271.2	2283.0	618.5	278.6	1824.0	527.3	269.0
4291	301.4	77.9	91.8	332.0	91.5	94.4	479.9	141.9	64.0
4292	944.0	260.0	506.0	1076.9	316.0	666.0	1331.5	395.3	500.0
4293	1274.0	318.0	22.0	1564.3	416.0	126.0	1349.9	390.2	86.7
4294	236.0	137.0	20.0	313.7	194.0	28.0	1833.7	555.5	208.0
4295	163.0	85.0	998.0	162.0	90.0	1032.0	226.0	85.1	998.4
4296	0.0	0.0	131.0	0.0	0.0	204.0	0.0	0.0	247.3
4297	23.0	9.0	175.0	21.6	9.0	241.0	218.1	86.0	193.1
4298	27.0	6.0	118.0	25.3	6.0	174.0	22.4	6.5	93.7
4299	1479.9	647.2	30.5	1603.4	747.1	77.8	2341.4	793.5	1.0
4300	1379.1	480.8	25.5	1494.1	554.9	65.2	1545.1	481.9	19.2
4301	108.0	33.0	9.5	184.3	60.0	18.3	1751.4	531.0	2.0
4302	0.0	0.0	3.5	0.0	0.0	6.7	126.5	44.3	103.2
4303	148.3	66.9	11.3	157.1	63.5	13.1	0.0	0.0	0.0
4304	709.5	245.3	22.9	751.8	232.8	26.6	200.0	58.3	0.0
4305	348.9	166.2	33.1	369.6	157.8	38.6	1705.6	493.0	21.0
4306	0.0	0.0	0.8	0.0	0.0	0.8	124.8	36.1	0.0
4307	0.0	0.0	1.4	0.0	0.0	1.4	19.2	5.6	0.0
4308	0.0	0.0	4.8	0.0	0.0	4.8	230.4	66.6	20.0
4309	0.0	0.0	207.6	0.0	0.0	992.8	0.0	0.0	1812.1
4310	0.0	0.0	17.0	0.0	0.0	279.4	0.0	0.0	1892.1
4311	107.0	42.0	9.0	145.9	61.0	147.6	112.4	41.6	82.1
4312	0.0	0.0	260.0	0.0	0.0	269.0	0.0	0.0	258.2
4313	0.0	0.0	1645.0	0.0	0.0	1819.0	0.0	0.0	1645.0
4314	4.0	2.0	373.8	3.8	2.0	463.1	6.4	1.9	977.0
4315	0.0	0.0	187.2	0.0	0.0	231.9	0.0	0.0	226.5
4316	687.0	161.0	248.0	644.8	161.0	484.0	579.2	167.4	262.9
4317	0.0	0.0	834.0	0.0	0.0	1047.0	0.0	0.0	833.8

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TAZ	2017 Existing			2045 Base			2045 Preferred Plan		
	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4318	0.0	0.0	350.0	0.0	0.0	559.0	0.0	0.0	361.4
4319	811.0	185.0	345.0	1584.2	385.0	425.0	1508.0	527.3	338.3
4320	74.3	36.7	113.7	103.9	54.7	127.2	187.1	57.6	187.8
4321	316.7	137.3	96.3	442.4	204.3	107.8	398.4	138.8	172.3
4322	3501.0	848.0	314.0	3410.1	880.0	424.0	2572.3	853.0	307.9
4323	379.0	112.0	323.0	527.3	166.0	383.0	422.5	161.8	345.6
4324	741.0	179.0	457.0	913.1	235.0	594.0	1467.3	467.4	546.9
4325	1614.0	410.0	645.0	2926.4	792.0	716.0	1595.7	621.4	575.2
4326	1471.0	490.0	109.0	2169.7	770.0	122.0	1879.2	599.8	59.0
4327	600.0	133.0	220.0	1384.6	327.0	286.0	1201.8	393.7	223.3
4328	2592.0	693.0	352.0	3486.1	993.0	396.0	1824.9	694.9	339.5
4329	646.0	384.0	677.0	1378.5	873.0	1180.0	1250.9	486.5	726.4
4330	2177.0	590.0	435.0	2736.0	790.0	488.0	1612.6	619.2	433.7
4331	5394.1	1236.3	947.8	5387.0	1315.5	1036.2	4214.0	1259.2	952.0
4332	2615.0	623.0	66.0	3147.9	799.0	73.0	2147.5	637.9	36.0
4333	1.9	0.9	126.6	4.0	1.9	225.0	44.7	16.5	51.7
4334	797.1	186.1	231.4	1700.5	423.1	411.0	1100.2	331.3	196.3
4335	2753.0	678.0	263.0	3346.3	878.0	338.0	2247.9	692.9	218.5
4336	596.0	193.0	5.0	1371.0	473.0	5.0	810.4	292.2	0.0
4337	0.0	0.0	77.0	0.0	0.0	92.2	0.0	0.0	0.0
4338	100.0	36.0	0.0	628.4	241.0	0.0	128.0	37.0	8.0
4339	1520.3	531.1	171.3	2361.6	878.9	194.6	1715.5	531.2	126.0
4340	985.7	320.9	182.7	1531.1	531.1	207.4	1104.0	320.2	110.5
4341	2096.0	499.0	316.0	2523.3	640.0	354.0	1713.1	500.3	301.3
4342	0.0	0.0	85.5	0.0	0.0	137.1	0.0	0.0	1877.6
4343	0.0	0.0	4200.7	0.0	0.0	6734.0	0.0	0.0	8115.3
4344	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4345	1171.3	379.6	577.6	1638.8	565.9	652.0	1070.6	378.4	538.0
4346	1795.0	817.0	212.0	2233.4	1083.0	296.0	2313.6	817.0	202.7
4347	639.0	159.0	112.0	1067.5	283.0	203.0	559.2	165.9	28.7
4348	2491.0	557.0	348.0	2669.7	636.0	372.0	1904.5	557.2	298.5
4349	2476.0	554.0	48.0	2449.9	584.0	60.0	2042.0	626.7	43.4
4350	17.0	8.9	1.8	17.4	8.3	2.0	9.6	2.8	0.0
4351	85.0	40.8	6.9	86.8	38.3	7.7	69.0	20.4	0.0

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TAZ	2017 Existing			2045 Base			2045 Preferred Plan		
	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4352	227.3	95.9	5.8	232.0	89.9	6.5	136.2	39.8	0.0
4353	74.2	37.3	2.7	75.7	35.0	3.0	0.0	0.0	0.0
4354	0.0	0.0	0.0	0.0	0.0	0.0	49.8	14.8	0.0
4355	10.0	5.0	0.0	336.0	179.0	0.0	19.2	5.6	0.0
4356	0.0	0.0	0.0	0.0	0.0	0.0	6.4	1.9	0.0
4357	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4358	6883.0	1712.0	378.0	8343.6	2211.0	410.0	5926.4	1713.1	349.0
4359	1106.0	525.0	54.0	1566.1	792.0	59.0	1824.0	527.3	2.0
4360	464.0	109.0	81.0	1002.9	251.0	99.0	381.1	112.6	2.0
4361	2967.0	692.0	347.0	3127.0	777.0	352.0	2400.0	693.8	329.0
4362	1323.6	358.7	358.7	1592.6	459.9	425.6	2204.2	732.5	1042.8
4363	2819.0	923.0	243.0	3804.1	1327.0	266.0	2801.9	920.3	177.2
4364	2970.0	868.0	217.0	4027.4	1254.0	295.0	2781.3	867.3	173.0
4365	964.0	218.1	75.0	1930.1	465.2	114.5	750.7	217.2	10.0
4366	598.3	124.9	102.8	1197.8	266.4	157.0	488.2	141.1	100.0
4367	0.0	0.0	6.8	0.0	0.0	8.0	0.0	0.0	0.0
4368	0.0	0.0	8.6	0.0	0.0	10.1	0.0	0.0	0.0
4369	0.0	0.0	3.8	0.0	0.0	4.5	0.0	0.0	0.0
4370	0.0	0.0	15.0	0.0	0.0	17.7	0.0	0.0	0.0
4371	0.0	0.0	4.0	0.0	0.0	4.8	0.0	0.0	0.0
4372	0.0	0.0	5.8	0.0	0.0	6.9	0.0	0.0	0.0
4373	0.0	0.0	3.9	0.0	0.0	4.6	0.0	0.0	0.0
4374	0.0	0.0	3700.9	0.0	0.0	5069.0	0.0	0.0	4239.8
4375	0.0	0.0	44.7	0.0	0.0	61.2	0.0	0.0	44.4
4376	0.0	0.0	41.4	0.0	0.0	56.7	0.0	0.0	108.5
4377	0.0	0.0	28.3	0.0	0.0	28.3	0.0	0.0	0.0
4378	0.0	0.0	1370.2	0.0	0.0	1370.2	0.0	0.0	1535.2
4379	0.0	0.0	15.5	0.0	0.0	15.5	0.0	0.0	0.0
4380	2.4	1.2	121.9	2.2	1.2	488.4	10.7	3.7	103.1
4381	40.3	10.5	129.2	37.8	10.5	517.7	150.4	43.5	58.5
4382	154.3	43.1	105.0	144.8	43.1	421.1	857.3	312.3	57.2
4383	5.0	1.2	129.9	4.7	1.2	520.8	1802.3	677.5	533.7
4384	0.0	0.0	100.7	0.0	0.0	106.4	0.0	0.0	140.9
4385	0.0	0.0	102.0	0.0	0.0	107.7	0.0	0.0	2.1

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4386	0.0	0.0	101.0	0.0	0.0	106.8	0.0	0.0	386.8
4387	0.0	0.0	98.4	0.0	0.0	103.9	197.5	65.1	99.0
4388	2.3	1.3	99.3	2.2	1.3	104.9	57.6	21.4	244.6
4389	11.7	3.8	98.7	11.0	3.8	104.3	114.9	41.9	538.3
4390	0.0	0.0	7.4	0.0	0.0	13.2	0.0	0.0	360.7
4391	0.0	0.0	7.4	0.0	0.0	13.1	0.0	0.0	394.1
4392	2.3	1.1	7.5	3.5	1.8	13.3	13.7	5.1	362.8
4393	0.0	0.0	7.4	0.0	0.0	13.1	0.0	0.0	836.5
4394	729.7	161.9	6.3	1130.4	267.2	11.3	2434.8	857.8	1254.1
4395	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	239.2
4396	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4397	0.0	0.0	0.0	0.0	0.0	0.0	53.7	15.7	0.0
4398	0.0	0.0	0.0	0.0	0.0	0.0	5253.9	1916.6	1070.7
4399	0.0	0.0	0.0	0.0	0.0	0.0	1453.2	479.1	745.8
4400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4401	0.0	0.0	7.6	0.0	0.0	8.9	0.0	0.0	0.0
4402	0.0	0.0	3.8	0.0	0.0	4.5	0.0	0.0	0.0
4403	0.0	0.0	20.4	0.0	0.0	24.1	0.0	0.0	0.0
4404	0.0	0.0	10.3	0.0	0.0	12.1	0.0	0.0	0.0
4405	0.0	0.0	7.5	0.0	0.0	8.9	0.0	0.0	0.0
4406	0.0	0.0	9.7	0.0	0.0	11.5	0.0	0.0	0.0
4407	40.5	18.4	57.2	51.6	23.6	70.9	28.8	8.3	0.0
4408	9.6	4.1	35.0	12.3	5.2	43.3	3.2	0.9	0.0
4409	843.9	243.5	22.9	1076.2	311.8	28.4	422.4	122.1	0.0
4410	0.0	0.0	32.8	0.0	0.0	40.7	0.0	0.0	0.0
4411	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.9	0.0
4412	0.0	0.0	0.0	0.0	0.0	0.0	73.6	21.3	0.0
4413	87.2	30.2	2.9	147.6	54.4	15.3	98.8	29.8	0.0
4414	258.8	96.8	5.1	438.0	174.6	26.7	326.7	97.5	26.0
4415	471.0	159.0	20.0	589.5	212.0	20.0	559.7	162.0	229.0
4416	1.2	0.3	2.6	1.1	0.3	26.6	19.2	5.6	0.0
4417	4.8	1.8	2.4	4.5	1.8	25.4	121.6	35.2	4.1
4418	52.0	20.0	81.0	73.2	30.0	84.0	70.4	20.4	0.0
4419	4043.0	917.0	198.0	4159.0	1005.0	281.0	3171.2	916.7	194.1

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4420	3952.0	874.0	434.0	4265.4	1005.0	507.0	3040.0	878.8	483.9
4421	1887.5	435.0	28.5	2717.4	667.2	32.5	1543.8	446.2	13.0
4422	1836.4	395.3	82.8	2669.1	612.2	94.9	1374.5	397.3	83.2
4423	1185.6	295.7	81.2	1723.2	457.8	93.1	1024.0	296.0	70.0
4424	1622.3	381.2	26.3	2272.8	568.9	32.3	1344.0	388.5	2.0
4425	1385.7	292.8	25.7	1941.3	437.1	31.7	1280.0	370.0	22.0
4426	1998.0	443.0	333.0	2696.6	637.0	341.0	1646.0	475.8	314.0
4427	1983.0	457.0	42.0	2659.6	653.0	42.0	1600.0	462.5	32.0
4428	0.0	0.0	475.0	0.0	0.0	475.0	321.2	113.8	542.5
4429	5.0	2.0	28.3	6.3	2.7	29.4	0.0	0.0	30.0
4430	0.0	0.0	23.5	0.0	0.0	24.3	0.0	0.0	0.0
4431	5243.0	1186.0	870.0	7995.9	1927.0	955.0	5106.4	1476.1	886.1
4432	0.0	0.0	0.0	0.0	0.0	0.0	455.0	157.6	105.9
4433	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4434	7.0	3.0	0.0	359.2	164.0	0.0	64.3	18.6	2.3
4435	930.0	191.0	9.0	1247.7	273.0	45.0	673.0	194.6	27.4
4436	298.0	96.0	4.5	422.5	145.0	7.2	332.9	96.2	1.8
4437	0.0	0.0	38.5	0.0	0.0	60.8	0.0	0.0	0.0
4438	1.0	1.0	8.0	1.9	2.0	73.0	6.4	1.9	76.7
4439	0.0	0.0	21.0	0.0	0.0	24.0	0.0	0.0	0.0
4440	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4441	0.0	0.0	0.0	0.0	0.0	0.0	273.4	85.6	14.5
4442	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4443	100.4	34.8	30.4	120.8	43.7	30.4	120.8	43.7	30.4
4444	304.2	84.6	30.0	365.7	106.4	29.9	365.7	106.4	29.9
4445	1388.8	414.0	48.3	1670.0	520.8	48.2	1670.0	520.8	48.2
4446	1344.3	420.1	49.8	1616.5	528.4	49.8	1616.5	528.4	49.8
4447	229.6	75.6	48.2	276.0	95.0	48.1	276.0	95.0	48.1
4448	23.0	7.6	161.9	27.6	9.5	161.7	27.6	9.5	161.7
4449	119.1	40.8	220.7	143.2	51.3	220.3	143.2	51.3	220.3
4450	0.0	0.0	0.0	0.0	0.0	0.0	584.0	169.3	6.0
4451	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
4452	25.4	6.4	30.5	30.2	8.0	30.0	30.2	8.0	30.0
4453	519.7	128.1	30.5	619.1	159.2	30.0	619.1	159.2	30.0

Traffic Report

Socioeconomic Data Summary for the Palmdale Sphere of Influence

TAZ	2017 Existing			2045 Base			2045 Preferred Plan		
	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4454	520.7	129.1	26.9	620.4	160.5	26.5	620.4	160.5	26.5
4455	508.5	123.8	26.7	605.8	153.9	26.3	605.8	153.9	26.3
4456	528.8	133.4	30.7	630.0	165.9	30.2	630.0	165.9	30.2
4457	789.6	234.8	62.9	940.8	291.9	62.0	940.8	291.9	62.0
4458	2154.7	576.4	121.5	2567.3	716.5	119.6	2567.3	716.5	119.6
4459	43.6	13.9	118.1	52.0	17.2	116.3	52.0	17.2	116.3
4460	880.0	254.0	114.3	1048.4	315.8	112.5	1048.4	315.8	112.5
4461	74.1	20.3	33.8	88.3	25.2	33.3	3.2	0.9	0.0
4462	26.4	7.5	16.4	31.4	9.3	16.1	3.2	0.9	0.0
4463	343.1	85.4	29.8	408.7	106.1	29.3	134.4	38.9	0.0
4464	333.9	90.7	30.4	397.8	112.8	29.9	144.0	41.6	31.0
4465	417.1	102.5	31.0	497.0	127.4	30.5	281.6	81.4	1.0
4466	0.0	0.0	30.5	0.0	0.0	30.0	0.0	0.0	45.0
4467	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4468	373.5	122.9	26.9	384.8	101.1	120.8	384.8	101.1	120.8
4469	2.0	1.5	0.0	1.9	1.5	0.0	6.4	1.9	0.0
4470	2.0	1.5	0.0	1.9	1.5	0.0	6.4	1.9	0.0
4471	6.0	2.0	6.0	7.0	2.5	9.5	16.0	4.6	12.0
4472	6.0	2.0	6.0	7.0	2.5	9.5	32.0	9.3	0.0
4473	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4474	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4475	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4476	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4477	0.0	0.0	2.0	0.0	0.0	2.0	114.5	33.3	17.0
4478	0.0	0.0	0.0	0.0	0.0	0.0	16.0	4.6	0.0
4479	22.9	4.5	1.0	25.5	4.5	1.1	16.0	4.6	0.0
4480	109.7	43.1	9.9	122.2	43.2	11.1	122.2	43.2	11.1
4481	135.0	71.4	18.8	150.4	71.5	21.0	150.4	71.5	21.0
4482	3.6	1.5	4.6	4.0	1.5	5.1	4.0	1.5	5.1
4483	964.0	289.9	2.1	1074.4	290.5	2.3	1074.4	290.5	2.3
	188,488.0	53,626.0	49,501.2	240,515.4	72,840.2	67,084.6	225,692.0	70,618.1	74,804.4

Appendix E

Traffic Noise Prediction Model

ID	Output						Inputs											Auto Inputs				
	dBA at 50 feet			Distance to CNEL Contour			Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Receiver	Ground Absorption	Lane Distance
	L _{eq,24hr}	L _{dn}	CNEL	70 dBA	65 dBA	60 dBA																
1	71.1	74.8	75.2	112	240	518	Columbia Way/Avenue M	10th Street W to Sierra Hwy	23,348	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.0	75.7	76.1	127	274	591	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	28,434	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	199	428	Columbia Way/Avenue M	10th Street E to 20th Street E	17,513	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.9	72.6	73.0	79	170	365	Columbia Way/Avenue M	20th Street E to 30th Street E	13,832	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	66.2	69.9	70.3	52	113	242	Columbia Way/Avenue M	30th Street E to 40th Street E	7,475	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.7	71.4	71.8	66	142	305	Columbia Way/Avenue M	40th Street E to 50th Street	10,559	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
2	68.5	72.2	72.6	74	160	345	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	16,758	40	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.2	72.9	73.3	83	179	386	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	20,985	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	188	404	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	22,457	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.5	100	215	463	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	27,509	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.2	73.9	74.3	97	209	451	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	26,453	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.4	76.1	76.5	136	293	632	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	41,536	40	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	71.7	75.4	75.8	122	263	567	Rancho Vista Ave/Avenue P	10th Street W to SR 14	35,290	40	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.7	73.4	73.8	89	192	415	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	23,332	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.2	73.9	74.3	97	209	451	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	26,481	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	187	403	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	22,334	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
3	71.3	75.0	75.4	115	247	532	East Avenue P	Sierra Hwy to 8th Street E	33,863	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	199	428	East Avenue P	8th Street E to 15th Street E	24,509	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.7	74.1	93	201	434	East Avenue P	15th Street E to 20th Street E	24,973	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.7	72.4	72.8	77	166	358	East Avenue P	20th Street E to 25th Street E	18,699	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.7	71.4	71.8	66	141	305	East Avenue P	25th Street E to 30th Street E	14,695	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
4	59.3	63.0	63.4	18	39	84	Avenue Q	Trade Center Dr to 5th Street W	2,216	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	61.6	65.3	65.7	26	56	120	Avenue Q	Division Street to 6th Street E	3,815	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	65.4	69.2	69.5	47	100	216	Avenue Q	Sierra Hwy to 10th Street E	9,447	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.9	68.6	69.0	43	92	199	Avenue Q	10th Street E to 20th Street E	8,323	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.2	67.9	68.3	38	83	179	Avenue Q	20th Street E to 30th Street E	7,106	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	62.6	66.4	66.7	30	65	141	Avenue Q	30th Street E to 40th Street E	4,960	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
5	68.4	72.1	72.5	73	157	339	Elizabeth Lake Rd	25th Street W to 20th Street W	13,937	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.3	72.0	72.4	73	156	337	Elizabeth Lake Rd	20th Street W to 15th Street W	13,828	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.7	73.4	73.8	90	193	415	Elizabeth Lake Rd	15th Street W to 10th Street W	18,930	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
6	70.2	73.9	74.3	97	208	449	Palmdale Blvd	10th Street W to Trade Center Dr	17,408	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.7	74.1	94	201	434	Palmdale Blvd	Trade Center Dr to 5th Street W	16,548	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.2	75.9	76.3	131	282	607	Palmdale Blvd	5th Street W to State Route 14	27,366	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.0	75.8	76.1	128	276	595	Palmdale Blvd	Division Street to 5th St E	25,175	50	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	71.8	75.5	75.9	124	267	575	Palmdale Blvd	5th Street E to 10th Street E	25,257	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.9	75.6	76.0	126	271	585	Palmdale Blvd	10th Street E to 15th Street E	25,869	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.6	74.3	74.7	103	223	480	Palmdale Blvd	15th Street E to 20th Street E	19,223	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.5	75.2	75.6	118	254	548	Palmdale Blvd	20th Street E to 25th Street E	23,470	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.5	74.2	74.6	101	217	467	Palmdale Blvd	40th Street E to 47th Street E	18,458	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.3	73.0	73.4	84	181	391	Palmdale Blvd	50th Street E to 60th Street E	14,147	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.7	74.1	94	203	436	Palmdale Blvd	70th Street E to 80th Street E	16,681	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
7	68.1	71.8	72.2	70	151	326	E Avenue R	Sierra Hwy to 10th Street E	19,490	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.9	71.6	72.0	68	146	315	E Avenue R	10th Street E to 20th Street E	18,495	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.9	71.6	72.0	68	146	314	E Avenue R	20th Street E to 30th Street E	18,408	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	66.9	70.6	71.0	58	125	269	E Avenue R	30th Street E to 40th Street E	14,851	36	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
	67.3	71.0	71.4	62	134	289	E Avenue R	40th Street E to 47th Street E	16,231	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.0	70.7	71.1	59	128	276	E Avenue R	47th Street E to 60th Street E	15,158	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	62.9	66.6	67.0	31	68	146	E Avenue R	60th Street E to 70th Street E	5,811	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
8	65.2	68.9	69.3	45	96	207	Avenue S	Tovey Avenue to Tierra Subida Ave	9,346	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	66.7	70.4	70.8	56	122	262	Avenue S	Tierra Subida Ave to SR 14	14,027	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	66.4	70.1	70.5	54	117	251	Avenue S	SR 14 to 5th Street E	13,190	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.3	73.1	73.4	85	183	394	Avenue S	5th Street E to Sierra Hwy	25,828	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.3	74.0	74.4	98	211	456	Avenue S	Sierra Hwy to 10th Street E	32,170	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.7	74.1	93	201	433	Avenue S	10th Street E to 20th Street E	29,830	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.8	74.1	94	203	438	Avenue S	20th Street E to 25th Street E	30,323	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	198	426	Avenue S	25th Street E to 30th Street E	29,058	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.3	73.0	73.4	84	181	390	Avenue S	30th Street E to 35th Street E	24,137	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.2	72.9	73.3	83	179	385	Avenue S	35th Street E to 40th Street E	23,612	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.2	73.0	73.3	83	180	387	Avenue S	40th Street E to 47th Street E	23,867	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	68.5	72.2	72.6	75	161	346	Avenue S	47th Street E to 55th Street E	21,305	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
9	74.4	78.1	78.4	183	394	849	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	48,960	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	73.5	77.2	77.6	161	347	747	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	40,419	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.0	74.7	75.1	110	237	510	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	22,788	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.1	74.8	75.1	110	237	511	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	22,898	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.6	72.3	72.7	76	163	351	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	13,027	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
10	68.7	72.5	72.8	77	166	359	10th Street W/Tierra															

11	69.1	72.8	73.2	82	176	380	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	16,569	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.8	76.5	76.9	145	312	672	Sierra Hwy	Columbia Way to E Avenue N	25,408	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	73.1	76.8	77.2	151	325	700	Sierra Hwy	E Avenue N to E Avenue O	27,037	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	73.8	77.6	77.9	169	365	785	Sierra Hwy	E Avenue O to E Avenue P	32,133	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.4	99	213	459	Sierra Hwy	E Avenue P to E Avenue Q	14,366	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.6	74.3	74.7	103	221	476	Sierra Hwy	E Avenue Q to Palmdale Blvd	15,176	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.8	72.5	72.9	78	167	360	Sierra Hwy	Palmdale Blvd to E Avenue R	9,993	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.4	71.1	71.5	63	136	292	Sierra Hwy	E Avenue R to E Avenue S	7,289	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.8	71.6	71.9	67	145	313	Sierra Hwy	E Avenue S to Pearlblossom Hwy	8,070	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
12	59.0	62.7	63.1	17	37	81	10th Street E	E Avenue P to E Avenue Q	2,357	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	63.0	66.7	67.1	32	69	149	10th Street E	E Avenue Q to E Palmdale Blvd	5,732	37	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	62.9	66.6	67.0	32	68	146	10th Street E	E Palmdale Blvd to Avenue R	5,756	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	61.2	64.9	65.3	24	52	113	10th Street E	Avenue R to Avenue S1	3,898	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
13	59.2	62.9	63.3	18	39	83	20th Street E	E Avenue P to E Avenue Q	4,738	37	0	97%	2%	1%	75%	10%	15%	2	Soft	50	0.5	20
	61.4	65.1	65.4	25	54	115	20th Street E	E Avenue Q to Palmdale Blvd	7,760	37	0	97%	2%	1%	75%	10%	15%	2	Soft	50	0.5	20
	63.7	67.5	67.8	36	77	167	20th Street E	Palmdale Blvd to E Avenue R	13,063	37	0	97%	2%	1%	75%	10%	15%	4	Soft	50	0.5	44
	63.5	67.2	67.5	34	74	159	20th Street E	E Avenue R to E Avenue S	12,215	37	0	97%	2%	1%	75%	10%	15%	4	Soft	50	0.5	44
14	63.3	67.0	67.4	33	72	155	25th Street E	E Avenue P to E Avenue Q	4,102	47	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	65.6	69.3	69.7	47	102	220	25th Street E	E Avenue Q to Palmdale Blvd	6,948	47	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	68.4	72.1	72.5	73	157	339	25th Street E	Palmdale Blvd to E Avenue R	12,851	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	187	402	25th Street E	E Avenue R to E Avenue S	16,629	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
15	68.8	72.5	72.9	78	169	363	25th Street E	E Avenue S to Pearlblossom Hwy	14,269	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	62.3	66.0	66.3	29	62	133	30th Street E	E Avenue P to E Avenue Q	5,987	33	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	62.3	66.0	66.4	29	62	134	30th Street E	E Avenue Q to Palmdale Blvd	6,083	33	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	63.5	67.2	67.6	34	74	160	30th Street E	Palmdale Blvd to E Avenue R	7,721	33	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
16	64.1	67.8	68.2	38	82	176	30th Street E	E Avenue R to E Avenue S	8,871	33	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	63.2	66.9	67.3	33	71	153	40th Street E	E Avenue P to E Avenue Q	5,610	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.3	68.0	68.3	39	84	180	40th Street E	E Avenue Q to E Palmdale Blvd	7,185	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	65.7	69.4	69.8	48	104	225	40th Street E	E Palmdale Blvd to E Avenue R	9,892	39	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
	65.3	69.0	69.4	46	98	211	40th Street E	E Avenue R to E Avenue S	9,037	39	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
17	65.9	69.6	70.0	50	108	232	40th Street E	E Avenue S to Sierra Hwy	10,505	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	69.5	73.2	73.6	87	188	405	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	18,016	46	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	68.1	71.8	72.2	70	150	324	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	12,874	46	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	71.2	74.9	75.3	113	243	523	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	25,702	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.4	75.1	75.5	116	251	540	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	26,908	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.1	73.8	74.2	95	205	441	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	19,854	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.1	74.8	75.2	111	239	515	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	24,514	46	0	92%	3%	5%	75%	10%	15%	5	Soft	50	0.5	56
	71.0	74.7	75.1	109	234	505	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearlblossom Hwy	24,367	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.3	74.1	74.4	99	213	459	47th Street E/50th Street E/Ft Tejon Rd	Pearlblossom Hwy to E Avenue T-8	21,099	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
18	64.4	68.1	68.5	40	85	184	Technology Dr	10th Street W to Trade Center Dr	7,205	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.6	68.3	68.7	41	88	190	Technology Dr	5th Street W to Division St	7,574	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.7	68.5	68.8	42	90	194	Technology Dr	Division St to Sierra Hwy	7,805	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44

ID	Output						Inputs											Auto Inputs				
	dBA at 50 feet			Distance to CNEL Contour			Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Receiver	Ground Absorption	Lane Distance
	L _{eq,24hr}	L _{dn}	CNEL	70 dBA	65 dBA	60 dBA																
1	72.6	76.3	76.7	140	301	649	Columbia Way/Avenue M	10th Street W to Sierra Hwy	32,760	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	73.0	76.7	77.1	148	319	688	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	35,733	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.1	74.8	75.2	112	240	518	Columbia Way/Avenue M	10th Street E to 20th Street E	23,321	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	198	427	Columbia Way/Avenue M	20th Street E to 30th Street E	17,482	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.3	72.0	72.4	72	156	336	Columbia Way/Avenue M	30th Street E to 40th Street E	12,192	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.0	72.7	73.1	81	174	374	Columbia Way/Avenue M	40th Street E to 50th Street	14,334	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
2	68.3	72.0	72.3	72	154	333	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	16,758	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.2	72.9	73.3	83	179	386	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	20,985	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	188	404	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	22,457	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.5	100	215	463	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	27,509	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.5	99	214	460	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	27,276	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.4	76.1	76.5	136	293	632	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	41,536	40	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	71.7	75.4	75.8	122	263	567	Rancho Vista Ave/Avenue P	10th Street W to SR 14	35,290	40	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.7	73.4	73.8	89	192	415	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	23,332	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.2	73.9	74.3	97	209	451	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	26,481	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	187	403	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	22,334	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
3	71.7	75.4	75.8	122	262	564	East Avenue P	Sierra Hwy to 8th Street E	37,052	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.5	100	216	465	East Avenue P	8th Street E to 15th Street E	27,698	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.9	74.6	75.0	107	231	497	East Avenue P	15th Street E to 20th Street E	30,657	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.8	73.5	73.9	91	195	420	East Avenue P	20th Street E to 25th Street E	23,798	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.8	72.5	72.9	78	167	360	East Avenue P	25th Street E to 30th Street E	18,896	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
4	62.6	66.3	66.7	30	65	140	Avenue Q	Trade Center Dr to 5th Street W	4,805	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.7	68.5	68.8	42	90	194	Avenue Q	Division Street to 6th Street E	8,053	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	65.8	69.5	69.9	49	105	227	Avenue Q	Sierra Hwy to 10th Street E	10,165	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.9	68.6	69.0	43	92	199	Avenue Q	10th Street E to 20th Street E	8,349	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.3	68.0	68.4	39	84	182	Avenue Q	20th Street E to 30th Street E	7,293	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.6	68.3	68.7	41	88	190	Avenue Q	30th Street E to 40th Street E	7,814	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
5	70.1	73.8	74.2	96	206	443	Elizabeth Lake Rd	25th Street W to 20th Street W	20,874	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.0	72.7	73.1	80	173	372	Elizabeth Lake Rd	20th Street W to 15th Street W	16,038	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.8	73.6	73.9	92	197	425	Elizabeth Lake Rd	15th Street W to 10th Street W	19,583	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
6	71.3	75.0	75.3	114	245	528	Palmdale Blvd	10th Street W to Trade Center Dr	22,179	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.3	74.0	74.4	98	211	455	Palmdale Blvd	Trade Center Dr to 5th Street W	17,785	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.2	75.9	76.3	131	282	607	Palmdale Blvd	5th Street W to State Route 14	27,366	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.1	75.8	76.2	129	279	601	Palmdale Blvd	Division Street to 5th St E	25,510	50	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	71.8	75.5	75.9	124	267	575	Palmdale Blvd	5th Street E to 10th Street E	25,257	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.9	75.6	76.0	126	271	585	Palmdale Blvd	10th Street E to 15th Street E	25,869	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.6	74.3	74.7	103	223	480	Palmdale Blvd	15th Street E to 20th Street E	19,233	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.7	75.4	75.8	122	263	566	Palmdale Blvd	20th Street E to 25th Street E	24,649	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.3	76.0	76.4	133	286	616	Palmdale Blvd	40th Street E to 47th Street E	28,011	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.5	75.3	75.6	119	256	551	Palmdale Blvd	50th Street E to 60th Street E	23,700	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	199	428	Palmdale Blvd	70th Street E to 80th Street E	16,681	50	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
7	68.1	71.8	72.2	70	151	326	E Avenue R	Sierra Hwy to 10th Street E	19,490	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.9	71.6	72.0	68	146	315	E Avenue R	10th Street E to 20th Street E	18,495	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.9	71.6	72.0	68	146	314	E Avenue R	20th Street E to 30th Street E	18,408	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.9	71.6	72.0	68	146	315	E Avenue R	30th Street E to 40th Street E	18,843	36	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
	68.8	72.5	72.9	78	168	363	E Avenue R	40th Street E to 47th Street E	22,831	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.6	71.3	71.7	65	140	301	E Avenue R	47th Street E to 60th Street E	17,279	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	63.4	67.1	67.5	34	73	158	E Avenue R	60th Street E to 70th Street E	6,564	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
8	65.6	69.3	69.7	48	103	221	Avenue S	Tovey Avenue to Tierra Subida Ave	10,895	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.6	71.3	71.7	65	140	302	Avenue S	Tierra Subida Ave to SR 14	17,336	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	66.4	70.1	70.5	54	117	251	Avenue S	SR 14 to 5th Street E	13,190	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.3	73.1	73.4	85	183	394	Avenue S	5th Street E to Sierra Hwy	25,828	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.3	74.0	74.4	98	211	456	Avenue S	Sierra Hwy to 10th Street E	32,170	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.7	74.1	93	201	433	Avenue S	10th Street E to 20th Street E	29,830	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.8	74.1	94	203	438	Avenue S	20th Street E to 25th Street E	30,323	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	198	426	Avenue S	25th Street E to 30th Street E	29,058	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.3	73.0	73.4	84	181	390	Avenue S	30th Street E to 35th Street E	24,137	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.2	72.9	73.3	83	179	385	Avenue S	35th Street E to 40th Street E	23,612	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.2	73.0	73.3	83	180	387	Avenue S	40th Street E to 47th Street E	23,867	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	68.5	72.2	72.6	75	161	346	Avenue S	47th Street E to 55th Street E	21,305	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
9	74.7	78.4	78.8	192	413	889	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	52,520	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	74.0	77.7	78.1	173	373	803	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	45,045	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.5	76.2	76.6	138	296	639	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	31,951	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.5	76.2	76.6	138	297	640	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	32,061	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.9	74.6	75.0	108	232	501	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	22,190	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
10	68.7	72.5	72.8	77	166																	

11	69.6	73.3	73.7	88	190	409	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	18,512	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	74.6	78.3	78.7	189	407	877	Sierra Hwy	Columbia Way to E Avenue N	37,932	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	74.4	78.1	78.5	183	395	850	Sierra Hwy	E Avenue N to E Avenue O	36,183	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	76.1	79.8	80.2	238	513	1105	Sierra Hwy	E Avenue O to E Avenue P	53,660	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.4	99	213	459	Sierra Hwy	E Avenue P to E Avenue Q	14,366	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.6	74.3	74.7	103	222	478	Sierra Hwy	E Avenue Q to Palmdale Blvd	15,253	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.8	72.5	72.9	78	167	360	Sierra Hwy	Palmdale Blvd to E Avenue R	9,993	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.4	71.1	71.5	63	136	292	Sierra Hwy	E Avenue R to E Avenue S	7,289	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.8	71.6	71.9	67	145	313	Sierra Hwy	E Avenue S to Pearlblossom Hwy	8,070	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	59.0	62.7	63.1	17	37	81	10th Street E	E Avenue P to E Avenue Q	2,357	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
12	63.0	66.7	67.1	32	69	149	10th Street E	E Avenue Q to E Palmdale Blvd	5,732	37	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	62.9	66.6	67.0	32	68	146	10th Street E	E Palmdale Blvd to Avenue R	5,756	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	61.2	64.9	65.3	24	52	113	10th Street E	Avenue R to Avenue S1	3,898	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	60.5	64.2	64.6	22	47	101	20th Street E	E Avenue P to E Avenue Q	6,362	37	0	97%	2%	1%	75%	10%	15%	2	Soft	50	0.5	20
	62.3	66.1	66.4	29	62	134	20th Street E	E Avenue Q to Palmdale Blvd	9,746	37	0	97%	2%	1%	75%	10%	15%	2	Soft	50	0.5	20
	63.7	67.5	67.8	36	77	167	20th Street E	Palmdale Blvd to E Avenue R	13,063	37	0	97%	2%	1%	75%	10%	15%	4	Soft	50	0.5	44
	63.7	67.4	67.8	36	77	166	20th Street E	E Avenue R to E Avenue S	12,938	37	0	97%	2%	1%	75%	10%	15%	4	Soft	50	0.5	44
	66.5	70.2	70.6	55	118	255	25th Street E	E Avenue P to E Avenue Q	8,624	47	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	66.7	70.4	70.8	56	121	261	25th Street E	E Avenue Q to Palmdale Blvd	8,947	47	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	68.4	72.1	72.5	74	159	342	25th Street E	Palmdale Blvd to E Avenue R	13,007	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
13	69.5	73.2	73.6	87	187	402	25th Street E	E Avenue R to E Avenue S	16,629	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.8	72.5	72.9	78	169	363	25th Street E	E Avenue S to Pearlblossom Hwy	14,269	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	63.5	67.2	67.6	35	74	160	30th Street E	E Avenue P to E Avenue Q	7,961	33	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	63.4	67.1	67.5	34	73	158	30th Street E	E Avenue Q to Palmdale Blvd	7,821	33	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	63.8	67.5	67.9	36	78	169	30th Street E	Palmdale Blvd to E Avenue R	8,354	33	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.1	67.8	68.2	38	82	176	30th Street E	E Avenue R to E Avenue S	8,871	33	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	66.4	70.2	70.5	54	117	252	40th Street E	E Avenue P to E Avenue Q	11,891	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.3	68.0	68.3	39	84	180	40th Street E	E Avenue Q to E Palmdale Blvd	7,185	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	67.2	70.9	71.3	61	132	284	40th Street E	E Palmdale Blvd to E Avenue R	14,092	39	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
	66.7	70.4	70.8	56	121	262	40th Street E	E Avenue R to E Avenue S	12,432	39	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
14	65.9	69.7	70.0	50	108	233	40th Street E	E Avenue S to Sierra Hwy	10,612	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	70.6	74.3	74.7	103	221	476	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	22,987	46	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	69.1	72.8	73.2	81	175	377	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	16,180	46	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	71.4	75.1	75.4	115	249	535	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	26,588	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.4	75.1	75.5	116	251	540	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	26,908	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.1	73.8	74.2	95	205	441	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	19,854	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.8	75.5	75.9	124	266	574	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	28,816	46	0	92%	3%	5%	75%	10%	15%	5	Soft	50	0.5	56
	71.0	74.7	75.1	109	234	505	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearlblossom Hwy	24,367	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.0	75.7	76.1	127	274	591	47th Street E/50th Street E/Ft Tejon Rd	Pearlblossom Hwy to E Avenue T-8	30,811	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.4	68.1	68.5	40	86	185	Technology Dr	10th Street W to Trade Center Dr	7,277	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
15	64.6	68.3	68.7	41	88	190	Technology Dr	5th Street W to Division St	7,574	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.7	68.5	68.8	42	90	194	Technology Dr	Division St to Sierra Hwy	7,805	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44

Roadway	Segment	Existing ADT	2045 Preferred Plan ADT	Existing CNEL at 50 feet	2045 CNEL at 50 feet	Traffic Noise Increase
Columbia Way/Avenue M	10th Street W to Sierra Hwy	23,348	32,760	75.2	76.7	1.5
Columbia Way/Avenue M	Sierra Hwy to 10th Street E	28,434	35,733	76.1	77.1	1.0
Columbia Way/Avenue M	10th Street E to 20th Street E	17,513	23,321	74.0	75.2	1.2
Columbia Way/Avenue M	20th Street E to 30th Street E	13,832	17,482	73.0	74.0	1.0
Columbia Way/Avenue M	30th Street E to 40th Street E	7,475	12,192	70.3	72.4	2.1
Columbia Way/Avenue M	40th Street E to 50th Street	10,559	14,334	71.8	73.1	1.3
Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	16,758	16,758	72.6	72.3	-0.2
Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	20,985	20,985	73.3	73.3	0.0
Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	22,457	22,457	73.6	73.6	0.0
Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	27,509	27,509	74.5	74.5	0.0
Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	26,453	27,276	74.3	74.5	0.1
Rancho Vista Ave/Avenue P	15th Street to 10th Street W	41,536	41,536	76.5	76.5	0.0
Rancho Vista Ave/Avenue P	10th Street W to SR 14	35,290	35,290	75.8	75.8	0.0
Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	23,332	23,332	73.8	73.8	0.0
Rancho Vista Ave/Avenue P	Country Club Dr to Division St	26,481	26,481	74.3	74.3	0.0
Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	22,334	22,334	73.6	73.6	0.0
East Avenue P	Sierra Hwy to 8th Street E	33,863	37,052	75.4	75.8	0.4
East Avenue P	8th Street E to 15th Street E	24,509	27,698	74.0	74.5	0.5
East Avenue P	15th Street E to 20th Street E	24,973	30,657	74.1	75.0	0.9
East Avenue P	20th Street E to 25th Street E	18,699	23,798	72.8	73.9	1.0
East Avenue P	25th Street E to 30th Street E	14,695	18,896	71.8	72.9	1.1
Avenue Q	Trade Center Dr to 5th Street W	2,216	4,805	63.4	66.7	3.4
Avenue Q	Division Street to 6th Street E	3,815	8,053	65.7	68.8	3.1
Avenue Q	Sierra Hwy to 10th Street E	9,447	10,165	69.5	69.9	0.3
Avenue Q	10th Street E to 20th Street E	8,323	8,349	69.0	69.0	0.0
Avenue Q	20th Street E to 30th Street E	7,106	7,293	68.3	68.4	0.1
Avenue Q	30th Street E to 40th Street E	4,960	7,814	66.7	68.7	2.0
Elizabeth Lake Rd	25th Street W to 20th Street W	13,937	20,874	72.5	74.2	1.8
Elizabeth Lake Rd	20th Street W to 15th Street W	13,828	16,038	72.4	73.1	0.6
Elizabeth Lake Rd	15th Street W to 10th Street W	18,930	19,583	73.8	73.9	0.1
Palmdale Blvd	10th Street W to Trade Center Dr	17,408	22,179	74.3	75.3	1.1
Palmdale Blvd	Trade Center Dr to 5th Street W	16,548	17,785	74.1	74.4	0.3
Palmdale Blvd	5th Street W to State Route 14	27,366	27,366	76.3	76.3	0.0
Palmdale Blvd	Division Street to 5th St E	25,175	25,510	76.1	76.2	0.1
Palmdale Blvd	5th Street E to 10th Street E	25,257	25,257	75.9	75.9	0.0
Palmdale Blvd	10th Street E to 15th Street E	25,869	25,869	76.0	76.0	0.0
Palmdale Blvd	15th Street E to 20th Street E	19,223	19,233	74.7	74.7	0.0
Palmdale Blvd	20th Street E to 25th Street E	23,470	24,649	75.6	75.8	0.2
Palmdale Blvd	40th Street E to 47th Street E	18,458	28,011	74.6	76.4	1.8
Palmdale Blvd	50th Street E to 60th Street E	14,147	23,700	73.4	75.6	2.2
Palmdale Blvd	70th Street E to 80th Street E	16,681	16,681	74.1	74.0	-0.1
E Avenue R	Sierra Hwy to 10th Street E	19,490	19,490	72.2	72.2	0.0
E Avenue R	10th Street E to 20th Street E	18,495	18,495	72.0	72.0	0.0
E Avenue R	20th Street E to 30th Street E	18,408	18,408	72.0	72.0	0.0
E Avenue R	30th Street E to 40th Street E	14,851	18,843	71.0	72.0	1.0

E Avenue R	40th Street E to 47th Street E	16,231	22,831	71.4	72.9	1.5
E Avenue R	47th Street E to 60th Street E	15,158	17,279	71.1	71.7	0.6
E Avenue R	60th Street E to 70th Street E	5,811	6,564	67.0	67.5	0.5
Avenue S	Tovey Avenue to Tierra Subida Ave	9,346	10,895	69.3	69.7	0.4
Avenue S	Tierra Subida Ave to SR 14	14,027	17,336	70.8	71.7	0.9
Avenue S	SR 14 to 5th Street E	13,190	13,190	70.5	70.5	0.0
Avenue S	5th Street E to Sierra Hwy	25,828	25,828	73.4	73.4	0.0
Avenue S	Sierra Hwy to 10th Street E	32,170	32,170	74.4	74.4	0.0
Avenue S	10th Street E to 20th Street E	29,830	29,830	74.1	74.1	0.0
Avenue S	20th Street E to 25th Street E	30,323	30,323	74.1	74.1	0.0
Avenue S	25th Street E to 30th Street E	29,058	29,058	74.0	74.0	0.0
Avenue S	30th Street E to 35th Street E	24,137	24,137	73.4	73.4	0.0
Avenue S	35th Street E to 40th Street E	23,612	23,612	73.3	73.3	0.0
Avenue S	40th Street E to 47th Street E	23,867	23,867	73.3	73.3	0.0
Avenue S	47th Street E to 55th Street E	21,305	21,305	72.6	72.6	0.0
Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	48,960	52,520	78.4	78.8	0.3
Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	40,419	45,045	77.6	78.1	0.5
Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	22,788	31,951	75.1	76.6	1.5
Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	22,898	32,061	75.1	76.6	1.5
Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	13,027	22,190	72.7	75.0	2.3
10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	15,186	15,186	72.8	72.8	0.0
10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	19,402	22,897	73.9	74.6	0.7
10th Street W/Tierra Subida Ave	W Avenue O to SR 14	17,627	17,627	73.5	73.5	0.0
10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	35,324	35,324	76.7	76.7	0.0
10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology D	31,954	37,661	76.3	77.0	0.7
10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	39,039	47,477	77.0	77.9	0.8
10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	16,569	18,512	73.2	73.7	0.5
Sierra Hwy	Columbia Way to E Avenue N	25,408	37,932	76.9	78.7	1.7
Sierra Hwy	E Avenue N to E Avenue O	27,037	36,183	77.2	78.5	1.3
Sierra Hwy	E Avenue O to E Avenue P	32,133	53,660	77.9	80.2	2.2
Sierra Hwy	E Avenue P to E Avenue Q	14,366	14,366	74.4	74.4	0.0
Sierra Hwy	E Avenue Q to Palmdale Blvd	15,176	15,253	74.7	74.7	0.0
Sierra Hwy	Palmdale Blvd to E Avenue R	9,993	9,993	72.9	72.9	0.0
Sierra Hwy	E Avenue R to E Avenue S	7,289	7,289	71.5	71.5	0.0
Sierra Hwy	E Avenue S to Pearblossom Hwy	8,070	8,070	71.9	71.9	0.0
10th Street E	E Avenue P to E Avenue Q	2,357	2,357	63.1	63.1	0.0
10th Street E	E Avenue Q to E Palmdale Blvd	5,732	5,732	67.1	67.1	0.0
10th Street E	E. Palmdale Blvd to Avenue R	5,756	5,756	67.0	67.0	0.0
10th Street E	Avenue R to Avenue S1	3,898	3,898	65.3	65.3	0.0
20th Street E	E Avenue P to E Avenue Q	4,738	6,362	63.3	64.6	1.3
20th Street E	E Avenue Q to Palmdale Blvd	7,760	9,746	65.4	66.4	1.0
20th Street E	Palmdale Blvd to E Avenue R	13,063	13,063	67.8	67.8	0.0
20th Street E	E Avenue R to E Avenue S	12,215	12,938	67.5	67.8	0.2
25th Street E	E Avenue P to E Avenue Q	4,102	8,624	67.4	70.6	3.2
25th Street E	E Avenue Q to Palmdale Blvd	6,948	8,947	69.7	70.8	1.1
25th Street E	Palmdale Blvd to E Avenue R	12,851	13,007	72.5	72.5	0.1

25th Street E	E Avenue R to E Avenue S	16,629	16,629	73.6	73.6	0.0
25th Street E	E Avenue S to Pearblossom Hwy	14,269	14,269	72.9	72.9	0.0
30th Street E	E Avenue P to E Avenue Q	5,987	7,961	66.3	67.6	1.2
30th Street E	E Avenue Q to Palmdale Blvd	6,083	7,821	66.4	67.5	1.1
30th Street E	Palmdale Blvd to E Avenue R	7,721	8,354	67.6	67.9	0.3
30th Street E	E Avenue R to E Avenue S	8,871	8,871	68.2	68.2	0.0
40th Street E	E Avenue P to E Avenue Q	5,610	11,891	67.3	70.5	3.3
40th Street E	E Avenue Q to E Palmdale Blvd	7,185	7,185	68.3	68.3	0.0
40th Street E	E Palmdale Blvd to E Avenue R	9,892	14,092	69.8	71.3	1.5
40th Street E	E Avenue R to E Avenue S	9,037	12,432	69.4	70.8	1.4
40th Street E	E Avenue S to Sierra Hwy	10,505	10,612	70.0	70.0	0.0
47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	18,016	22,987	73.6	74.7	1.1
47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	12,874	16,180	72.2	73.2	1.0
47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	25,702	26,588	75.3	75.4	0.1
47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	26,908	26,908	75.5	75.5	0.0
47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	19,854	19,854	74.2	74.2	0.0
47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	24,514	28,816	75.2	75.9	0.7
47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	24,367	24,367	75.1	75.1	0.0
47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	21,099	30,811	74.4	76.1	1.6
Technology Dr	10th Street W to Trade Center Dr	7,205	7,277	68.5	68.5	0.0
Technology Dr	5th Street W to Division St	7,574	7,574	68.7	68.7	0.0
Technology Dr	Division St to Sierra Hwy	7,805	7,805	68.8	68.8	0.0

Appendix F

Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program

CEQA requires that a reporting or monitoring program be adopted for the conditions of project approval that are necessary to mitigate or avoid significant effects on the environment (Public Resources Code 21081.6). This mitigation monitoring and reporting program is intended to track and ensure compliance with adopted mitigation measures during the project implementation phase. For each mitigation measure recommended in the Final Environmental Impact Report (Final EIR), specifications are made herein that identify the action required, the monitoring that must occur, and the agency or department responsible for oversight.

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Air Quality							
MM-AQ-1- Architectural Coating							
<p>If a development project facilitated by the Plan would generate construction and operational emissions and such emissions may result in adverse impacts to local air quality, then these recommendations shall be implemented and incorporated in the project.</p> <p>The City shall require that the following measures be implemented for all projects where unmitigated ROG impacts exceed regulatory thresholds. Implementation of these measures shall ensure that ROG emissions are reduced to below 137 lbs/day during construction activities.</p> <ul style="list-style-type: none"> ▪ Project contractors shall use architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the City shall perform periodic site inspections during construction to verify compliance; and/or, ▪ All architectural coating phases shall be extended such that ROG emissions are reduced to below 137 lbs/day. 	<p>Confirm that the actions required under this mitigation measure are implemented for individual projects under the Plan where unmitigated ROG impacts exceed regulatory thresholds.</p>	<p>During construction</p>	<p>Periodically</p>	<p>City of Palmdale Planning Department</p>			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
MM-AQ-2: Operational Emissions Reductions							
<p>If a development project facilitated by the Plan would generate construction and operational emissions and such emissions may result in adverse impacts to local air quality, then these recommendations shall be implemented and incorporated in the project. The City shall require that some or all of the following measures be implemented for individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. Applicable measures shall be incorporated such that emissions are fully reduced to below regulatory thresholds or the greatest extent feasible. The reduction measures include, but are not limited to, the following:</p> <ul style="list-style-type: none"> ▪ Architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, the coating with the lowest ROG rating available shall be used ▪ Require new development to exceed the applicable Title 24 energy-efficiency requirements ▪ Projects shall incorporate outdoor electrical outlets such that 10 percent of outdoor landscaping equipment can be electrically powered ▪ All dock doors shall be equipped with electric plugs for electric TRUs ▪ Installation of electric vehicle charging stations at three percent beyond those required by State and local codes ▪ Provide infrastructure to allow for future electric vehicle charging stations for a minimum of 10 percent of the parking spaces beyond those already required to 	<ol style="list-style-type: none"> 1. Confirm that some or all of the actions required under this mitigation measures are included in the design of, and made conditions approval of, individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. 2. Confirm that the actions required as conditions of approval for individual projects under the Plan are carried out during construction and incorporated into the design and operation of those projects where unmitigated criteria pollutant impacts exceed regulatory thresholds. 	<ol style="list-style-type: none"> 1. Prior to project approval. 2. During construction and at least once before operation (for post-construction actions) 	<ol style="list-style-type: none"> 1. Once 2. Periodically 	City of Palmdale Planning Department			

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Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
	<ul style="list-style-type: none"> accommodate electric vehicle charging stations ▪ Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment ▪ Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet ▪ Provision of dedicated parking for carpools, vanpool, and clean air vehicles ▪ Provision of vanpool and/or shuttle service for employees ▪ Implementation of reduced parking minimum requirements ▪ Implementation of maximum parking limits ▪ Provision of bicycle parking facilities beyond those required by State and local codes ▪ Provision of a bicycle-share program ▪ Expansion of bicycle routes/lanes along the project site frontage ▪ Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if the project site is located along an existing transit route ▪ Expansion of sidewalk infrastructure along the project site frontage ▪ Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes ▪ Provision of employee lockers and showers ▪ Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services) ▪ Provision of alternative work schedule options, such as telework or reduced 						

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
<p>working days per week (e.g., 9/80 or 10/40 schedules), for employees</p> <ul style="list-style-type: none"> Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options As applicable all industrial uses shall be required to enroll in U.S. EPA’s SmartWay program and shall use carriers that are SmartWay carriers 							
Biological Resources							
MM-BIO-1 Pre-Construction Nesting Bird Surveys							
<p>If a development project carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat, then these recommendations shall be implemented and incorporated in the project.</p> <p>To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a</p>	<p>Confirm that the actions required under this mitigation measures are implemented for individual projects under the Plan where special-status species have the potential to be adversely affected.</p>	<p>Prior to construction activities</p>	<p>Periodically</p>	<p>City of Palmdale Planning Department</p>			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
<p>biologist familiar with the identification of avian species known to occur in southern California desert communities.</p> <p>If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist</p>							
Cultural Resources							
MM-CUL-1 Historical Resources							
<p>A historical resources evaluation shall be prepared for all discretionary projects carried out under the Plan involving a property which includes buildings, structures, objects, sites, landscape/site plans, or other features that are 45 years of age or older. The evaluation shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior’s Professional Qualifications Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed development site. All structures 45 years of</p>	<ol style="list-style-type: none"> 1. Confirm that a historic resources evaluation has been prepared by a qualified architectural historian or historian who meets the Secretary of the Interior’s Professional Qualifications Standards (PQS) in architectural history or history, consistent with the requirements of this mitigation measure. 2. If historical resources are identified within the project area of a proposed development, confirm that efforts are made, to the extent feasible, to ensure that impacts are mitigated, consistent with the requirements of this mitigation measure. 	<ol style="list-style-type: none"> 1. Prior to construction and grading activities 2. Prior to construction and grading activities 	<ol style="list-style-type: none"> 1. Once 2. Once 	<p>City of Palmdale Planning Department</p>			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
<p>age or older shall be evaluated within their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the City for review and concurrence. If the property is already listed in the NRHP, CRHR, or as a Landmark in Palmdale, the historical resources evaluation described above shall not be required.</p> <p>If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, the historical resources evaluation report shall also identify and specify the treatment of character-defining features and construction activities.</p> <p>Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical</p>	3.	If historical resources are identified within the project area of a proposed development, confirm that efforts have been made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards) and the requirements of this mitigation measure.	3. Prior to construction and grading activities	3. Once			
	4.	If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, confirm that appropriate site-specific mitigation measures are established and undertaken, consistent with the requirements of this mitigation measure.	4. Prior to construction and grading activities	4. Once			

City of Palmdale
 2045 General Plan Update

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
<p>resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of any permits.</p> <p>If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The report shall comply with the Secretary of the Interior’s Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and be submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.</p>							
MM-CUL-2 Phase 1 Archaeological Resources Study							
<p>For any project carried out under the General Plan Update, the City and/or project applicant shall investigate the potential to disturb archaeological resources. If the project will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial fill) a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior’s (SOI’s) Professional Qualification</p>	<p>1. If any project carried out under the General Plan Update will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial fill) confirm that a Phase I cultural resources study consistent with the requirements of this mitigation measure has been performed by</p>	<p>1. Prior to issuance of construction and grading permits</p>	<p>1. Once</p>	<p>City of Palmdale Planning Department</p>			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Standards (PQS) for archaeology (National Park Service 1983). If a project would solely involve the refurbishment of an existing building and no ground disturbance would occur, this measure would not be required. The Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether archaeological resources may be present. Archival research shall include a records search of the South Central Coastal Information Center no more than two years old and a Sacred Lands File search with the NAHC. The Phase I technical report documenting the study shall include recommendations that must be implemented prior to and/or during construction to avoid or reduce impacts on archaeological resources. The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase I technical report shall be made Conditions of Approval and shall be implemented throughout all ground disturbance activities.	a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983), and review and approve this study.						
	2. Make all recommendations of the Phase I technical report Conditions of Approval of the project.	2. Prior to issuance of construction and grading permits	2. Once				
	3. Confirm that all Conditions of Approval are carried out throughout all ground disturbance activities.	3. During ground disturbance activities	3. Periodically				
MM-CUL-3 Extended Phase 1 Testing							
For any projects proposed within 100 feet of a known archaeological site and/or in areas identified as sensitive by a Phase I study [Mitigation Measure CUL-2], the project applicant shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. XPI testing should comprise a series of shovel test pits and/or hand augured units and/or mechanical trenching to establish the boundaries of archaeological site(s) on the	1. Confirm that an XPI study has been done by a qualified archaeologist retained by the project applicant if required under this mitigation measure, and review and approve the XPI.	1. Prior to issuance of construction and grading permits	1. Once	City of Palmdale Planning Department			
	2. Confirm that all recommendations of the XPI are carried out throughout all ground disturbance activities.	2. During ground disturbance activities	2. Periodically				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
<p>project site. If the boundaries of the archaeological site are already well understood from previous archaeological work, an XPI will not be required. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).</p> <p>All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits.</p> <p>Recommendations contained therein shall be implemented for all ground disturbance activities.</p>							
MM-CUL-4 Archaeological Site Avoidance							
<p>Any identified archaeological sites (determined after implementing mitigation measures CUL-2 and/or CUL-3) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging shall be placed between the work location and any resources within 60 feet of a work location to minimize the potential for inadvertent impacts.</p>	<p>Confirm that the avoidance measures described in this mitigation measure are being carried out during project-related construction activities.</p>	<p>During construction and grading activities</p>	<p>Periodically</p>	<p>City of Palmdale Planning Department</p>			
MM-CUL-5 Phase II Site Evaluation							
<p>If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, the qualified archaeologist shall conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for the CRHR or qualify as unique archaeological resources. If the archaeological resource(s) of concern are</p>	<p>1. If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, confirm that a Phase II cultural resources study consistent with the requirements of this mitigation measure has been performed by a qualified professional meeting the Secretary of the Interior's (SOI's)</p>	<p>1. Prior to issuance of construction and grading permits</p>	<p>1. Once</p>	<p>City of Palmdale Planning Department</p>			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
<p>Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).</p> <p>A Phase II evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation will characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains.</p> <p>If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-2) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase II report shall be implemented for all ground disturbance activities</p>	<p>Professional Qualification Standards (PQS) for archaeology (National Park Service 1983), and review and approve this study.</p> <p>2. Make all recommendations of the Phase II technical report Conditions of Approval of the project.</p> <p>3. Confirm that all Conditions of Approval are carried out throughout all ground disturbance activities.</p>	<p>2. Prior to issuance of construction and grading permits</p> <p>3. During ground disturbance activities</p>	<p>2. Once</p> <p>3. Periodically</p>				

City of Palmdale
2045 General Plan Update

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
MM-CUL-6 Phase III Data Recovery							
<p>Should the results of the Phase II site evaluation (Mitigation Measure CUL-5) yield resources that meet CRHR significance standards and if the resource cannot be avoided by project construction in accordance with CUL-4, the project applicant shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and approved by the City of Palmdale prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI PQS for archaeology according to a research design reviewed and approved by the City of Palmdale prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). If applicable, a Native American monitor shall be present.</p> <p>As applicable, the final Phase III Data Recovery reports shall be submitted to the City of Palmdale prior to issuance of any grading or construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities.</p>	1.	Confirm that any reports found to be necessary under the requirements of this mitigation measure have been submitted to, and reviewed and approved by, the City of Palmdale prior to issuance of any grading or construction permit.	1.	Prior to issuance of construction and grading permits	1.	Once	City of Palmdale Planning Department
	2.	Confirm that all feasible recommendations of the reports required under this mitigation measure have been incorporated into the final design of the project and approved by the City of Palmdale	2.	Prior to issuance of construction and grading permits	2.	Once	
	3.	Confirm that all feasible recommendations of the reports required under this mitigation measure are carried out as described in this mitigation measure.	3.	During construction	3.	Periodically	

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
MM-CUL-7 Cultural Resources Monitoring							
If recommended by Phase I, XPI, Phase II, or Phase III studies [mitigation measures CUL-2, CUL-3, CUL-5, and/or CUL-6], the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, mitigation measures CUL-4 through CUL-6 shall be implemented, as appropriate.	Confirm that the appropriate mitigation measures have been implemented during ground-disturbing activities.	During construction and grading activities	Periodically throughout construction activities	City of Palmdale Planning Department			
MM-CUL-8 Unanticipated Discovery of Archaeological Resource							
If archaeological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project archaeologist meeting the SOI's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.	1. Confirm that any reports required to document and/or evaluate unanticipated discoveries have been submitted to the City of Palmdale for review and approval.	1. Prior to issuance of construction and grading permits	1. Once	City of Palmdale Planning Department			
	2. Confirm that recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.	2. During construction and grading activities	2. Periodically				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Geology and Soils							
MM-GEO-1 Unanticipated Discovery of Paleontological Resources							
<p>If paleontological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project paleontologist shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and paleontological testing. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.</p>	<ol style="list-style-type: none"> 1. Confirm that any reports required to document and/or evaluate unanticipated discoveries have been submitted to the City of Palmdale for review and approval. 2. Confirm that recommendations contained therein are implemented throughout the remainder of ground disturbance activities. 	<ol style="list-style-type: none"> 1. Prior to issuance of construction and grading permits 2. During construction and grading activities 	<ol style="list-style-type: none"> 1. Once 2. Periodically 	City of Palmdale Planning Department			
Noise							
MM-NOI-1 Construction Vibration Control Measures							
<p>The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval, as applicable, for construction projects carried out under the Plan within 50 feet of fragile buildings as defined in this mitigation measure.</p> <ol style="list-style-type: none"> 1. Avoid the use of vibratory rollers within 50 feet of fragile buildings, which are buildings that are susceptible to damage from vibration as determined by the Palmdale Planning Department. 2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office 	<p>Confirm that the appropriate mitigation measures have been implemented.</p>	<p>Throughout construction and grading activities</p>	<p>Periodically</p>	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
<p>uses that the Federal Transit Administration identifies as sensitive to daytime vibration (FTA 2006).</p> <p>3. Notify neighbors of scheduled construction activities that would generate vibration.</p>							

Tribal Cultural Resources

MM-TCR-1 Native American Monitoring

<p>Prior to the issuance of a grading permit for a project under the Plan, the City of Palmdale (City) shall ensure that the project applicant seeks the services of a tribal monitor(s) approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities. This provision shall be included on the proposed project contractor’s plans and specifications. Ground-disturbing activities are defined by the relevant tribes as activities that may include but are not limited to pavement removal, pot-holing or using an auger, grubbing, tree removals, borings, grading, excavation, drilling, and/or trenching within the project area. The project site shall be made accessible to the monitor(s), provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance.</p> <p>If evidence of tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource in consultation with a qualified archaeologist. The recovery process shall not unreasonably delay</p>	<p>Confirm that a tribal monitor has been approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities, consistent with the requirements of this mitigation measure</p>	<p>Prior to issuance of a grading permit for a project under the Plan</p>	<p>Once</p>	<p>City of Palmdale Planning Department</p>			
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Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
<p>the construction process and must be carried out consistent with CEQA and local regulations. Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether or not a monitor is present on site. The monitor shall complete daily monitoring logs that will provide descriptions of the day’s activities and general observations and whether the Native American monitor believes they observed a TCR and what action they took. The on-site monitoring shall end when the project site grading and excavation activities are completed or prior to the completion if the monitor has indicated that the site has a low potential for tribal cultural resources.</p>							
MM-TCR-2 Unanticipated Discovery of Tribal Cultural Resources							
<p>Upon discovery of any tribal cultural resources, the Native American monitor has the ability to halt construction activities in the immediate vicinity (within 50 feet) of the find until the find can be assessed. All tribal cultural resources unearthed during project construction activities shall be evaluated by the Native American monitor approved by the relevant tribes and a qualified archaeologist. Construction work shall be permitted to continue on other parts of the project site while evaluation and, if necessary, additional investigations and/or preservation measures take place (CEQA Guidelines Section 15064.5(f)). If the resources are Native American in origin, the relevant tribes shall coordinate with the landowner regarding treatment and curation of these resources. If a resource is determined by the qualified archaeologist to constitute a “historical resource” or “unique</p>	<ol style="list-style-type: none"> 1. Upon the discovery of any tribal cultural resources, confirm construction has been halted per the Native American monitor’s assessment. 2. Confirm that the avoidance measures described in this mitigation measure have been implemented 	<ol style="list-style-type: none"> 1. Upon the discovery of any tribal cultural resources 2. Throughout construction and grading activities after the discovery of any tribal cultural resource 	<ol style="list-style-type: none"> 1. Once for each occurrence 2. Periodically 	<p>City of Palmdale Planning Department</p>			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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archaeological resource,” time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available through coordination between the relevant tribes and the project applicant. The treatment plan established for the resources shall be in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5(f) for historical resources and Public Resources Code (PRC) Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.							

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8 Responses to Comments on the Draft EIR

This section includes comments received during the circulation of the Draft Environmental Impact Report prepared for the City of Palmdale 2045 General Plan Update Project (Project).

The Draft EIR was circulated for a 45-day public review period that began on July 14, 2022, and ended on August 29, 2022. The City of Palmdale received two comment letters on the Draft EIR. The commenters and the page number on which each commenter's letter appear are listed below.

Letter No. and Commenter	Page No.
1 Barbara Lods, Operations Manager, Antelope Valley Air Quality Management District	8-2
2 Victoria Tang, California Department of Fish and Wildlife	8-4

The comment letters and responses follow. The comment letters have been numbered sequentially and each separate issue raised by the commenter, if more than one, has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 1.1, for example, indicates that the response is for the first issue raised in comment letter 1).

Where a comment resulted in a change to the Draft EIR text, a notation is made in the response indicating that the text is revised. Changes in text are signified by strikeouts (~~strikeouts~~) where text is removed and by underlined font (underlined font) where text is added. These changes in text are also included in *Amendments to the Draft EIR*, at the end of this section.



Antelope Valley Air Quality Management District
43301 Division St., Suite 206
Lancaster, CA 93535-4649

661.723.8070

In reply, please refer to AV0722/140

July 29, 2022

Megan Taggart
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

RE: Notice of Availability of a Draft Environmental Impact Report for Project: Palmdale 2045
General Plan Update (Palmdale 2045)

Dear Ms. Taggart,

The Antelope Valley Air Quality Management District (District) has received the Notice of Availability of A Draft Environmental Impact Report for the Palmdale 2045 General Plan Update Project.

We have reviewed the documentation and based on the information available to us at this time, we have no comment on the request.

Thank you for the opportunity to review this planning document. If you have any questions regarding this letter, please contact me at (661) 723-8070 x23 or blods@avaqmd.ca.gov.

Sincerely,

Barbara Lods

Barbara Lods
Operations Manager

BJL/SS
Sent via E-mail

Letter 1

COMMENTER: Barbara Lods, Operations Manager, Antelope Valley Air Quality Management District

DATE: July 29, 2022

The commenter states that the District received the Notice of Availability of the Draft EIR, reviewed the document, and has no comments. This comment is noted, and no response is required.



State of California – Natural Resources Agency
 DEPARTMENT OF FISH AND WILDLIFE
 South Coast Region
 3883 Ruffin Road
 San Diego, CA 92123
 (858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



August 23, 2022

Megan Taggart
 City of Palmdale
 38250 Sierra Highway
 Palmdale, CA 93550
MTaggart@cityofpalmdale.org

Subject: Comments on the Draft Environmental Impact Report for the Palmdale 2045 General Plan Update Project, SCH #2021060494, Los Angeles County

Dear Ms. Taggart:

The California Department of Fish and Wildlife (CDFW) has reviewed the Draft Environmental Impact Report (DEIR) for the Palmdale 2045 General Plan Update Project (Project) from the City of Palmdale (City). Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State [Fish & G. Code, §§ 711.7, subdivision (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect state fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 *et seq.*). Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq.*), or CESA-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 *et seq.*), CDFW recommends the Project proponent obtain appropriate authorization under the Fish and Game Code.

2-1

Megan Taggart
City of Palmdale
August 23, 2022
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Project Description and Summary

Objective: The proposed Project is a three-plus-year comprehensive update to the City's General Plan, the guiding document for the future of Palmdale over 23 years (2022-2045). The Project focuses on building out planned infrastructure investments and improving multi-modal active transportation and connectivity. The Project identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a downtown near the future multimodal transit station, establishing three health and wellness districts, and developing two education districts. This also includes transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. The City has identified 24 sites on Table 3-1 Development Status of Major Approved Projects that are sites approved for development (Approved Projects) within the 23-year planning period of the Project. The following actions will also be taken by the City in connection with the Project and are also considered part of the proposed project analyzed in the DEIR:

2.1

- Adopt and implement the General Plan Update (Palmdale 2045 Plan);
- Adopt and implement the Climate Action Plan;
- Adopt Zoning Ordinance Amendments required to make the Zoning Ordinance consistent with the General Plan Update;
- Adopt the Housing Element Update; and
- Adopt revisions to the Palmdale Transit Area Specific Plan to slightly expand its boundary.

Location: The Project would apply to the entire geographic area located within the boundaries of the City of Palmdale. The City is located in the southern region of the Antelope Valley, approximately 60 miles northeast of downtown Los Angeles along State Highway 14. The Project Area is 106,634 acres, or approximately 166 square miles.

Comments and Recommendations

CDFW offers the comments and recommendations below to assist the City in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions are also included to improve the environmental document. CDFW recommends the measures or revisions below be included in a science-based monitoring program that contains adaptive management strategies as part of the Project's CEQA mitigation, monitoring and reporting program (Pub. Resources Code, § 21081.6; CEQA Guidelines, § 15097).

2.2

Specific Comments

Comment #1: Impacts on Western Joshua Trees (*Yucca brevifolia*) and Woodlands

Issue: Development facilitated by the Project could impact western Joshua trees and woodlands, which can be found throughout the Palmdale area.

2.3

Specific impacts: Development of the Approved Projects or future project sites may result in loss of individual western Joshua trees as well as acres of Joshua tree woodlands.

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Why impact would occur: Take of western Joshua tree is defined as any activity that results in the removal of a western Joshua tree, or any part thereof, or impacts the seedbank surrounding one or more western Joshua trees (CDFW 2022a). Development of some Approved Projects and potentially future sites could result in the loss of individual trees and acres of Joshua tree woodlands. Impacts on western Joshua trees and Joshua tree woodlands could occur as a result of clearing a project site for development, which includes fuel modification areas surrounding the potential development. Even if individual trees are not removed as part of fuel modification, removal and disturbance of the understory vegetation would result in the complete loss, degradation, or disturbance of a structurally diverse Joshua tree woodland. As a result, the Project would remove western Joshua trees, eliminate and modify habitat, and crush and/or bury living seeds in the soil, rendering living seeds inviable and/or causing them to be killed.

The DEIR concludes that the Project's impact on western Joshua trees is less than significant through implementation and compliance with the City's Native Vegetation Ordinance as well as the Project's Conservation Policy Goal CON-1.2. The City's Native Vegetation Ordinance applies to individual trees, not the habitat or natural community as a whole. The Project's Goal CON-1.2 does not prescribe, require, or impose specific actions that would substantially mitigate for impacts on a natural community that CDFW considers to be a Sensitive Natural Community. The DEIR does not require any future development facilitated by the Project to undertake measures to mitigate for impacts on western Joshua trees as a natural community. As a result, the Project could result in unmitigated impacts.

The City's Native Vegetation Ordinance requires preservation of two Joshua trees per acre. Loss of woodlands supporting foraging, nesting, and dispersing wildlife may not be completely mitigated by preserving individual trees. Individual trees may not completely replace the loss of viable habitat, understory vegetation, and biological functions. This could result in a short-term and long-term reduction in Joshua tree woodlands available to support biological and ecological functions. As such, this could result in local extirpation of wildlife.

Evidence impact would be significant: The western Joshua tree is a species designated as candidate for listing as threatened pursuant to CESA (Fish & G. Code, § 2050 *et seq.*). The western Joshua tree is granted full protection of a threatened species under CESA. Take of any endangered, threatened, candidate species that results from the Project is prohibited, except as authorized by State law (Fish & G. Code, §§ 86, 2062, 2067, 2068, 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). The DEIR does not describe or disclose any compensatory mitigation required for the Project's impact on western Joshua trees, their seedbank, or in situ western Joshua trees adjacent to an Approved Project or future project site. Accordingly, the Project may have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status by CDFW.

CDFW considers Joshua tree woodlands to be a sensitive plant community. Impacts to a Sensitive Natural Community should be considered significant under CEQA unless impacts are clearly mitigated below a level of significance. Without appropriate mitigation, the Project may result in significant impacts on a Sensitive Natural Community if development facilitated by the Project would remove, encroach into, or disturb (e.g., fuel modification) such resources. Accordingly, the Project would continue to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on a species or natural community identified as a candidate, sensitive, or special status species by CDFW.

2.3

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Recommended Potentially Feasible Mitigation Measure(s) Required for Future Projects Facilitated by the General Plan Update:

Mitigation Measure #1: The City should require project applicants to submit an Incidental Take Permit (ITP) Application to CDFW that provides the following information (at a minimum):

1. An analysis of individual western Joshua trees (clonal and non-clonal) and western Joshua tree seedbank that would be impacted both within the Project site and within 300 feet of the Project site;
2. An analysis of the acres of natural communities supporting western Joshua trees that would be impacted both within the Project site and within 300 feet of the Project site provided according to alliance and/or association-based natural communities found in the [Manual of California Vegetation](#) (MCV), second edition (Sawyer et al. 2009);
3. A map of the Project's site plan overlaid on location of western Joshua trees and natural communities; and
4. A discussion of whether development could impact any in-situ western Joshua trees adjacent to the Project site.

Mitigation Measure #2: The City should provide compensatory mitigation for any Approved Project's or future project's impact on western Joshua trees at no less than 2:1, or as required in an ITP for western Joshua trees issued by CDFW. Mitigation should be higher if the project will impact a western Joshua tree population that is increasing through seedling recruitment. Mitigation lands provided by the City should (at a minimum):

1. Support western Joshua trees of similar density, abundance, and age structure;
2. Support natural communities of similar native plant species composition, density, structure, and function to habitat that was impacted;
3. Support nursery plants for western Joshua tree recruits; and
4. Not be exposed or have the potential to be exposed to disturbances such as OHV activity, illegal access, and encroachment from pending or future development.

Mitigation Measure #3: The City should require the project applicants to protect mitigation lands in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands pursuant to Assembly Bill 1094 (2012). Assembly Bill 1094 amended Government Code sections 65965-65968. Under Government Code section 65967(c), the lead agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves. An appropriate non-wasting endowment should be provided for the long-term management of mitigation lands. A mitigation plan should include measures to protect the targeted habitat values in perpetuity from direct and indirect negative impacts. Issues that should be addressed include but are not limited to the following: protection from any future development and zone changes; restrictions on access; proposed land dedications; control of illegal dumping; water pollution; and, increased human intrusion. A conservation easement and endowment funds should be fully acquired, established, transferred, or otherwise executed prior to impacts on western Joshua trees.

Recommendation #1: The City should revise the DEIR to require future applicants to disclose the project's impact on western Joshua tree by providing the following information:



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1. The Project’s potential impact on western Joshua tree seedbank within the Project site;
2. The Project’s potential impact on western Joshua trees and seedbank adjacent to the Project site;
3. The Project’s potential impact on each unique native and non-native natural community supporting western Joshua trees within and adjacent to the Project site;
4. The Project’s construction, operation, and maintenance activities that could impact western Joshua trees and seedbank within and adjacent to the Project site; and
5. The Project’s cumulative impact on western Joshua tree.

2.3

Recommendation #2: Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP for the Project unless the Project require all current and future project CEQA document address all the project’s impact on CESA endangered, threatened, and/or candidate species. The Project’s CEQA document should also specify a mitigation monitoring and reporting program that will meet the requirements of an ITP. Also, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for an ITP. However, it is worth noting that mitigation for the Project’s impact on a CESA endangered, threatened, and/or candidate species proposed in the Project’s CEQA document may not necessarily satisfy mitigation required to obtain an ITP.

Comment #2: Impacts on Biological Resources

Issue: Development facilitated by the Project could impact biological resources.

Specific impacts: Direct and indirect impacts on biological resources could result from development on Approved Project and future sites. Impacts on biological resources could result in reproductive suppression, mortality or injury to wildlife, or population decline of a special status, sensitive, or rare species or natural community.

Why impacts would occur: The DEIR states, “Based on the review of applicable databases, 32 special-status animal species and 43 special-status plant species have been observed or have the potential to occur in the 9-quadrangle search area surrounding the Planning Area, as detailed in Appendix C. These include the desert tortoise and Mohave ground squirrel.” According to the DEIR, out of the 24 sites that the Project has identified, CDFW has estimated 19 sites on vacant land. Development on these sites as proposed in the Project, would require removal of habitat and construction of residential, commercial, and industrial uses. Development on these sites could result in habitat modification and impacts to special status species during development and operation. Development facilitated by the Project could impact biological resources, both directly or indirectly through habitat modification or loss. Biological resources that could be impacted by the Project includes special status, sensitive, or rare species or natural communities. Given that the Project site supports multiple species and their habitats, the DEIR only includes MM-BIO-1 to minimize impacts to nesting birds. The Project may, therefore, result in a net loss of special status, sensitive, or rare species or natural communities without further avoidance, minimization, or mitigation measures.

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The DEIR concludes that the Project’s impact on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW and/or U.S. Fish and Wildlife Service (USFWS) is less than significant through implementation of the Project’s goals and policies and compliance with provisions of the various

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State and federal regulations. The Project's Conservation Goals CON-1, CON-2, CON-5, and CON-7 are goals and policies that do not prescribe, require, or impose specific actions that would substantially mitigate for impacts on candidate, sensitive, or special status species at a project level. The DEIR does not require future development facilitated by the Project to undertake any measures to mitigate for impacts on candidate, sensitive, or special status species, other than birds. As a result, the Project, by identifying developable sites over the next 23 years, could result in unmitigated impacts.

Evidence impacts would be significant: The Project has identified vacant sites within the City that could be developed through 2045. The Project could result in direct physical changes to the environment and impact special status, sensitive, or rare plant or wildlife species or natural communities. Impacts on CESA- and ESA-listed species requires a mandatory finding of significance under CEQA (CEQA Guidelines, § 15065). Take under ESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Plants with a California Rare Plant Rank (CRPR) of 1B meets the definition of endangered, rare, or threatened species under CEQA (CEQA Guidelines, §15380; CNPS 2022a). Plants with a CRPR of 4 may meet the definition of endangered, rare, or threatened species. Impacts on rare plants could require a mandatory finding of significance. CDFW considers Sensitive Natural Communities as threatened habitats having both regional and local significance. Natural communities, alliances, and associations with a State-wide rarity ranking of S1, S2, and S3 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by visiting the [Vegetation Classification and Mapping Program - Natural Communities](#) webpage (CDFW 2022a). Impacts on sensitive natural communities could require a mandatory finding of significance. species by CDFW.

Development facilitated by the Project could substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species [CEQA Guidelines, § 150565(a)(1)]. Without appropriate mitigation, the Project continues to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species, or a Sensitive Natural Community, in local or regional plans, policies, or regulations, or by CDFW and/or USFWS.

Recommended Potentially Feasible Mitigation Measure(s) Required for Future Projects Facilitated by the General Plan Update:

Mitigation Measure #4: Future development projects on Approved Project sites should conduct the appropriate biological resources technical studies as part of project-level analyses, including baseline surveys, protocol-level surveys, tree inventories to confirm the presence of any special status species within or immediate adjacent to proposed impact areas. Focused species-specific surveys should be required if suitable habitat is present. These surveys should be performed according to any established CDFW and/or USFWS protocols. Reports should be prepared that should document baseline conditions at the time of project application, identify constraints, recommend project redesign, analyze potential effects, and propose mitigation measures that reduce potential impacts to less than significant levels. Biological resources technical studies should provide and include the following:



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1. A complete, recent, assessment of rare, threatened, and endangered species, regionally and locally unique species, and sensitive habitats at the project site and within the area of potential effect, including California Species of Special Concern and California Fully Protected Species (Fish & G. Code, §§ 3511, 4700, 5050, and 5515). Species to be addressed should include all those which meet the CEQA definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of land around the project site should also be addressed. A nine-quadrangle search of CDFW's [California Natural Diversity Database](#) (CNDDDB) should be conducted to obtain current information on any previously reported sensitive species and habitat (CDFW 2022b);
2. A thorough, recent, floristic-based assessment of special status plants and natural communities following CDFW's [Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities](#) (CDFW 2018). Adjoining habitat areas should be included where project construction and activities could lead to direct or indirect impacts off site;
3. Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at the project site and within the area of potential effect. The [Manual of California Vegetation](#) (MCV), second edition, should be used to inform this mapping and assessment (Sawyer et al. 2009);
4. A rare plant assessment using online databases for rare, threatened, and endangered plants, including the California Native Plant Society (CNPS) [Online Inventory of Rare and Endangered Plants of California](#) (CNPS 2022b) as well as the Calflora's [Information on Wild California Plants](#) database (Calflora 2022);
5. A discussion regarding project-related indirect impacts on biological resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands [e.g., preserve lands associated with a Natural Community Conservation Plan (Fish & G. Code, § 2800 et. seq.)]; and
6. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in areas adjacent to the project site.

Mitigation Measure #5: If necessary, the project applicants should be required to enter into consultation with, and obtain the appropriate permits from, the USFWS and/or CDFW for unavoidable impacts to special status species and other protected resources. Appropriate permits from the USFWS and/or CDFW should be obtained prior to obtaining a grading permit.

Mitigation Measure #6: If a rare plant species or a Sensitive Natural Community is detected, the project applicant should fully avoid impacts. If the project cannot feasibly avoid impacts to rare plants and habitat, or sensitive natural communities, either during project activities or over the life of the project, the project applicant should provide compensatory mitigation for the loss of individual plants and habitat acres, which should include impacts due to fuel modification. Impacts on rare plants or a Sensitive Natural Community due hazard mitigation/remediation should also be mitigated as these impacts would result in permanent loss and perpetual impacts on habitat function and quality. The project applicant should provide compensatory mitigation so that there is no net loss of rare plants and habitat, or sensitive natural communities. Compensatory mitigation should be appropriate for the extent of permanently disturbed habitat. Compensatory mitigation should be higher for impacts on CRPR 1 species, S1 or S2 Sensitive Natural Community, and Sensitive Natural Community with an additional rank of 0.1 or 0.2. Compensatory mitigation should be implemented by a qualified restoration ecologist. A Restoration Plan, at a minimum, should include success criteria and performance standards for measuring the establishment of rare plants and habitat, responsible parties, maintenance

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techniques and schedule, five-year monitoring and reporting schedule, adaptive management strategies, and contingencies. A Restoration Plan should be submitted to the City prior to any grading or vegetation removal.

Mitigation Measure #7: CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species that results from a project is prohibited, except as authorized by State law (Fish & G. Code, §§ 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). Consequently, if a project, project construction, or any project-related activity for the duration of the project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends the project applicant seek appropriate take authorization under CESA prior to implementing or continuing the project. Appropriate authorization from CDFW may include an ITP or a Consistency Determination in certain circumstances, among other options [Fish & G. Code, §§ 2080.1, 2081, subds. (b) and (c)]. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the project's CEQA document addresses all project impacts to CESA listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

2-4

Comment #3: Impacts to Streams

Issue: Development facilitated by the Project and Conservation Goal CON-7 could impact streams.

Specific impacts: Development on some of the Approved Project sites may result in erosion and earth movement that could impair streams, whether ephemeral, intermittent, or perennial. Development on the Approved Project or future project sites may necessitate capturing local run-off from their natural course of flow. In addition, vegetation along streams may need to be removed or may be degraded through habitat modification (e.g., loss of water source, encroachment, and edge effects leading to introduction of non-native plants).

Why impacts would occur: According to the DEIR, Amargosa Channel is located adjacent to a site on the Approved Projects. Development of this site could affect riparian habitat during project construction and operation. Development on this and potentially additional future sites may result in ground-disturbing activities and vegetation removal. This includes ground-disturbing activities and vegetation removal potentially required for fuel modification and hazard mitigation/remediation. Ground-disturbing activities and vegetation removal could result in erosion. Siltation or runoff downstream could impair streams and herbaceous vegetation. Herbaceous vegetation adjacent to streams protects the physical and ecological integrity of these water features and maintains natural sedimentation processes. Therefore, a housing or future project that would impact vegetation adjacent to streams, but not the stream itself, could still impact the stream.

2-5

In addition, current Approved Projects or future projects may require streams to be channelized or local run-off diverted from their natural course of flow. The DEIR concludes that the Project's impact on any riparian habitat or other sensitive natural community is less than significant

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through implementation of the Project's goals and policies and compliance with relevant local, state, and federal regulations. The Policy Conservations Goals CON-1, CON-4, CON-5, CON-6, CON-7 are goals and policies that do not prescribe, require, or impose specific actions that would substantially mitigate for impacts on streams and associated natural communities. The DEIR does not require future development facilitated by the Project to undertake any measures to mitigate for impacts on streams and associated natural communities. As a result, the Project, by identifying developable sites over the next 23 years, could result in unmitigated impacts.

Evidence impacts would be significant: Changes to hydrology or channel morphology, due to run-off diversion, are reasonable potential direct and indirect physical changes in the environment. Said changes and their potential impacts on biological resources should be analyzed and disclosed in an environmental document. Adequate disclosure is necessary for CDFW to assist a lead agency in adequately identifying, avoiding, and/or mitigating a project's significant, or potentially significant, direct, and indirect impacts on biological resources.

CDFW exercises its regulatory authority as provided by Fish and Game Code section 1600 et seq. to conserve fish and wildlife resources which includes rivers, streams, or lakes and associated natural communities. Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW prior to beginning any activity that may do one or more of the following:

- Divert or obstruct the natural flow of any river, stream, or lake;
- Change the bed, channel, or bank of any river, stream, or lake;
- Use material from any river, stream, or lake; or,
- Deposit or dispose of material into any river, stream, or lake.

CDFW requires a Lake and Streambed Alteration (LSA) Agreement when a project activity may substantially adversely affect fish and wildlife resources. The Project may result in significant impacts on streams and associated natural communities if development of Approved Project sites identified by the Project or future projects would be in close proximity to these resources. Without appropriate mitigation, the Project continues to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on fish and wildlife resources, including rivers, streams, or lakes and associated natural communities identified by CDFW.

Recommended Potentially Feasible Mitigation Measure(s) Required for Future Projects Facilitated by the General Plan Update:

Mitigation Measure #8: Project specific analyses should prepare a jurisdictional delineation and impact assessment provided along with the project's biological resources technical studies.

Mitigation Measure #9: If any river, stream, or lake are present and may be impacted, the project should be required to avoid impacts by implementing appropriate vegetative buffers and/or setbacks adjoining the stream or wetland feature to reduce impacts of the project on these resources.

Mitigation Measure #10: If avoidance is not feasible, the project applicant should be required to notify CDFW pursuant to Fish and Game Code 1602 and obtain an LSA Agreement from CDFW prior to obtaining a grading permit. The project applicant should comply with the



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mitigation measures detailed in a LSA Agreement issued by CDFW. The project applicant should also provide compensatory mitigation at no less than 2:1 for the impacted stream and associated natural community, or at a ratio acceptable to CDFW. Please visit CDFW’s [Lake and Streambed Alteration Program](#) webpage for more information (CDFW 2022c).

Recommendation #3: CDFW recommends the DEIR require any approved or future projects to include an analysis of potential impacts on biological resources resulting from any proposed water diversion. At a minimum, the analysis should evaluate a study reach that includes the channel downstream from a project site. The study reach should extend a minimum of one mile downstream or an appropriate distance determined by both a qualified biologist and hydrologist, whichever is greater. The analysis of the study reach should discuss changes in hydrology and hydraulics, including the following:

1. Under pre-project (i.e., baseline) conditions, the volume of water flow from both the project area and study reach during a) the wet (November through March); b) the dry season (April through October); and c) above-average and below-average water year (i.e., wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year). The analysis should clearly define above-average or below-average rainfall year.
2. Under proposed project conditions, the percent reduction in flow from both the project area and study reach for a wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year.
3. A quantitative analysis comparing the flow from the project area and other tributaries into the study reach, and their relative contribution to the hydrograph of the study reach.
4. An analysis of potential project-related changes to river hydraulics in both concrete-lined and soft-bottom reaches. This includes water depth (percent change), wetted perimeter (acres gained/lost), and velocity (percent change).

2-5

Recommendation #4: CDFW’s issuance of an LSA Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document from the lead agency/project applicant for the project. To minimize additional requirements by CDFW pursuant to Fish and Game Code section 1600 et seq. and/or under CEQA, a project’s CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of the LSA Agreement. To compensate for any on- and off-site impacts to aquatic and riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: erosion and pollution control measures; avoidance of resources; protective measures for downstream resources; on- and/or off-site habitat creation; enhancement or restoration; and/or protection and management of mitigation lands in perpetuity.

Additional Recommendations

Recommendation #5: Nesting Birds – CDFW recommends modifying BIO-MM-4 to include underlined language and remove language with strikethrough:

“To avoid disturbance of nesting and special status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out

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under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) ~~(February 1 through August 31)~~. If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

2-6

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.”

It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the permanent removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW shall be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.

Recommendation #6: Data – CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special status species detected by completing and submitting [CNDDB Field Survey Forms](#) (CDFW 2022d). This includes all documented occurrences of special status species. The City should ensure the data has been properly submitted, with all data fields applicable filled out, prior to Project ground-disturbing activities. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred. The City should provide CDFW with confirmation of data submittal.

2-7

Recommendation #7: Mitigation and Monitoring Reporting Plan – Per Public Resources Code section 21081.6(a)(1), CDFW has provided the City with a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation and Monitoring Reporting Plan (MMRP; Attachment A). A final MMRP shall reflect results following additional plant and wildlife surveys and the Project’s final on and/or off-site mitigation plans.
Filing Fees

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The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the City of Palmdale and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required for the underlying Project approval to be operative, vested, and final (Cal. Code Regs., tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

Conclusion

We appreciate the opportunity to comment on the Project to assist the City in adequately analyzing and minimizing/mitigating impacts to biological resources. CDFW requests an opportunity to review and comment on any response that the City has to our comments and to receive notification of any forthcoming hearing date(s) for the Project [CEQA Guidelines, § 15073(e)]. If you have any questions or comments regarding this letter, please contact Felicia Silva, Environmental Scientist, at Felicia.Silva@wildlife.ca.gov or (562) 292-8105.

Sincerely,

DocuSigned by:

5991E19EF8094C3...

Victoria Tang signing for

Erinn Wilson-Olgin
Environmental Program Manager I
South Coast Region

ec: CDFW

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- Office of Planning and Research
State Clearinghouse, Sacramento – State.Clearinghouse@opr.ca.gov

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State of California – Natural Resources Agency
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GAVIN NEWSOM, Governor
 CHARLTON H. BONHAM, Director

Attachment A: Draft Mitigation and Monitoring Reporting Plan

CDFW recommends the following language to be incorporated into a future environmental document for the Project. A final MMRP shall reflect results following additional plant and wildlife surveys and the Project's final on and/or off-site mitigation plans.

Biological Resources (BIO)		
Mitigation Measure (MM) or Recommendation (REC)	Timing	Responsible Party
<p>MM-BIO-1- Joshua Tree ITP</p> <p>The City shall require project applicants to submit an ITP Application to CDFW that provides the following information (at a minimum):</p> <ol style="list-style-type: none"> 1) An analysis of individual western Joshua trees (clonal and non-clonal) and western Joshua tree seedbank that would be impacted both within the Project site and within 300 feet of the Project site; 2) An analysis of the acres of natural communities supporting western Joshua trees that would be impacted both within the Project site and within 300 feet of the Project site provided according to alliance and/or association-based natural communities found in the Manual of California Vegetation (MCV), second edition (Sawyer et al. 2009); 3) A map of the Project's site plan overlaid on location of western Joshua trees and natural communities; and 4) A discussion of whether housing development could impact any in-situ western Joshua trees adjacent to the Project site. 	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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<p>MM-BIO-2- Joshua Tree Mitigation</p>	<p>The City shall provide compensatory mitigation for any Approved Projects or future project's impact on western Joshua trees at no less than 2:1, or as required in an ITP for western Joshua trees issued by CDFW. Mitigation shall be higher if the project will impact a western Joshua tree population that is increasing through seedling recruitment. Mitigation lands provided by the City shall (at a minimum):</p> <ol style="list-style-type: none"> 1) Support western Joshua trees of similar density, abundance, and age structure; 2) Support natural communities of similar native plant species composition, density, structure, and function to habitat that was impacted; 3) Support nursery plants for western Joshua tree recruits; and 4) Not be exposed or have the potential to be exposed to disturbances such as OHV activity, illegal access, and encroachment from pending or future development. 	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>
<p>MM-BIO-3- Mitigation Lands</p>	<p>The City shall require the project applicants to protect mitigation lands in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands pursuant to Assembly Bill 1094 (2012). Assembly Bill 1094 amended Government Code sections 65965-65968. Under Government Code section 65967(c), the lead agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves. An appropriate non-wasting endowment shall be provided for the long-term management of mitigation lands. A mitigation plan shall include measures to protect the targeted habitat values in perpetuity from direct and indirect negative impacts. Issues that shall be addressed include but are not limited to the following: protection from any future development and zone</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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	<p>changes; restrictions on access; proposed land dedications; control of illegal dumping; water pollution; and, increased human intrusion. A conservation easement and endowment funds shall be fully acquired, established, transferred, or otherwise executed prior to impacts on western Joshua trees.</p> <p>The City should revise the DEIR to require future applicants to disclose the project's impact on western Joshua tree by providing the following information:</p> <ol style="list-style-type: none"> 1) The Project's potential impact on western Joshua tree seedbank within the Project site; 2) The Project's potential impact on western Joshua trees and seedbank adjacent to the Project site; 3) The Project's potential impact on each unique native and non-native natural community supporting western Joshua trees within and adjacent to the Project site; 4) The Project's construction, operation, and maintenance activities that could impact western Joshua trees and seedbank within and adjacent to the Project site; and 5) The Project's cumulative impact on western Joshua tree. 		
<p>REC-1-Impacts to Joshua Tree</p>		<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>
<p>REC-2-ITP Issuance</p>	<p>Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP for the Project unless the Project require all current and future project CEQA document address all the project's impact on CESA endangered, threatened, and/or candidate species. The Project's CEQA document should also specify a mitigation monitoring and reporting program that will meet the requirements of an ITP. Also, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for an ITP. However, it is worth noting that mitigation for the Project's impact on a CESA endangered, threatened, and/or candidate species proposed in the Project's CEQA document may not necessarily satisfy mitigation required to obtain an ITP.</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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<p>MM-BIO-4-Biological Resources</p>	<p>Future development projects and development on Approved Project sites shall conduct the appropriate biological resources technical studies as part of project-level analyses, including baseline surveys, protocol-level surveys, tree inventories to confirm the presence of any special status species within or immediate adjacent to proposed impact areas. Focused species-specific surveys shall be required if suitable habitat is present. These surveys shall be performed according to any established CDFW and/or USFWS protocols. Reports shall be prepared that shall document baseline conditions at the time of project application, identify constraints, recommend project redesign, analyze potential effects, and propose mitigation measures that reduce potential impacts to less than significant levels. Biological resources technical studies shall provide and include the following:</p> <ol style="list-style-type: none"> 1. A complete, recent, assessment of rare, threatened, and endangered species, regionally and locally unique species, and sensitive habitats at the project site and within the area of potential effect, including California Species of Special Concern and California Fully Protected Species (Fish & G. Code, §§ 3511, 4700, 5050, and 5515). Species to be addressed shall include all those which meet the CEQA definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of land around the project site shall also be addressed. A nine-quadrangle search of CDFW's California Natural Diversity Database (CNDDDB) shall be conducted to obtain current information on any previously reported sensitive species and habitat (CDFW 2022b); 2. A thorough, recent, floristic-based assessment of special status plants and natural communities following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). Adjoining habitat areas shall be included where project construction and activities could lead to direct or indirect impacts off site; 	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>
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	<p>3. Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at the project site and within the area of potential effect. The Manual of California Vegetation (MCV), second edition, shall be used to inform this mapping and assessment (Sawyer et al. 2009);</p> <p>4. A rare plant assessment using online databases for rare, threatened, and endangered plants, including the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS 2022b) as well as the California's Information on Wild California Plants database (Calflora 2022);</p> <p>5. A discussion regarding project-related indirect impacts on biological resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands [e.g., preserve lands associated with a Natural Community Conservation Plan (Fish & G. Code, § 2800 et. seq.)]; and,</p> <p>6. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in areas adjacent to the project site.</p>		
<p>MM-BIO-5-Special Status Species Permits</p>	<p>If necessary, the project applicants shall be required to enter into consultation with, and obtain the appropriate permits from, the USFWS and/or CDFW for unavoidable impacts to special status species and other protected resources. Appropriate permits from the USFWS and/or CDFW shall be obtained prior to obtaining a grading permit.</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>
<p>MM-BIO-6-Sensitive Natural Communities</p>	<p>If a rare plant species or a Sensitive Natural Community is detected, the project applicant shall fully avoid impacts. If the project cannot feasibly avoid impacts to rare plants and habitat, or sensitive natural communities, either during project activities or over the life of the project, the project applicant shall provide compensatory mitigation for the loss of individual plants and habitat acres, which shall include impacts due to fuel modification.</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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	<p>Impacts on rare plants or a Sensitive Natural Community due to hazard mitigation/remediation shall also be mitigated as these impacts would result in permanent loss and perpetual impacts on habitat function and quality. The project applicant shall provide compensatory mitigation so that there is no net loss of rare plants and habitat, or sensitive natural communities. Compensatory mitigation shall be appropriate for the extent of permanently disturbed habitat. Compensatory mitigation shall be higher for impacts on CRPR 1 species, S1 or S2 Sensitive Natural Community, and Sensitive Natural Community with an additional rank of 0.1 or 0.2. Compensatory mitigation shall be implemented by a qualified restoration ecologist. A Restoration Plan, at a minimum, shall include success criteria and performance standards for measuring the establishment of rare plants and habitat, responsible parties, maintenance techniques and schedule, five-year monitoring and reporting schedule, adaptive management strategies, and contingencies. A Restoration Plan shall be submitted to the City prior to any grading or vegetation removal.</p>		
<p>MM-BIO-7-CEQA Document</p>	<p>CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species that results from a project is prohibited, except as authorized by State law (Fish & G. Code, §§ 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). Consequently, if a project, project construction, or any project-related activity for the duration of the project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends the project applicant seek appropriate take authorization under CESA prior to implementing or continuing the project. Appropriate authorization from CDFW may include an ITP or a Consistency Determination in certain circumstances, among other options [Fish & G. Code, §§ 2080.1, 2081, subs. (b) and (c)]. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required to obtain a CESA Permit. Revisions to</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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	<p>the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the project's CEQA document addresses all project impacts to CESA listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.</p>		
<p>MM-BIO-8- Jurisdictional Delineation</p>	<p>Project specific analyses shall prepare a jurisdictional delineation and impact assessment provided along with the project's biological resources technical studies.</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>
<p>MM-BIO-9- Stream Buffers</p>	<p>If any river, stream, or lake are present and may be impacted, the project shall be required to avoid impacts by implementing appropriate vegetative buffers and/or setbacks adjoining the stream or wetland feature to reduce impacts of the project on these resources.</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>
<p>MM-BIO-10-LSA Notification</p>	<p>If avoidance is not feasible, the project applicant shall be required to notify CDFW pursuant to Fish and Game Code 1602 and obtain an LSA Agreement from CDFW prior to obtaining a grading permit. The project applicant shall comply with the mitigation measures detailed in a LSA Agreement issued by CDFW. The project applicant shall also provide compensatory mitigation at no less than 2:1 for the impacted stream and associated natural community, or at a ratio acceptable to CDFW. Please visit CDFW's Lake and Streambed Alteration Program webpage for more information (CDFW 2022c).</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>
<p>REC-3-Water Diversion Biological Analysis</p>	<p>CDFW recommends the DEIR require any approved or future projects to include an analysis of potential impacts on biological resources resulting from any proposed water diversion. At a minimum, the analysis should evaluate a study reach that includes the channel downstream from the Project site. The study reach should extend a minimum of one mile downstream or an appropriate distance determined by both a qualified biologist and</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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	<p>hydrologist, whichever is greater. The analysis of the study reach should discuss changes in hydrology and hydraulics, including the following:</p> <ol style="list-style-type: none"> 1. Under pre-project (i.e., baseline) conditions, the volume of water flow from both the project area and study reach during a) the wet (November through March); b) the dry season (April through October); and c) above-average and below-average water year (i.e., wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year). The analysis should clearly define above-average or below-average rainfall year. 2. Under proposed project conditions, the percent reduction in flow from both the project area and study reach for a wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year. 3. A quantitative analysis comparing the flow from the project area and other tributaries into the study reach, and their relative contribution to the hydrograph of the study reach. <p>An analysis of potential project-related changes to river hydraulics in both concrete-lined and soft-bottom reaches. This includes water depth (percent change), wetted perimeter (acres gained/lost), and velocity (percent change).</p>		
<p>REC-4-CEQA Compliance</p>	<p>CDFW's issuance of an LSA Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document from the lead agency/project applicant for the project. To minimize additional requirements by CDFW pursuant to Fish and Game Code section 1600 et seq. and/or under CEQA, a project's CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of the LSA Agreement. To</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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	<p>compensate for any on- and off-site impacts to aquatic and riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: erosion and pollution control measures; avoidance of resources; protective measures for downstream resources; on- and/or off-site habitat creation; enhancement or restoration; and/or protection and management of mitigation lands in perpetuity.</p> <p>CDFW recommends modifying BIO-MM-4 to include <u>underlined</u> language and remove language with strikethrough:</p>		
<p>REC-5-Nesting Birds</p>	<p>“To avoid disturbance of nesting and special status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, <u>February 15 through September 15 (as early as January 1 for some raptors)</u> (February 1 through August 31). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.</p> <p>If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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	<p>lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.”</p> <p>It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the permanent removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW shall be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.</p>		
<p>REC-6-Data</p>	<p>CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special status species detected by completing and submitting CNDDB Field Survey Forms (CDFW 2022d). This includes all documented occurrences of special status species. The City should ensure the data has been properly submitted, with all data fields applicable filled out, prior to Project ground-disturbing activities. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred. The City should provide CDFW with confirmation of data submittal.</p>	<p>Prior to Project construction and activities</p>	<p>City of Palmdale/Project Applicant</p>

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REC-7- Mitigation and Monitoring Plan	Per Public Resources Code section 21081.6(a)(1), CDFW has provided the City with a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation and Monitoring Reporting Plan (MMRP; Attachment A). A final MMRP shall reflect results following additional plant and wildlife surveys and the Project's final on and/or off-site mitigation plans.	Prior to approval of CEQA document	City of Palmdale/Project Applicant
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Certificate Of Completion

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Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
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Certified Delivered	Security Checked	8/23/2022 11:31:13 AM
Signing Complete	Security Checked	8/23/2022 11:31:27 AM
Completed	Security Checked	8/23/2022 11:31:27 AM
Payment Events	Status	Timestamps

Letter 2

COMMENTER: Victoria Tang, California Department of Fish and Wildlife

DATE: August 23, 2022

Response 2.1

The commenter states that CDFW is a Trustee Agency and Responsible Agency for fish and wildlife resources with jurisdiction over such resources. The commenter summarizes the proposed project and geographic area.

This comment is noted. Required approvals and approving agencies for the proposed Plan are listed in Section 2.4 of the Draft EIR (refer to page 2-14). The CDFW does not have approval authority over the proposed Plan but for individual projects that may be implemented as a result of the proposed Plan, where there are fish and wildlife resources on site, CDFW may be a Trustee or Responsible Agency for those individual projects, if and when they are submitted for application and project-level CEQA review.

Response 2.2

The commenter recommends inclusion of a science-based monitoring program with adaptive management strategies as mitigation for the project.

Please refer to Response 2.3 through Response 2.6 regarding the commenter's proposed mitigation measures. A Mitigation Monitoring and Reporting Program (MMRP) is required by CEQA and included in this Final EIR as Appendix F. The MMRP includes all mitigation measures in the Final EIR, a timeline for implementation and the responsible agency overseeing mitigation.

Response 2.3

The commenter states that the project could impact Western Joshua trees (*Yucca brevifolia*) and woodlands, specifically from the loss of individual trees and acres of woodlands. The commenter states that impacts would occur as a result of clearing sites for development, including fuel modification that could disturb woodlands, and crushing or burying seeds such that they are no longer viable. The commenter summarizes the conclusion in the Draft EIR and states that the City's Native Vegetation Ordinance applies to individual trees rather than the community as a whole. The commenter states that CDFW considers Joshua tree woodlands to be a sensitive natural community, and project impacts are unmitigated. The commenter states that Joshua trees are designated as a candidate for listing as threatened under the California Endangered Species Act (CESA). The commenter recommends new mitigation measures be added to the Draft EIR, including a requirement for Incidental Take Permit (ITP) applications, compensatory mitigation at a 2:1 ratio or higher for Joshua tree removal, and establishing a permanent conservation easement. The commenter recommends the Draft EIR provide additional information related to potential impacts to western Joshua tree and sensitive natural communities, and preparation of separate CEQA documents for the issuance of ITPs for individual projects.

Joshua tree habitat is described on page 4.4-5 of the Draft EIR, as part of the vegetation communities discussion. Joshua tree habitat is identified in the Draft EIR as a sensitive natural community on page 4.4-13.

Section 4.4.2 of the Draft EIR, beginning on page 4.4-15, describes the regulations applicable to future development as a result of the proposed Plan. As described therein, the City's Native Vegetation Ordinance (PMC Section 14.04.040[B-C]) requires developers to obtain a permit for removal of dead western Joshua trees or limbs from the City, and, because the species is a candidate for listing, permits from CDFW would be required for the removal of live western Joshua trees unless there is a change in the Joshua tree's status before implementation of future development projects. As stated in Palmdale Municipal Code (PMC) Section 14.04.040(I), projects not described in PMC 14.04.040(A-H) would be required to obtain an Incidental Take Permit (ITP) from CDFW.

Potential impacts to individual Joshua trees and Joshua tree habitat are discussed under Impact BIO-1 (pages 4.4-19 through 4.4-22 of the Draft EIR), and Impact BIO-4 (page 4.4-26 of the Draft EIR). These impact discussions describe the regulatory requirements that would be protective of sensitive habitats and special-status species, as follows:

Under the proposed Plan, development that could alter biological habitats could occur in portions of the Planning Area, but all development would be subject to the provisions of the various federal and State natural resources regulations discussed in Section 4.4.3, Regulatory Setting and their respective permitting processes. These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found. Plan goals and policies that would encourage the conservation and protection of public open space and natural resources and reduce potential impacts to special-status species and sensitive habitats...

Regulatory requirements related to western Joshua tree are reinforced by goals and policies in the proposed Plan, including the federal Endangered Species Act (ESA), CESA, and the City's Native Vegetation Preservation Ordinance. The impact discussion concludes: "Implementation of these goals and policies would ensure that projects carried out under the proposed Plan would be completed in accordance with protecting and preserving SEAs."

Furthermore, the discussion under Impact BIO-4 on page 4.4-26 of the Draft EIR states:

PMC Chapter 14.04 prohibits the removal of any desert vegetation unless a native desert vegetation removal permit has been issued from the City.... Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Juniper trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the PMC. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW. Development carried out under the proposed Plan would be required to adhere to City ordinances and CDFW requirements protecting desert vegetation such as Joshua trees, which would ensure that such vegetation is not damaged or removed unless properly permitted.

As described therein, the protections provided by the PMC related to western Joshua trees protects the species as individuals as well as "native desert vegetation" as a whole, which includes a variety of vegetation found in Joshua tree habitats. Furthermore, an ITP from CDFW would be required for removal of live western Joshua trees, pursuant to CESA.

Potential impacts to Joshua trees were adequately addressed in these discussions in the Draft EIR; therefore, no modifications to the Draft EIR are required, such as the addition of new mitigation measures. Pursuant to CEQA Guidelines Section 15126.4(a)(3), mitigation measures are not required for effects which are not found to be significant. Furthermore, pursuant to CEQA Guidelines Section 15126.4(a)(4), there must be a nexus between the identified impact and the proposed mitigation measure, and mitigation should be “roughly proportional” to the identified impact.

Specific project-level details regarding future development under the proposed Plan are not available at this time; therefore, specific project level or site-specific impacts related to Joshua tree removal are unknown. As required, future discretionary development projects would be subject to additional analysis under CEQA, which would include specific project-level impacts and mitigation (if necessary). The regulatory requirements identified above would be applicable to future projects that would be constructed on sites containing Joshua trees, and would address the impact to this species from potential future projects if and when those project-level details are available to provide site-specific impact analysis and if necessary, project-specific mitigation measures or Conditions of Approval to reduce or avoid any potential biological resources that may occur on the site.

Response 2.4

The commenter asserts that future development under the proposed Plan could result in reproductive suppression, mortality, injury to wildlife, or population decline. The commenter states that 19 of the 24 identified development sites are vacant land, and development would remove habitat from these sites, resulting in habitat modification and impacts to special-status species. The commenter asserts that proposed Plan Goals do not prescribe, require, or impose actions that would mitigate potential impacts, and asserts that project impacts remain unmitigated. The commenter states that impacts to special-status species requires mandatory findings of significance. The commenter recommends mitigation that would require biological studies for future projects, including field surveys and other requirements; consultation with USFWS and/or CDFW for required permits; full avoidance of rare plants and sensitive natural communities or compensatory mitigation to ensure no net loss; and obtaining appropriate authorization for take of special-status species.

Special-status species are described on pages 4.4-12 through 4.4-13 of the Draft EIR, which includes a description of listed species, special-status wildlife, and special-status plant species.

Section 4.4.2 of the Draft EIR, beginning on page 4.4-15, describes the regulations applicable to future development as a result of the proposed Plan. As described therein, special-status species are protected under the ESA, the Migratory Bird Treaty Act, CESA, the California Fish and Game Code, the California Native Plant Protection Act, and the City’s Native Vegetation Ordinance require developers to obtain permits and/or other approvals for actions that would directly result in “take” of a special-status species. Such permits would be required for future development projects where applicable, including the future development sites referenced by the comments, and additional mitigation is not necessary to reinforce such regulatory requirements. The ITP processes under the ESA and CESA require that impacts be mitigated; absent this, the requested take permits cannot be issued. Therefore, future development projects would not result in unmitigated impacts on threatened or endangered species. For the same reason, these projects would not cause fish or wildlife populations to drop below self-sustaining levels.

Potential impacts to special-status species are discussed under Impact BIO-1 (pages 4.4-19 through 4.4-22 of the Draft EIR). This impact discussion describes the regulatory requirements that would be protective of special-status species and their habitats, as follows:

Under the proposed Plan, development that could alter biological habitats could occur in portions of the Planning Area, but all development would be subject to the provisions of the various federal and State natural resources regulations discussed in Section 4.4.3, Regulatory Setting and their respective permitting processes. These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found. Plan goals and policies that would encourage the conservation and protection of public open space and natural resources and reduce potential impacts to special-status species and sensitive habitats...

Regulatory requirements related to special-status species are reinforced by goals and policies in the proposed Plan, including the ESA, CESA, and the West Mojave Plan. The impact discussion concludes:

Implementation of these goals and policies would ensure that projects carried out under the proposed Plan would be completed in accordance with protecting and preserving SEAs. While these goals and policies generally aim at protecting special-status species, if vegetation and trees are to be trimmed or removed during project construction or if construction would occur near trees and vegetation, nesting birds could be impacted. Therefore, impacts related to nesting birds would be potentially significant and Mitigation Measure BIO-1 would be required for projects where mature trees and other habitat are present and construction activities are scheduled from early spring to late summer. With implementation of Plan goals and policies and Mitigation Measure BIO-1, potential impacts to special-status species and sensitive habitat would be reduced to a less than significant level.

Additionally, the Draft EIR states the following (page 4.4-20):

These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found.

Potential impacts to special-status species were adequately addressed under Impact BIO-1 in the Draft EIR, which required mitigation related to pre-construction surveys for nesting birds (Mitigation Measure BIO-1) be implemented for future development projects. This discussion also addresses mandatory findings of significance related to substantially reducing habitat for species or resulting in species populations falling below self-sustaining levels. Pursuant to CEQA Guidelines Section 15126.4(a)(4), there must be a nexus between the identified impact and the proposed mitigation measure, and mitigation should be “roughly proportional” to the identified impact.

Specific project-level details regarding future development under the proposed Plan are not available at this time and the regulatory requirements identified above would be applicable to future projects, which would address potential project-level impacts to special-status species from potential future projects if and when those project-level details are available to provide site-specific impact analysis and if necessary, project-specific mitigation measures or Conditions of Approval to reduce or avoid any potential biological resources that may occur on the site.

Response 2.5

The commenter states that development could result in erosion and earth movement that could impair streams, necessitating the capture of runoff. The commenter specifies concerns related to a development site adjacent to Amargosa Channel from ground disturbance and vegetation removal. The commenter states that impacts to vegetation near streams would also affect the stream itself. The commenter states that future projects may channelize streams or divert runoff, asserts that proposed Plan Goals do not prescribe, require, or impose actions that would mitigate potential impacts, and asserts that project impacts remain unmitigated. The commenter summarizes the CGFC Section 1602 requirements, including Lake and Streambed Alteration Agreements. The commenter recommends mitigation measures for the preparation of jurisdictional delineations, implementing vegetative buffers from streams or wetlands, and notification of CDFW pursuant to CGFC Section 1602. The commenter recommends the preparation of additional studies of downstream channels from future projects. The commenter states that when CDFW is a Responsible Agency with permitting authority, the CEQA document prepared by the Lead Agency should include full identification of potential impacts to stream and riparian resources.

Wetlands and aquatic resources are described on pages 4.4-9 through 4.4-12 of the Draft EIR, which includes a description of freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, and riverine habitats.

Section 4.4.2 of the Draft EIR, beginning on page 4.4-15, describes the regulations applicable to future development as a result of the proposed Plan. As described therein, wetlands and riparian areas are protected under the Clean Water Act, the California Fish and Game Code, and the Porter-Cologne Water Quality Control Act. These regulations require developers to obtain permits and/or other approvals for actions that would discharge material into waters of the U.S. (including wetlands), or conduct work within the bed or bank of a lake or stream. Such permits would be required for future development projects where applicable, and would be issued in accordance with federal and state agency requirements, which include restoration of temporarily impacted waters and compensatory mitigation for permanently impacted waters. Additional mitigation in this Program EIR for the proposed Plan is not necessary to reinforce such regulatory requirements.

Potential impacts to riparian habitats and wetlands are discussed under Impact BIO-2 (pages 4.4-22 through 4.4-24 of the Draft EIR). This impact discussion describes the regulatory requirements that would be protective of riparian areas and wetlands, as follows:

Development in the Planning Area, along with other sites near or bisected by waterways and other tributaries and drainages throughout the Planning Area, may be subject to USACE, CDFW, and RWQCB permitting requirements.

Impact BIO-2 describes the anticipated impacts of future projects as follows:

Under the Plan, new development would generally result from re-use of properties, infill development on vacant lots, conversion of uses in response to market demand (e.g., mixed use developments), and more intense use of land in defined areas. While most development carried out under the Plan would be infill development in already urbanized areas not near wetlands or waterways, development could reasonably occur in undeveloped areas due to the significantly undeveloped nature of the Planning Area. Therefore, a jurisdictional delineation would be required in accordance with CWA Section 404 for development that would occur in areas near wetlands or waterways. More specifically, any proposed development in areas identified as jurisdictional waters and/or wetlands, streambed/banks, or riparian vegetation would be

subject to the permit requirements of the USACE, RWQCB, and CDFW, pursuant to Section 404 of CWA and the Porter-Cologne Water Quality Control Act. Actual jurisdictional areas are determined by the State and federal authorities at the time that permits are requested.

Therefore, the Draft EIR already acknowledges the requirement for avoiding filling wetlands or waterways without a permit, which may require conducting a jurisdictional delineation when necessary, pursuant to CWA Section 404. As this is a regulatory requirement, it is not necessary to include it as a separate mitigation measure, as suggested by the commenter. Similarly, Impact BIO-2 acknowledges that future projects could have direct impacts to wetland habitat, and PMC Section 8.04.265 requires developers to obtain other permits required by State and federal agencies, as appropriate, as standard Conditions of Approval for grading work to commence. This discussion also describes National Pollutant Discharge Elimination System Construction General Permit requirements and PMC design standard requirements related to erosion and sediment control. Potential impacts would be reduced by the above-mentioned regulatory requirements related to wetlands and riparian habitats, and impacts would be further reinforced by goals and policies in the proposed Plan, including Goals CON-1, CON-4, CON-5, CON-6, and CON-7, and policies related to those goals. The impact discussion concludes:

Implementation of these goals and policies would reduce direct impacts to riparian habitat during construction and operation by reducing direct and indirect modifications to creeks, embankments, and other waterways in the Planning Area. Furthermore, if jurisdictional waters occur on any site developed under the proposed Plan, jurisdictional delineation and RWQCB permits would be required that would address potential impacts to those waters. Adherence to state and federal regulations, the PMC, and implementation of Plan goals and polices would reduce impact to a less than significant level.

Potential impacts to wetland and riparian habitats were adequately addressed under Impact BIO-2 in the Draft EIR; therefore, no modifications to the Draft EIR are required, such as the addition of new mitigation measures. Pursuant to CEQA Guidelines Section 15126.4(a)(3), mitigation measures are not required for effects which are not found to be significant. Furthermore, pursuant to CEQA Guidelines Section 15126.4(a)(4), there must be a nexus between the identified impact and the proposed mitigation measure, and mitigation should be “roughly proportional” to the identified impact.

Specific project-level details regarding future development under the proposed Plan are not available at this time; therefore, specific project-level and site-specific impacts related to wetland and riparian habitats are unknown. However, the regulatory requirements identified above would be applicable to future projects that would be constructed on sites containing or adjacent to wetland and riparian habitats, and would address the impacts from potential future projects with project-specific measures.

Response 2.6

The commenter provides an underline/strikeout revision to Mitigation Measure BIO-1 of the Draft EIR, modifying the breeding season dates. The commenter notes that halting project activities within nesting buffers does not mitigate for habitat loss, and additional mitigation would be necessary for the permanent removal of nesting habitat.

Based on the commenter’s suggested edits, the following revision has been made to pages 4.4-21 through 4.4-22 of the Draft EIR:

BIO-1 Pre-Construction Nesting Bird Surveys

To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) (February 1 through August 31). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than three days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

The changes reflected above would not result in substantial alterations to the degree of impact or conclusions presented in the Draft EIR, and therefore do not constitute significant new information that would trigger Draft EIR recirculation under CEQA *Guidelines* Section 15088.5. Rather, the changes serve to clarify and strengthen the content of the Draft EIR.

This mitigation measure is intended to reduce potential impacts from future development projects to nesting birds and is not intended to mitigate impacts related to habitat loss. As discussed under Impact BIO-1 of the Draft EIR, beginning on page 4.4-19, potential impacts to sensitive natural communities would be less than significant and mitigation is not required. Impacts to vegetation that is not sensitive would also be less than significant, because these communities are widespread and abundant in the region and would not be substantially diminished by projects in the City implemented under the proposed Plan.

Response 2.7

The commenter asserts that information in CEQA documents must be incorporated into a database for supplemental environmental determinations (PRC 21003[e]). The commenter requests that California Natural Diversity Database Field Survey Forms are submitted if special-status species are detected, with the City ensuring proper submittal of the form.

This comment is noted. The Draft EIR, Administrative Record, and related documents will be maintained by the City, as required. The commenter's request is acknowledged and will be presented for review and consideration by the City's decision-making body. Since this comment does not raise specific environmental concerns about the Draft EIR or the proposed Plan, no further response is required.

Response 2.8

The commenter provides an attached MMRP with suggested mitigation measures and recommendations. The commenter states that the project would be required to pay CDFW fees upon filing the Notice of Determination for the project.

Please refer to Response 2.3 through Response 2.6 regarding the commenter's proposed mitigation measures. The MMRP will include all mitigation measures from the Draft EIR, as well as any revisions determined to be necessary in this Final EIR.

Filing fees will be paid upon filing of the Notice of Determination, as required by law. Pursuant to CEQA Guidelines Section 15088(b), written responses will be provided to public agencies that commented on the Draft EIR at least 10 days prior to certification of the EIR.

Amendments to the Draft EIR

The following pages provide a summary record of all proposed text amendments to the Draft EIR. Most amendments are the result of comments received during the public review period, and directly respond to those comments, or correction of typographical errors within the Draft EIR. These amendments serve as clarifications and amplifications on the content of the Draft EIR. None of the changes would warrant recirculation of the EIR pursuant to CEQA Guidelines Section 15088.5. The amendments serve to clarify and strengthen the content of the EIR, but do not introduce significant new information.

Changes in text are signified by strikeouts (~~strikeouts~~) where text is removed and by underlined font (underline font) where text is added.

Executive Summary

Page ES-12 to ES-13:

Impact	Mitigation Measure	Significance After Mitigation
Biological Resources		
<p>Impact BIO-1: Development carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat. Impacts would be less than significant with mitigation.</p>	<p>MM-BIO-1 Pre-Construction Nesting Bird Surveys</p> <p>To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, <u>February 15 through September 15 (as early as January 1 for some raptors)</u> (February 1 through August 31). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.</p> <p>If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.</p>	<p>Implementation of Mitigation Measure BIO-1 would reduce potential impacts to nesting birds and associated habitat to a less than significant level by requiring pre-construction surveys and avoidance measures.</p>

Section 4.4, Biological Resources

Page 4.4-18:

Palmdale Native Desert Vegetation Ordinance

PMC Chapter 14.04, Joshua Tree and Native Desert Vegetation Preservation, establishes regulations and standards to preserve desert vegetation in the City. This ordinance is designed to protect western Joshua trees and California Junipers in the City. Joshua Trees and California Junipers both provide a unique natural desert aesthetic to the community, which the City aims to maintain. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission's vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the Palmdale Municipal Code. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW.

Page 4.4-21 to 4.4-22:

BIO-1 Pre-Construction Nesting Bird Surveys

To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) (~~February 1 through August 31~~). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than three days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

Page 4.4-26:

PMC Chapter 14.04 prohibits the removal of any desert vegetation unless a native desert vegetation removal permit has been issued from the City. Section 14.04.040 protects desert vegetation and allows for its removal only if it creates an imminent threat to public health or safety. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission's vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the PMC. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW. Development carried out under the proposed Plan would be required to adhere to City ordinances and CDFW requirements protecting desert vegetation such as Joshua Trees, which would ensure that such vegetation is not damaged or removed unless properly permitted.

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City of Palmdale 2045 General Plan Update Final Environmental Impact Report

Findings of Fact and Statement of Overriding Considerations

prepared by

City of Palmdale

Department of Economic and Community Development

38250 Sierra Highway

Palmdale, California 93550

Contact: Megan Taggart, Planning Manager

prepared with the assistance of

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180 North Ashwood Avenue

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August 2022



RINCON CONSULTANTS, INC.

Environmental Scientists | Planners | Engineers

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1 Introduction

A Draft Environmental Impact Report (DEIR) was prepared for the 2045 General Plan (project), was made available for public review on July 14, 2022, and was distributed to local and State agencies. Copies of the Notice of Availability of the Draft EIR were mailed to a list of interested parties, groups and public agencies. The Draft EIR and an announcement of its availability were posted electronically on the project website at (<https://www.palmdale2045.org/>) and at the following locations:

- City of Palmdale Planning Division, 38250 Sierra Highway, Palmdale, CA 93550
- City Hall Counter, 38300 Sierra Highway, Palmdale, CA 93550
- Palmdale City Library, 700 East Palmdale Boulevard, Palmdale, CA 93550
- City of Palmdale Department of Parks and Recreation, 827 East Avenue Q-9 Palmdale, CA 93550

The public review period for the Draft EIR ran from Thursday July 14, 2022, to Monday August 29, 2022. The public was encouraged to submit written comments to Megan Taggart, Planning Manager, City of Palmdale Planning Division, 38250 Sierra Highway, Palmdale, CA 93550 no later than 5:00 p.m. on August 29, 2022.

After close of the Draft EIR public review and comment period, a Final EIR consisting of responses to comments and changes to the Draft EIR was prepared for the City of Palmdale Planning Commission's September 8, 2022, public hearing at which the Planning Commission is expected to prepare a recommendation to the Palmdale City Council regarding certification of the Final EIR and action on the project. On September 21, 2022, the City Council, at a public hearing, is expected to decide on the certification of the Final EIR and to approval of the requested project entitlements. Both public hearings will be simultaneously held virtually and in person.

The Findings of Fact (Findings) and Statement of Overriding Considerations (SOC) presented herein address the environmental effects associated with the project that are described and analyzed within the Final EIR, reflect the Council's determinations about feasible mitigation measures, and the adequacy of the Final EIR. These Findings have been made pursuant to the California Environmental Quality Act (CEQA; California Public Resources Code Section 21000 et seq.), specifically Public Resources code Section 21081 and 21081.6, as well as the CEQA Guidelines (14 CCR 15000 et seq.) Sections 15091 and 15093.

Public Resources Code Section 21081 and CEQA Guidelines Section 15091 require that the City of Palmdale (City), as the Lead Agency for this project, prepare written findings for any identified significant environmental effects along with a brief explanation of the rationale for each finding. Specific findings under CEQA Guidelines Section 15091(a) are:

- (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR.
- (2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
- (3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Further, in accordance with Public Resources Code Section 21081 and CEQA Guidelines Section 15093, whenever significant effects cannot be mitigated to below a level of significance, the City as the decision-making agency is required to balance, as applicable, the benefits of the project against its unavoidable environmental risks when determining whether to approve the project. If the benefits of a project outweigh the unavoidable adverse environmental effects, the adverse effects may be considered “acceptable,” in which case the lead agency must adopt a formal statement of overriding considerations.

The Final EIR identified potentially significant environmental effects that could result from the project but could be reduced to a less-than-significant level through implementation of mitigation measures. Those effects were related to biological resources (impacts related to special status species, particularly nesting birds and their habitat), cultural resources (impacts on historical resources and archaeological resources), geology and soils (paleontological impacts), and noise (impacts related to project construction vibration). Significant and unavoidable (unmitigable) cumulative impacts associated with air quality (impacts related to construction and operational emissions) and utilities and service systems (potential for impacts on water supply and wastewater) were identified due to lack of feasible mitigation measures, and thus a statement of overriding considerations is required.

2 Project Description

The project is an update of the City of Palmdale General Plan entitled Palmdale 2045– A Complete Community (Palmdale 2045, the Plan, or proposed Plan). The actions that make up the proposed Plan are described below.

The proposed Plan is a comprehensive update of the City’s General Plan, the guiding document for the future of Palmdale over 23 years (2022-2045). The General Plan serves as the City’s primary guide for land use and development decisions and is a key tool for influencing and improving the quality of life for residents and businesses. As such, it serves as the “blueprint” for future development and conservation of the community. The Plan will help the City plan for important community issues such as new growth, housing and infrastructure needs, and environmental protection. It also sets the stage for future social, physical, and economic development of the City. It addresses issues that impact the entire community, such as how land is used, where buildings are constructed, and the location of infrastructure. The Planning Area for the proposed project includes the land within Palmdale’s City Limits, Sphere of Influence (SOI), and several unincorporated Los Angeles County ‘islands,’ as further described in Section 2.2, Project Location of the EIR.

3 Project Objectives

Palmdale 2045 is intended to function as a policy document to guide land use decisions in the City’s Planning Area over 23 years (2022-2045). According to State law, General Plans are required to cover nine topics: land use, circulation, housing, conservation, open space, noise, air quality, safety, and environmental justice. Jurisdictions may address these topics across different chapters, or elements, of their general plan, and include any other topic that is relevant to planning its future. Palmdale 2045 includes the State required topics and also addresses the following additional topics either as stand-alone elements or incorporated in other elements: community design, economic development, military compatibility, parks, natural and cultural resources, infrastructure and community facilities, sustainability and climate action.

Palmdale 2045's vision for the City was developed with extensive community input and in recognition of the State's planning priorities. Palmdale 2045 focuses on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Palmdale 2045's vision for the future includes the following vision themes.

- **Unified and welcoming community.** The Palmdale community values opportunity, diversity, and unity, and seeks to promote Palmdale's positive reputation while boosting community beautification
- **Active and vibrant downtown.** Palmdale residents desire a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale
- **Diverse and high-quality job options.** Palmdale seeks to retain and expand its employment base through training for key industries, connecting residents to local jobs, and promoting telecommuting within the City
- **Diverse and resilient local economy.** Palmdale values its existing aerospace presence and aims to leverage and diversify new economic opportunities from expanded transportation connections
- **Safe, healthy place to live and work.** Palmdale residents want to address crime and safety, increase access to parks and open space, and support marginalized communities like foster youth and those experiencing homelessness
- **High quality medical and mental healthcare.** As a medical provider shortage area, Palmdale seeks to improve access to quality medical and mental healthcare services and facilities by attracting physicians, maintaining the Palmdale Regional Medical Center, and expanding services
- **Housing options for residents at different stages of life and ability.** The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the City that support residents of all abilities through different stages of life
- **High quality and accessible educational opportunities.** Citizens of Palmdale seek to promote and expand educational opportunities in the City including higher education, trade school, and formal and informal training programs
- **Beautiful natural setting.** The Palmdale community values its natural setting and seeks to improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky
- **Forefront of transportation innovations.** On the cusp of major regional transportation improvements, Palmdale seeks to leverage planned investments and improve local transit opportunities
- **General Plan implementation.** Residents of Palmdale value the long-term vision of the General Plan Update and desire regular review and update of the Plan including metrics for tracking implementation

Palmdale 2045 identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. These strategies will support existing and future employees, businesses, and residents by improving quality of life in Palmdale.

The following actions will also be taken by the City in connection with the General Plan Update, are considered part of the proposed project, and were analyzed in the EIR:

- Adoption and implementation of the General Plan Update (Palmdale 2045 Plan)
- Adoption and implementation of the Climate Action Plan
- Adoption and implementation of the Comprehensive Zoning Ordinance Amendment
- A slight expansion of the boundary of the Palmdale Transit Area Specific Plan. Currently, many of the parcels along the external boundary of this Specific Plan area have split zoning because they are partly inside and partly outside the Specific Plan area. This proposed expansion would fully include these parcels within the Specific Plan area. Because the Specific Plan area is in the core of the City, this action would not affect the Planning Area of the proposed General Plan Update or require annexations.

Palmdale 2045 also includes an update of the City's Housing Element, in compliance with the requirements of State Housing Element law, which required the City to adopt an updated Housing Element by October 2021. A description of City actions taken to date in connection with the Housing Element Update is included in Section 2.3.2 of the EIR. While an Addendum was prepared for the Housing Element Update, the Housing Element Update is also analyzed in this EIR, as necessary, in the context of the overall Plan. The Housing Element Update will be readopted as part of the Plan after certification by the California Department of Housing and Community Development (HCD).

4 Findings of Fact

Having received, reviewed, and considered the information in the Final EIR for this project, as well as the supporting administrative record, the City of Palmdale makes findings pursuant to, and in accordance with, Sections 21081, 21081.5, and 21081.6 of the Public Resources Code.

4.1 Environmental Effects Found Not to be Significant

Through project scoping and the environmental analysis contained within the Final EIR, it was determined that the project would not result in potentially significant effects on the environment with respect to aesthetics, agricultural and forestry resources, energy, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, transportation, and wildfire. No further findings are required for these subject areas.

4.2 Findings for Significant but Mitigated Effects

The following findings are hereby made by the City of Palmdale Council for the significant but mitigable environmental effects identified in the EIR related to biological resources (impacts related to special status species, particularly nesting birds and their habitat), cultural resources (impacts on historical resources and archaeological resources), geology and soils (paleontological impacts), and noise (impacts related to project construction vibration).

Biological Resources

Impact BIO-1: Development carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat. Impacts would be less than significant with mitigation.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Implementation of Mitigation Measure BIO-1 would reduce potential impacts to nesting birds and associated habitat to a less than significant level by requiring pre-construction surveys and avoidance measures.

Explanation:

Implementation of the Plans' goals and policies would ensure that projects carried out under the Plan would be completed in accordance with protecting and preserving Significant Ecological Areas. While these goals and policies generally aim at protecting special-status species, if vegetation and trees are to be trimmed or removed during project construction or if construction would occur near trees and vegetation, nesting birds could be impacted. Mitigation Measure BIO-1 would be required for projects where mature trees and other habitat are present and construction activities are scheduled from early spring to late summer. With implementation of Plan goals and policies and Mitigation Measure BIO-1, potential impacts to special-status species and sensitive habitat would be reduced to a less than significant level.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

BIO-1 **Pre-Construction Nesting Bird Surveys.** To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

Impact BIO-3: Development carried out under the Plan would avoid impacts to wildlife movement corridors by conserving natural areas in the Planning Area, as directed by policies in the Plan. Impacts would be less than significant.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). With implementation of Mitigation Measure BIO-1, impacts to wildlife corridors and species would be less than significant.

Explanation:

Development carried out under the Plan would not impact any established wildlife corridors, and with implementation of Mitigation Measure BIO-1 to prevent impacts to migrating and nesting birds, the Plan would not interfere substantially with the movement of wildlife species. Impacts would be less than significant with mitigation.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

BIO-1 See Mitigation Measure BIO-1 above.

Cultural Resources

Impact CUL-1: The Plan may cause a significant impact to historical resources because site preparation, demolition, and construction associated with development carried out under the plan may cause substantial adverse changes in the significance of a historical resource. However, implementation of Plan policies and implementation actions included in the Conservation Element and Mitigation Measure CUL-1 would reduce this impact less than significant.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Implementation of Mitigation Measure CUL-1 would reduce impacts to historical resources by identifying and evaluating significant historical resources and managing relocation, rehabilitation, or alteration in compliance with the Standards as applicable. HABS documentation would also reduce these impacts to the greatest extent feasible in cases where compliance with the Standards or avoidance is not possible. Therefore, impacts would be less than significant with implementation of Plan policies and Mitigation Measure CUL-1.

Explanation:

Implementation of Mitigation Measure CUL-1 would reduce impacts to historical resources by identifying and evaluating significant historical resources and managing relocation, rehabilitation, or alteration in compliance with the Standards as applicable HABS documentation would also reduce these impacts to the greatest extent feasible in cases where compliance with the Standards or avoidance is not possible. Therefore, impacts would be less than significant with implementation of Plan policies and Mitigation Measure CUL-1.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

CUL-1 **Historical Resources.** A historical resources evaluation shall be prepared for all discretionary projects carried out under the Plan involving a property which includes buildings, structures, objects, sites, landscape/site plans, or other features that are 45 years of age or older. The evaluation shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior’s Professional Qualifications Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed development site. All structures 45 years of age or older shall be evaluated within their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the City for review and concurrence. If the property is already listed in the NRHP, CRHR, or as a Landmark in Palmdale, the historical resources evaluation described above shall not be required.

If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, the historical resources evaluation report shall also identify and specify the treatment of character-defining features and construction activities.

Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior’s Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of any permits.

If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The report shall comply with the Secretary of the Interior’s Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and be submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.

Impact CUL-2: The Plan may cause a significant impact if ground disturbance associated with development carried out under the Plan would cause a substantial adverse change in

the significance of an archaeological resource, including those that qualify as historical resources. This impact would be significant but mitigable.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Implementation of mitigation measures CUL-2 through CUL-8 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery of archaeological resources that may be impacted by future projects in a timely manner.

Explanation:

Implementation of Mitigation Measures CUL-2 through CUL-8 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery archeological resources that may be impacted by future projects in a timely manner.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

CUL-2 Phase I Archaeological Resources Study. For any project carried out under the General Plan Update, the City and/or project applicant shall investigate the potential to disturb archaeological resources. If the project will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial fill) a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983). If a project would solely involve the refurbishment of an existing building and no ground disturbance would occur, this measure would not be required. The Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether archaeological resources may be present. Archival research shall include a records search of the South Central Coastal Information Center no more than two years old and a Sacred Lands File search with the NAHC. The Phase I technical report documenting the study shall include recommendations that must be implemented prior to and/or during construction to avoid or reduce impacts on archaeological resources. The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase I technical report shall be made Conditions of Approval and shall be implemented throughout all ground disturbance activities.

CUL-3 Extended Phase 1 Testing. For any projects proposed within 100 feet of a known archaeological site and/or in areas identified as sensitive by a Phase I study [Mitigation Measure CUL-2], the project applicant shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. XPI testing should comprise a series of shovel test pits and/or hand augured units and/or mechanical trenching to establish the boundaries of archaeological site(s) on the project site. If the boundaries of the archaeological site are already well understood from previous archaeological work, an XPI

will not be required. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).

All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations contained therein shall be implemented for all ground disturbance activities.

CUL-4 Archaeological Site Avoidance. Any identified archaeological sites (determined after implementing mitigation measures CUL-2 and/or CUL-3) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging shall be placed between the work location and any resources within 60 feet of a work location to minimize the potential for inadvertent impacts.

CUL-5 Phase II Site Evaluation. If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, the qualified archaeologist shall conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for the CRHR or qualify as unique archaeological resources. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).

A Phase II evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation will characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains.

If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-2) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase II report shall be implemented for all ground disturbance activities

CUL-6 Phase III Data Recovery. Should the results of the Phase II site evaluation (Mitigation Measure CUL-5) yield resources that meet CRHR significance standards and if the resource cannot be avoided by project construction in accordance with CUL-4, the project applicant shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and approved by the City of Palmdale prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust the

data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI PQS for archaeology according to a research design reviewed and approved by the City of Palmdale prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). If applicable, a Native American monitor shall be present.

As applicable, the final Phase III Data Recovery reports shall be submitted to the City of Palmdale prior to issuance of any grading or construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities.

CUL-7 Cultural Resources Monitoring. If recommended by Phase I, XPI, Phase II, or Phase III studies [mitigation measures CUL-2, CUL-3, CUL-5, and/or CUL-6], the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, mitigation measures CUL-4 through CUL-6 shall be implemented, as appropriate.

CUL-8 Unanticipated Discovery of Archaeological Resources. If archaeological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project archaeologist meeting the SOI's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities

Geology and Soils

Impact GEO-6: Impacts to unique paleontological resources or unique geological features would be less than significant with mitigation.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to less than significant levels by ensuring the avoidance of paleontological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery paleontological resources that may be impacted by future projects in a timely manner.

Explanation:

Implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to less than significant levels by ensuring the avoidance of paleontological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery paleontological resources that may be impacted by future projects in a timely manner.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measure has been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

GEO-1 Unanticipated Discovery of Paleontological Resources. If paleontological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project paleontologist shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and paleontological testing. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.

Noise

Impact N-2: Construction of individual projects carried out under the Plan could temporarily generate groundborne vibration, potentially affecting adjacent sensitive land uses. This impact would be less than significant with mitigation.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Avoiding the use of vibratory rollers within 50 feet of fragile buildings would prevent potential structural damage from vibration. In addition, appropriate scheduling of construction activities and notification of neighbors would minimize disturbance of people from use of vibration-generating equipment. Compliance with the vibration control and notification measures in Mitigation Measure N-1 would reduce impacts to a less than significant level.

Explanation:

Avoiding the use of vibratory rollers within 50 feet of fragile buildings would prevent potential structural damage from vibration. In addition, appropriate scheduling of construction activities and notification of neighbors would minimize disturbance of people from use of vibration-generating equipment. Compliance with the vibration control and notification measures in Mitigation Measure N-1 would reduce impacts to a less than significant level.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

NOI-1 Construction Vibration Control Measures. The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval, as applicable, for construction projects carried out under the Plan within 50 feet of fragile buildings as defined in this mitigation measure:

1. Avoid the use of vibratory rollers within 50 feet of fragile buildings, which are buildings that are susceptible to damage from vibration as determined by the Palmdale Planning Department.

2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration (FTA 2006).
3. Notify neighbors of scheduled construction activities that would generate vibration.

Tribal Cultural Resources

Impact TCR-1: Development carried out under the Plan may impact unidentified tribal cultural resources, but these impacts would be reduced to a less than significant level with incorporation of mitigation measures MM-TCR-1 and MM- TCR-2.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Implementation of mitigation measures CUL-2 through CUL-8 in Section 4.5 Cultural Resources, and TCR-1 and TCR-2 would reduce impacts to archaeological and tribal cultural resources to less than significant levels by ensuring the avoidance of archeological and tribal cultural resources to the extent feasible, or by identifying, evaluating, and conducting data recovery of archaeological and tribal cultural resources that may be impacted by future projects in a timely manner.

Explanation:

Implementation of mitigation measures CUL-2 through CUL-8 in Section 4.5 *Cultural Resources*, and TCR-1 and TCR-2 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery archaeological resources that may be impacted by future projects in a timely manner.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

TCR-1 Native American Monitoring. Prior to the issuance of a grading permit for a project under the Plan, the City of Palmdale (City) shall ensure that the project applicant seeks the services of a tribal monitor(s) approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities. This provision shall be included on the proposed project contractor's plans and specifications. Ground-disturbing activities are defined by the relevant tribes as activities that may include but are not limited to pavement removal, pot-holing or using an auger, grubbing, tree removals, borings, grading, excavation, drilling, and/or trenching within the project area. The project site shall be made accessible to the monitor(s), provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance.

If evidence of tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource in consultation with a qualified archaeologist. The recovery process shall not unreasonably

delay the construction process and must be carried out consistent with CEQA and local regulations.

Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether or not a monitor is present on site. The monitor shall complete daily monitoring logs that will provide descriptions of the day's activities and general observations and whether the Native American monitor believes they observed a TCR and what action they took. The on-site monitoring shall end when the project site grading and excavation activities are completed or prior to the completion if the monitor has indicated that the site has a low potential for tribal cultural resources.

TCR-2

Unanticipated Discovery of Tribal Cultural Resources. Upon discovery of any tribal cultural resources, the Native American monitor has the ability to halt construction activities in the immediate vicinity (within 50 feet) of the find until the find can be assessed. All tribal cultural resources unearthed during project construction activities shall be evaluated by the Native American monitor approved by the relevant tribes and a qualified archaeologist. Construction work shall be permitted to continue on other parts of the project site while evaluation and, if necessary, additional investigations and/or preservation measures take place (CEQA Guidelines Section 15064.5(f)). If the resources are Native American in origin, the relevant tribes shall coordinate with the landowner regarding treatment and curation of these resources. If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available through coordination between the relevant tribes and the project applicant. The treatment plan established for the resources shall be in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5(f) for historical resources and Public Resources Code (PRC) Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.

4.3 Findings for Significant and Unavoidable Effects

Public Resources Code 21081 and 21081.5, and CEQA Guidelines Section 15093, require that the City of Palmdale balance the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental effects when determining to approve a project. And if specific economic, legal, social, technological, or other benefits outweigh the unavoidable adverse environmental effects, the adverse effects may be considered "acceptable."

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (CEQA Guidelines Section 15065[a][3]). Significant and unavoidable impacts associated with air quality (impacts related to construction and operational emissions) and utilities and service systems (potential for impacts on water supply and wastewater) were identified for the project. The following findings and statement of overriding considerations outlines the specific reasons to support the City of Palmdale Planning Division recommendation for approval.

Air Quality

Significant and Unavoidable Cumulative Impact AQ-1: Individual development projects carried out under the Plan would generate construction and operational-related emissions. Such emissions may conflict with or obstruct the implementation of the AVAQMD's Ozone Attainment Plan. Implementation of Plan policies, compliance with existing regulations, and implementation of mitigation would reduce construction and operational emissions, but not below applicable emissions thresholds. Impacts would be significant and unavoidable.

Mitigation Measures:

There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan. However, the Plan itself would not obstruct the implementation of air quality plans.

Finding:

Individual development projects carried out under the Plan would generate construction and operational-related emissions. Such emissions may conflict with or obstruct the implementation of the AVAQMD's Ozone Attainment Plan because population growth associated with the Plan would exceed SCAG population growth forecasts, and the project would therefore be inconsistent with the underlying assumptions of the emissions forecasts contained in the Ozone Attainment Plan. Implementation of Plan policies, compliance with existing regulations, and implementation of mitigation would reduce construction and operational emissions, but not below applicable emissions thresholds because growth associated with the Plan would still exceed SCAG population growth forecasts. There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan, even though the Plan itself would not obstruct the implementation of the air quality plan.

Facts in Support of Finding

Population growth associated with the Plan would exceed SCAG population growth forecasts, and the project would therefore be inconsistent with the underlying assumptions of the emissions forecasts contained in the Ozone Attainment Plan. There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan.

Significance after Mitigation

There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan, even though the Plan itself would not obstruct the implementation of the air quality plan. Therefore, impacts remain significant and unavoidable.

Significant and Unavoidable Cumulative Impact AQ-2: Individual development projects facilitated by the Plan would generate construction and operational emissions. Such emissions may result in adverse impacts to local air quality. Implementation of Plan policies and compliance with existing regulations would reduce emissions, but not below applicable levels of significance. Impacts would be significant and unavoidable.

Mitigation Measures:

AQ-1 Architectural Coating. The City shall require that the following measures be implemented for all projects where unmitigated ROG impacts exceed regulatory thresholds. Implementation of these measures shall ensure that ROG emissions are reduced to below 137 lbs/day during construction activities.

- Project contractors shall use architectural coating materials that are zero-emission or has a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the City shall perform periodic site inspections during construction to verify compliance; and/or,
- All architectural coating phases shall be extended such that ROG emissions are reduced to below 137 lbs/day.

AQ-2

Operational Emissions Reductions. The City shall require that some or all of the following measures be implemented for individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. Applicable measures shall be incorporated such that emissions are fully reduced to below regulatory thresholds or the greatest extent feasible. The reduction measures include, but are not limited to, the following:

- Architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, the coating with the lowest ROG rating available shall be used
- Require new development to exceed the applicable Title 24 energy-efficiency requirements
- Projects shall incorporate outdoor electrical outlets such that 10 percent of outdoor landscaping equipment can be electrically powered
- All dock doors shall be equipped with electric plugs for electric TRUs
- Installation of electric vehicle charging stations at three percent beyond those required by State and local codes
- Provide infrastructure to allow for future electric vehicle charging stations for a minimum of 10 percent of the parking spaces beyond those already required to accommodate electric vehicle charging stations
- Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment
- Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet
- Provision of dedicated parking for carpools, vanpool, and clean air vehicles
- Provision of vanpool and/or shuttle service for employees
- Implementation of reduced parking minimum requirements
- Implementation of maximum parking limits
- Provision of bicycle parking facilities beyond those required by State and local codes
- Provision of a bicycle-share program
- Expansion of bicycle routes/lanes along the project site frontage
- Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if the project site is located along an existing transit route
- Expansion of sidewalk infrastructure along the project site frontage

- Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes
- Provision of employee lockers and showers
- Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services)
- Provision of alternative work schedule options, such as telework or reduced working days per week (e.g., 9/80 or 10/40 schedules), for employees
- Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options
- As applicable all industrial uses shall be required to enroll in U.S. EPA's SmartWay program and shall use carriers that are SmartWay carriers

Finding:

Mitigation measures identified in EIR would reduce operational and construction emissions, but not below applicable levels of significance.

Facts in Support of Finding

With incorporation of Mitigation Measure AQ-1, emissions from construction activities could be reduced to less than significant levels for the sample multi-family and industrial projects implemented under the Plan. As part of Mitigation Measure AQ-1, individual project architectural coating phases were extended as follows: Multi-family Residential from 35 days to 88 days; and industrial from 20 to 30 days. Adherence to applicable Plan policies, AVAQMD rules, and Mitigation Measure AQ-1 would reduce potential construction-related impacts to the greatest extent possible.

Incorporation of Mitigation Measure AQ-2 would reduce operational emissions. However, given the unknown nature of future development under the Plan and the extent to which the measures identified in Mitigation Measure AQ-2 would be incorporated by each project is unknown, therefore reductions from these measures cannot be quantified. Due to the level of exceedance and the uncertainty of implementation under future Plan development, even with this mitigation it is anticipated the emissions would continue to exceed regulatory thresholds. Therefore, operational impacts would remain significant and unavoidable.

Significance after Mitigation

Given the unknown specifics of each individual project, there is the potential that even with these mitigation measures, impacts from emissions from operational and construction activities would remain significant. Therefore, impacts would be significant and unavoidable.

Utilities and Service Systems

Significant and Unavoidable Cumulative Impact U-1: Development facilitated by the Plan would create additional demand for water supply and wastewater facilities, which would require the construction or relocation of new or expanded water and wastewater facilities. Sufficient water supplied by Palmdale Water District and Los Angeles County Waterworks District 40 would not be available to serve the Plan and reasonably foreseeable future development. The Plan would also exceed capacity of local wastewater treatment facilities. Impacts would be significant and unavoidable.

Mitigation Measures:

At this time, it cannot be determined with certainty whether sufficient water supply sources may be available and sufficient to accommodate the demands of anticipated growth. There are no known mitigation measures that would reduce this impact to less than significant.

Finding:

Sufficient water supplied by PWD and LACWD 40 would not be available to serve the Plan and reasonably foreseeable future development. The Plan would also exceed capacity of local wastewater treatment facilities.

Facts in Support of Finding

While development within the Planning Area would adhere to the Plan policies and water reduction requirements described above, the substantial increase in the Planning Area’s population associated with this development would result in water demand that exceeds projected supply. Adherence to Plan policies would address the potential need for additional wastewater treatment facilities, but the substantial increase in the Planning Area’s population would result in wastewater generation that could exceed capacity of existing treatment facilities.

5 Project Alternatives

Section 15126.6 of the CEQA Guidelines states the following:

“An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.”

Specific economic, legal, social, technological, mobility, or other considerations, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Where the City of Palmdale has determined that, even after the adoption of all feasible mitigation measures the project would still cause one or more significant environmental impacts that cannot be avoided or lessened to below a level of significance, the City of Palmdale must determine if there is a project alternative that is both environmentally superior and feasible. An alternative may be “infeasible” if it fails to achieve the most basic project objectives identified within the EIR. Further, “feasibility” under CEQA encompasses the desirability of the project “based on a reasonable balancing of the relevant economic, environmental, social, and technological factors” of a project (*City of Del Mar, supra*, 133 Cal.App.3d at p. 417; see also *Sequoyah Hills, supra*, 23 Cal.Ap.4th at p. 715).

The Final EIR determined that the project would have significant and unavoidable impacts associated with air quality (impacts related to construction and operational emissions) and utilities and service systems

(potential for impacts on water supply and wastewater). The alternatives analyzed in the Final EIR and described below are therefore discussed below in terms of their potential ability to avoid or reduce these impacts.

Alternative 1: No Project

The “No Project” Alternative involves continued implementation of the City’s current General Plan, the last comprehensive update of which was adopted in 1993. The No Project Alternative assumes that the proposed Plan would not be adopted and therefore future development would be carried out under the City’s existing General Plan policies and land use designations. The overall amount of growth anticipated to occur under the City’s current General Plan is less than anticipated to occur under the proposed Plan. The proposed Plan includes additional land use designations for mixed housing densities focused around the future downtown area and across Palmdale Boulevard with education and medical districts strategically distributed within the City. Therefore, it also increases the City’s total potential population and amount of commercial development compared to the current General Plan. The Plan identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. In contrast, the No Project Alternative would continue to facilitate development in the same pattern as currently seen in the Planning Area which is predominately sprawled suburban development. Implementation of the No Project Alternative would result in less new, market-driven development that would likely be spread more widely across the Planning Area and would involve less overall development and associated growth than would occur under Plan. Because development would be more dispersed under this alternative and not concentrated in identified focus areas, it would result in greater per capita VMT than the Plan.

As with the Plan, impacts to Air Quality under the No Project alternative would be significant and unavoidable. As discussed in Impact AQ-1, AQ-2, and AQ-3 in Chapter 4.3, Air Quality of the Final EIR, individual development projects carried out under the Plan would generate construction and operational-related emissions. Even with implementation of Plan policies, compliance with existing regulations, and implementation of mitigation measures, construction and operational emissions would exceed applicable emissions thresholds. The Plan would result in a cumulatively considerable net increase of criteria pollutants; however, impacts related to exposing sensitive receptors to substantial pollutant concentrations and other emissions such as odors would be less than significant. The same would be true with the No Project Alternative. Under this alternative, individual projects would be constructed and operated under the City’s current General Plan, and as such would be subject to existing General Plan policies intended to mitigate air quality impacts; however, buildout would result in significant impacts as emissions would exceed applicable thresholds. Further, buildout under the existing General Plan would result in a cumulative net increase of criteria pollutants. As with development under the Plan, development under the No Project Alternative would be subject to applicable Antelope Valley Air Quality Management District (AVAQMD) policies, and the reduced amount of construction under the No Project Alternative would result in reduced construction emissions and slightly reduced impacts to air quality under this alternative. However, impacts would remain significant and unavoidable.

The No Project Alternative would result in less development and less population increase than the Plan, which would tend to decrease demand on existing utilities and service systems, but it would not include policies from the Plan that address water supply, wastewater, and solid waste. Still, development under the No Project Alternative would tend to be more consistent with the existing demand projections of utility

service providers, and could therefore potentially reduce utilities impacts under this alternative to a level that was not significant and unavoidable.

Alternative 2: Reduced Growth

The Reduced Growth Alternative (Alternative 2) is included in the EIR to address potential growth-related impacts associated with the Plan. Although this alternative would result in less overall development than the Plan, development is assumed to occur in the same general locations as under the Plan, and be subject to the same goals, policies, and development standards as under the Plan. Implementation of the Reduced Growth Alternative would result in development within the Planning Area that would generally meet the project objectives established for the Plan, although in some cases to a lesser degree than the Plan. Further, this alternative would result in lower housing density than the Plan and thus would, overall, result in less housing and population growth.

While the Reduced Growth Alternative would result in less development overall, it would still include the same goals and policies as the Plan and could therefore still focus growth in the identified infill focus areas. Per capita Vehicle Miles Traveled (VMT) could therefore be similarly reduced compared to the Plan, at least for new development. Overall, because of its reduced total amount of development and potentially similar per capita VMT, this alternative's air quality impacts would be less than those of the Plan, but still significant and unavoidable.

The Reduced Growth Alternative would result in reduced development potential and reduced population increase and thus a decrease in demand on existing utilities and service systems. This alternative would also include Plan goals and policies related to water, wastewater, storm water drainage, electricity, and natural gas. Because of its reduced overall amount of development and continued applicability of Plan policies, this alternative would result in less demand on utilities and service systems than the Plan, although impacts on water supply and wastewater capacity may still remain significant and unavoidable because development under this alternative may still exceed the existing demand projections of utility service providers.

Environmentally Superior Alternative

When the two alternatives (No Project and Reduced Growth) are compared to each other and the Plan, the Reduced Growth Alternative would be environmentally superior because apart from greater impacts to Land Use and Planning and Transportation, it would have reduced or similar environmental impacts to the Plan, while the No Project Alternative would result in greater impacts to Biological Resources, Cultural Resources, Energy, Geology and Soils, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, Noise, Transportation and Traffic, Tribal Cultural Resources and Wildfire, with reduced impacts in Air Quality, Hydrology and Water Quality, Population and Housing, Public Services, Recreation, Utilities and Service Systems, and Wildfire.

Ability to Meet Objectives/Guiding Principles of the Plan

Even though the Reduced Growth Alternative was found to be the environmentally superior alternative, it would not fully meet the objectives/guiding principles of the 2045 General Plan. Implementation of the Reduced Growth Alternative would result in development within the Planning Area that would generally meet the project objectives established for the Plan, although in some cases to a lesser degree than the Plan. This alternative would result in lower housing density than the Plan and thus would, overall, result in less housing and population growth. However, this alternative would result in more growth in the aerospace industrial sector, similar moderate growth in other industrial sectors, and a marginally greater amount of growth in employment flex sectors (mixed use development of lighter industrial uses and more intensive service, retail, and wholesale commercial uses including R&D, small warehouses, office, and medical uses in a walkable and/or auto-accessible environment). Under this alternative, village centers would also have exclusively commercial uses as opposed to the higher density mixed use retail and residential uses

envisioned under the Plan. According to a Future Conditions report prepared by Parsons, overall employment under this alternative would be similar to the Plan while population and household growth would decrease by 2 and 4 percent respectively (Parsons 2021). As discussed in Chapter 4.14, Population and Housing of the EIR, the Plan would help the City meet its Regional Housing Needs Assessment (RHNA) allocation. The Reduced Growth Alternative would do this to a lesser degree than the Plan. The decrease in population would also result in producing fewer work-related trips within the Palmdale city limits. This would contribute to Palmdale being a net importer of commuters, thereby increasing longer commutes. Longer commutes would result in increased VMT, which would be contrary to the proposed Plan's goal of "striving to become a self-contained community."

Conclusion

For these reasons, none of the alternatives are more desirable than the 2045 General Plan in terms of meeting the City's guiding principles and objectives for the project, as outlined above under the Chapter 2, *Project Description*, of the Draft EIR. For this reason and because none of the proposed alternatives would completely avoid the project's significant impacts, none of the proposed alternatives are considered feasible.

6 Statement of Overriding Considerations

Where there are significant and unavoidable impacts from a project, pursuant to Section 15093 of the California Code of Regulations, the City of Palmdale must "balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks, when determining whether to approve the project." The record of those considerations shall include a written statement of overriding considerations that is supported by substantial evidence within the administrative record. A finding consistent with Section 15091(a)(3), that specific economic, legal, social, technological, or other consideration, make infeasible any other mitigation measures or project alternatives that would avoid or lessen this impact to below a level of significance.

The City finds and determines that, as proposed, the majority of the significant impacts of the project will be reduced to acceptable levels by implementation of mitigation measures recommended in these findings. However, the City further finds that cumulative impacts to air quality (impacts related to construction and operational emissions) and utilities and service systems (potential for impacts on water supply and wastewater) from the project are significant and unavoidable even with the implementation of mitigation (Section 4.3, *Air Quality*, and Section 4.19, *Utilities and Service Systems*, of the Final EIR). Collectively, reasonably foreseeable future development and growth in the City of Palmdale would increase ozone and criteria air pollutant emissions beyond local and state thresholds and there would be insufficient water supplies and wastewater capacity available to serve the Planning Area and reasonably foreseeable future development under the Plan. The City further finds that there are no other feasible mitigation measures or feasible project alternatives that will further mitigate, avoid, or reduce to a less-than-significant level these environmental effects.

After due consideration, and in light of the environmental, social, economic, and other considerations identified in the findings, the 2045 General Plan Update, and the record as a whole related to this project, the City chooses to approve the project because, in its independent judgement, the benefits to the project as outlined below substantially outweigh the project's significant and unavoidable adverse environmental impacts.

Benefits of the Project: The City finds that the project, as approved, will have the following economic, social, technological and environmental benefits:

- The project updates outdated policies in a manner that meets current legal requirements for General Plans.
- The project provides a more user-friendly document that will make use of the General Plan easier for decision makers, staff, and the public.
- The project reflects current community goals and preferences as identified during the public outreach process.
- The project would emphasize infill and reuse development within the City limits with a focus on increasing opportunities for housing development in key areas of the City through increased density and mixed-use projects where appropriate.
- The project would provide a well-connected transportation system that enables safe access for all transportation modes, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.
- The project would protect the natural resources and scenic assets that define Palmdale including connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky.
- The project would manage, conserve, and preserve Palmdale’s natural environment for present and future generations and promotes sustainable uses of its resources.
- The project would recognize the importance of and promote ethnic, cultural, and socio-economic diversity and equity to enhance the quality of life in Palmdale.
- The project would invigorate downtown Palmdale as a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale
- The project would address crime and safety, increase access to parks and open space, and support marginalized communities like foster youth and those experiencing homelessness.
- The project meets the objectives of the State of California in promoting affordable housing.
- The project sets forth Palmdale community values of opportunity, diversity, and unity, and seeks to promote Palmdale’s positive reputation while boosting community beautification.

In order to achieve these objectives, the 2045 General Plan Update focuses on improving how residents get around, meeting community needs with available services, providing a greater sense of identity, adding housing options by promoting higher-density development and infill, and preserving the existing supply of affordable housing. For most of the City, the 2045 General Plan Update preserves the pattern of arterial highways and established communities. Generally, new development in accordance with the 2045 General Plan Update would result in re-use of properties, conversion of properties to different uses in response to market demand, and more intense use of land in defined areas. The Plan’s vision specifically includes goals that facilitate the development of complete neighborhoods, promote high quality mixed use development that includes office employment, affordable housing and improved transit and pedestrian linkages near existing transit. New development would occur primarily where existing roads, water, and sewer are in place and in a manner that minimizes the impact of development on existing infrastructure and services.

Findings:

For each and all of these reasons, the City of Palmdale finds that the benefits of the project outweigh the significant and unavoidable environmental effect related to air quality and utilities and service systems.

Therefore, the adverse significant and unavoidable effect is considered to be acceptable by the City of Palmdale City Council, which is the decision-making body for the project, given the importance of this project to the City of Palmdale.

7 Statement of Location and Custodian of Documents

Public Resources Code Section 21081.6(a)(2) and Section 15091(e) of the California Code of Regulation requires that the City of Palmdale, as the Lead Agency, specify the location and custodian of the documents of other materials that constitute the record of proceedings upon which the decision has been based. The following location is where review of the record may be performed:

City of Palmdale
Department of Economic and Community Development- Planning Division
38250 Sierra Highway
Palmdale, California 93550

The City of Palmdale has relied on all of the documents contained within the record of proceedings in reaching its decision on the project.

8 Mitigation Monitoring and Reporting Program

As referenced above in the Findings, a MMRP has been prepared for the project and is to be adopted concurrently with these findings and statement of overriding considerations pursuant to Public Resources Code Section 21081(a)(1). The MMRP is provided as Appendix F to the Final EIR that will be used by the City of Palmdale to track compliance with the project mitigation measures, and is also shown below. The MMRP will remain available for public review during the compliance period, which includes pre-construction coordination, construction, and post-construction documentation.

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Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Air Quality							
MM-AQ-1- Architectural Coating							
<p>If a development project facilitated by the Plan would generate construction and operational emissions and such emissions may result in adverse impacts to local air quality, then these recommendations shall be implemented and incorporated in the project.</p> <p>The City shall require that the following measures be implemented for all projects where unmitigated ROG impacts exceed regulatory thresholds. Implementation of these measures shall ensure that ROG emissions are reduced to below 137 lbs/day during construction activities.</p> <ul style="list-style-type: none"> ▪ Project contractors shall use architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the City shall perform periodic site inspections during construction to verify compliance; and/or, ▪ All architectural coating phases shall be extended such that ROG emissions are reduced to below 137 lbs/day. 	<p>Confirm that the actions required under this mitigation measure are implemented for individual projects under the Plan where unmitigated ROG impacts exceed regulatory thresholds.</p>	<p>During construction</p>	<p>Periodically</p>	<p>City of Palmdale Planning Department</p>			
MM-AQ-2: Operational Emissions Reductions							
<p>If a development project facilitated by the Plan would generate construction and operational emissions and such emissions may result in adverse impacts to local air quality, then these recommendations shall be implemented and incorporated in the project.</p> <p>The City shall require that some or all of the following measures be implemented for individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. Applicable measures shall be incorporated such that emissions are fully reduced to below regulatory thresholds or the greatest extent feasible. The reduction</p>	<ol style="list-style-type: none"> 1. Confirm that some or all of the actions required under this mitigation measures are included in the design of, and made conditions approval of, individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. 2. Confirm that the actions required as conditions of approval for individual projects under the Plan are carried out during construction and incorporated into the design and operation of those projects where unmitigated criteria 	<ol style="list-style-type: none"> 1. Prior to project approval. 2. During construction and at least once before operation (for post-construction actions) 	<ol style="list-style-type: none"> 1. Once 2. Periodically 	<p>City of Palmdale Planning Department</p>			

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					Initial	Date	Comments
measures include, but are not limited to, the following:	pollutant impacts exceed regulatory thresholds.						
<ul style="list-style-type: none"> ▪ Architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, the coating with the lowest ROG rating available shall be used ▪ Require new development to exceed the applicable Title 24 energy-efficiency requirements ▪ Projects shall incorporate outdoor electrical outlets such that 10 percent of outdoor landscaping equipment can be electrically powered ▪ All dock doors shall be equipped with electric plugs for electric TRUs ▪ Installation of electric vehicle charging stations at three percent beyond those required by State and local codes ▪ Provide infrastructure to allow for future electric vehicle charging stations for a minimum of 10 percent of the parking spaces beyond those already required to accommodate electric vehicle charging stations ▪ Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment ▪ Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet ▪ Provision of dedicated parking for carpools, vanpool, and clean air vehicles ▪ Provision of vanpool and/or shuttle service for employees ▪ Implementation of reduced parking minimum requirements ▪ Implementation of maximum parking limits ▪ Provision of bicycle parking facilities beyond those required by State and local codes 							

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<ul style="list-style-type: none"> ▪ Provision of a bicycle-share program ▪ Expansion of bicycle routes/lanes along the project site frontage ▪ Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if the project site is located along an existing transit route ▪ Expansion of sidewalk infrastructure along the project site frontage ▪ Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes ▪ Provision of employee lockers and showers ▪ Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services) ▪ Provision of alternative work schedule options, such as telework or reduced working days per week (e.g., 9/80 or 10/40 schedules), for employees ▪ Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options ▪ As applicable all industrial uses shall be required to enroll in U.S. EPA’s SmartWay program and shall use carriers that are SmartWay carriers 							

Biological Resources

MM-BIO-1 Pre-Construction Nesting Bird Surveys

<p>If a development project carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat, then these recommendations shall be implemented and incorporated in the project.</p> <p>To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out</p>	<p>Confirm that the actions required under this mitigation measures are implemented for individual projects under the Plan where special-status species have the potential to be adversely affected.</p>	<p>Prior to construction activities</p>	<p>Periodically</p>	<p>City of Palmdale Planning Department</p>			
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<p>under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.</p> <p>If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist</p>							
Cultural Resources							
MM-CUL-1 Historical Resources							
A historical resources evaluation shall be prepared for all discretionary projects carried out under the Plan involving a property which includes buildings, structures, objects, sites, landscape/site plans, or other features that are	1. Confirm that a historic resources evaluation has been prepared by a qualified architectural historian or historian who meets the Secretary of the Interior’s Professional Qualifications	1. Prior to construction and grading activities	1. Once	City of Palmdale Planning Department			

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<p>45 years of age or older. The evaluation shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior’s Professional Qualifications Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed development site. All structures 45 years of age or older shall be evaluated within their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the City for review and concurrence. If the property is already listed in the NRHP, CRHR, or as a Landmark in Palmdale, the historical resources evaluation described above shall not be required.</p> <p>If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, the historical resources evaluation report shall also identify and specify the treatment of character-defining features and construction activities.</p> <p>Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior’s Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would</p>	<p>Standards (PQS) in architectural history or history, consistent with the requirements of this mitigation measure.</p> <p>2. If historical resources are identified within the project area of a proposed development, confirm that efforts are made, to the extent feasible, to ensure that impacts are mitigated, consistent with the requirements of this mitigation measure.</p> <p>3. If historical resources are identified within the project area of a proposed development, confirm that efforts have been made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior’s Standards for the Treatments of Historic Properties (Standards) and the requirements of this mitigation measure.</p> <p>4. If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, confirm that appropriate site-specific mitigation measures are established and undertaken, consistent with the requirements of this mitigation measure.</p>	<p>2. Prior to construction and grading activities</p> <p>3. Prior to construction and grading activities</p> <p>4. Prior to construction and grading activities</p>	<p>2. Once</p> <p>3. Once</p> <p>4. Once</p>				

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<p>not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of any permits.</p> <p>If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The report shall comply with the Secretary of the Interior’s Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and be submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.</p>							
MM-CUL-2 Phase 1 Archaeological Resources Study							
For any project carried out under the General Plan Update, the City and/or project applicant shall investigate the potential to disturb archaeological resources. If the project will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial	1. If any project carried out under the General Plan Update will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial fill) confirm that a Phase I cultural resources study consistent with	1. Prior to issuance of construction and grading permits	1. Once	City of Palmdale Planning Department			

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<p>fill) a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983). If a project would solely involve the refurbishment of an existing building and no ground disturbance would occur, this measure would not be required. The Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether archaeological resources may be present. Archival research shall include a records search of the South Central Coastal Information Center no more than two years old and a Sacred Lands File search with the NAHC. The Phase I technical report documenting the study shall include recommendations that must be implemented prior to and/or during construction to avoid or reduce impacts on archaeological resources. The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase I technical report shall be made Conditions of Approval and shall be implemented throughout all ground disturbance activities.</p>	<p>the requirements of this mitigation measure has been performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983), and review and approve this study.</p> <ol style="list-style-type: none"> 2. Make all recommendations of the Phase I technical report Conditions of Approval of the project. 3. Confirm that all Conditions of Approval are carried out throughout all ground disturbance activities. 	<ol style="list-style-type: none"> 2. Prior to issuance of construction and grading permits 3. During ground disturbance activities 	<ol style="list-style-type: none"> 2. Once 3. Periodically 				
MM-CUL-3 Extended Phase 1 Testing							
<p>For any projects proposed within 100 feet of a known archaeological site and/or in areas identified as sensitive by a Phase I study [Mitigation Measure CUL-2], the project applicant shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. XPI testing should comprise a series of shovel test pits and/or hand augured units and/or mechanical trenching to establish the boundaries of archaeological site(s) on the project site. If the boundaries of the archaeological site are already well understood from previous archaeological work, an XPI will</p>	<ol style="list-style-type: none"> 1. Confirm that an XPI study has been done by a qualified archaeologist retained by the project applicant if required under this mitigation measure, and review and approve the XPI. 2. Confirm that all recommendations of the XPI are carried out throughout all ground disturbance activities. 	<ol style="list-style-type: none"> 1. Prior to issuance of construction and grading permits 2. During ground disturbance activities 	<ol style="list-style-type: none"> 1. Once 2. Periodically 	City of Palmdale Planning Department			

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					Initial	Date	Comments
<p>not be required. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations contained therein shall be implemented for all ground disturbance activities.</p>							
MM-CUL-4 Archaeological Site Avoidance							
Any identified archaeological sites (determined after implementing mitigation measures CUL-2 and/or CUL-3) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging shall be placed between the work location and any resources within 60 feet of a work location to minimize the potential for inadvertent impacts.	Confirm that the avoidance measures described in this mitigation measure are being carried out during project-related construction activities.	During construction and grading activities	Periodically	City of Palmdale Planning Department			
MM-CUL-5 Phase II Site Evaluation							
If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, the qualified archaeologist shall conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for the CRHR or qualify as unique archaeological resources. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). A Phase II evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts,	1. If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, confirm that a Phase II cultural resources study consistent with the requirements of this mitigation measure has been performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983), and review and approve this study.	1. Prior to issuance of construction and grading permits	1. Once	City of Palmdale Planning Department			
	2. Make all recommendations of the Phase II technical report Conditions of Approval of the project.	2. Prior to issuance of construction and grading permits	2. Once				

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<p>collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation will characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains.</p> <p>If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-2) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase II report shall be implemented for all ground disturbance activities</p>	3. Confirm that all Conditions of Approval are carried out throughout all ground disturbance activities.	3. During ground disturbance activities	3. Periodically				
MM-CUL-6 Phase III Data Recovery							
Should the results of the Phase II site evaluation (Mitigation Measure CUL-5) yield resources that meet CRHR significance standards and if the resource cannot be avoided by project construction in accordance with CUL-4, the project applicant shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and approved by the City of	1. Confirm that any reports found to be necessary under the requirements of this mitigation measure have been submitted to, and reviewed and approved by, the City of Palmdale prior to issuance of any grading or construction permit.	1. Prior to issuance of construction and grading permits	1. Once	City of Palmdale Planning Department			
	2. Confirm that all feasible recommendations of the reports required under this mitigation measure have been	2. Prior to issuance of construction and	2. Once				

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<p>Palmdale prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI PQS for archaeology according to a research design reviewed and approved by the City of Palmdale prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). If applicable, a Native American monitor shall be present.</p> <p>As applicable, the final Phase III Data Recovery reports shall be submitted to the City of Palmdale prior to issuance of any grading or construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities.</p>	<p>incorporated into the final design of the project and approved by the City of Palmdale</p> <p>3. Confirm that all feasible recommendations of the reports required under this mitigation measure are carried out as described in this mitigation measure.</p>	<p>grading permits</p> <p>3. During construction</p>	<p>3. Periodically</p>				
MM-CUL-7 Cultural Resources Monitoring							
<p>If recommended by Phase I, XPI, Phase II, or Phase III studies [mitigation measures CUL-2, CUL-3, CUL-5, and/or CUL-6], the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, mitigation measures CUL-4 through CUL-6 shall be implemented, as appropriate.</p>	<p>Confirm that the appropriate mitigation measures have been implemented during ground-disturbing activities.</p>	<p>During construction and grading activities</p>	<p>Periodically throughout construction activities</p>	<p>City of Palmdale Planning Department</p>			
MM-CUL-8 Unanticipated Discovery of Archaeological Resource							
<p>If archaeological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project archaeologist meeting the SOI's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan</p>	<p>1. Confirm that any reports required to document and/or evaluate unanticipated discoveries have been submitted to the City of Palmdale for review and approval.</p> <p>2. Confirm that recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.</p>	<p>1. Prior to issuance of construction and grading permits</p> <p>2. During construction and grading activities</p>	<p>1. Once</p> <p>2. Periodically</p>	<p>City of Palmdale Planning Department</p>			

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<p>and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.</p>							
Geology and Soils							
MM-GEO-1 Unanticipated Discovery of Paleontological Resources							
<p>If paleontological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project paleontologist shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and paleontological testing. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.</p>	<ol style="list-style-type: none"> 1. Confirm that any reports required to document and/or evaluate unanticipated discoveries have been submitted to the City of Palmdale for review and approval. 2. Confirm that recommendations contained therein are implemented throughout the remainder of ground disturbance activities. 	<ol style="list-style-type: none"> 1. Prior to issuance of construction and grading permits 2. During construction and grading activities 	<ol style="list-style-type: none"> 1. Once 2. Periodically 	<p>City of Palmdale Planning Department</p>			
Noise							
MM-NOI-1 Construction Vibration Control Measures							
<p>The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval, as applicable, for construction projects carried out under the Plan within 50 feet of fragile buildings as defined in this mitigation measure.</p> <ol style="list-style-type: none"> 1. Avoid the use of vibratory rollers within 50 feet of fragile buildings, which are buildings that are susceptible to damage from 	<p>Confirm that the appropriate mitigation measures have been implemented.</p>	<p>Throughout construction and grading activities</p>	<p>Periodically</p>	<p>City of Palmdale Planning Department</p>			

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<p>vibration as determined by the Palmdale Planning Department.</p> <p>2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration (FTA 2006).</p> <p>3. Notify neighbors of scheduled construction activities that would generate vibration.</p>							

Tribal Cultural Resources

MM-TCR-1 Native American Monitoring

<p>Prior to the issuance of a grading permit for a project under the Plan, the City of Palmdale (City) shall ensure that the project applicant seeks the services of a tribal monitor(s) approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities. This provision shall be included on the proposed project contractor’s plans and specifications. Ground-disturbing activities are defined by the relevant tribes as activities that may include but are not limited to pavement removal, pot-holing or using an auger, grubbing, tree removals, borings, grading, excavation, drilling, and/or trenching within the project area. The project site shall be made accessible to the monitor(s), provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance.</p> <p>If evidence of tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource in consultation with a qualified archaeologist. The</p>	<p>Confirm that a tribal monitor has been approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities, consistent with the requirements of this mitigation measure</p>	<p>Prior to issuance of a grading permit for a project under the Plan</p>	<p>Once</p>	<p>City of Palmdale Planning Department</p>			
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Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
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recovery process shall not unreasonably delay the construction process and must be carried out consistent with CEQA and local regulations. Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether or not a monitor is present on site. The monitor shall complete daily monitoring logs that will provide descriptions of the day's activities and general observations and whether the Native American monitor believes they observed a TCR and what action they took. The on-site monitoring shall end when the project site grading and excavation activities are completed or prior to the completion if the monitor has indicated that the site has a low potential for tribal cultural resources.							
MM-TCR-2 Unanticipated Discovery of Tribal Cultural Resources							
Upon discovery of any tribal cultural resources, the Native American monitor has the ability to halt construction activities in the immediate vicinity (within 50 feet) of the find until the find can be assessed. All tribal cultural resources unearthed during project construction activities shall be evaluated by the Native American monitor approved by the relevant tribes and a qualified archaeologist. Construction work shall be permitted to continue on other parts of the project site while evaluation and, if necessary, additional investigations and/or preservation measures take place (CEQA Guidelines Section 15064.5(f)). If the resources are Native American in origin, the relevant tribes shall coordinate with the landowner regarding treatment and curation of these resources. If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available through coordination between the relevant tribes and the project applicant. The treatment plan established for the resources shall be in accordance with	<ol style="list-style-type: none"> 1. Upon the discovery of any tribal cultural resources, confirm construction has been halted per the Native American monitor's assessment. 2. Confirm that the avoidance measures described in this mitigation measure have been implemented 	<ol style="list-style-type: none"> 1. Upon the discovery of any tribal cultural resources 2. Throughout construction and grading activities after the discovery of any tribal cultural resource 	<ol style="list-style-type: none"> 1. Once for each occurrence 2. Periodically 	City of Palmdale Planning Department			

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California Environmental Quality Act (CEQA) Guidelines Section 15064.5(f) for historical resources and Public Resources Code (PRC) Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.							