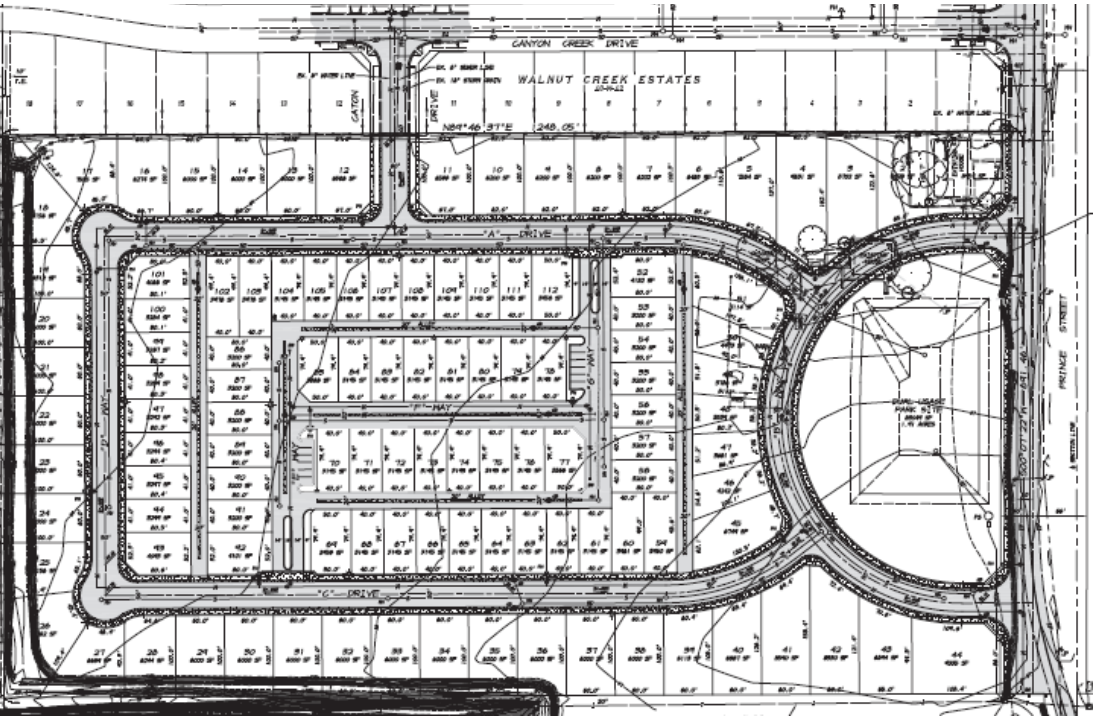
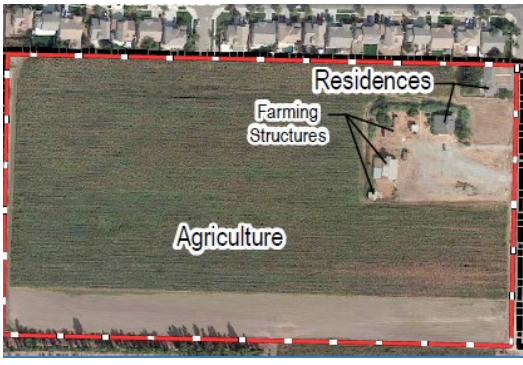
Public Review Initial Study/Mitigated Negative Declaration

Caton Ranch Annexation and Subdivision

City of Newman

January 2023





Prepared by

EMC Planning Group

PROPOSED MITIGATED NEGATIVE DECLARATION

CATON RANCH ANNEXATION AND SUBDIVISION

CITY OF NEWMAN

PREPARED FOR

City of Newman

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January 2023

PROPOSED MITIGATED NEGATIVE DECLARATION

In Compliance with the California Environmental Quality Act (CEQA)

Project Name	Caton Ranch Annexation and Subdivision
Lead Agency	City of Newman
Project Proponent	Dunkley and Simon Trusts 239 Main Street, Suite E Pleasanton, CA 94566
Project Location	29101 and 29113 Prince Street, unincorporated Stanislaus County
Project Description	The project proposes pre-zoning and annexation (including a Pre-Annexation Agreement), and a subdivision map to allow for construction of 112 low density and medium density single-family homes on the site. The project also includes a 1.91-acre dual usage park site on the eastern side of the property along with the development of various rights-of-way onsite with new water, sewer, and storm drain facilities.
Public Review Period	Begins–January 10, 2023 at 8:00 AM Ends – February 10, 2023 at 5:00 PM
Written Comments To	City Hall, Community Development Department: 938 Fresno Street, Newman, CA 95360
Proposed Findings	The City of Newman is the custodian of the documents and other material that constitute the record of proceedings upon which this decision is based. The initial study indicates that the proposed project has the potential to result in significant adverse environmental impacts. However, the mitigation measures identified in the initial study would reduce the impacts to a less than significant level. There is no substantial evidence, in light of the whole record before the lead agency, City of Newman, that the project, with mitigation measures incorporated, may have a significant effect on the environment. See the following project-specific mitigation measures:

Mitigation Measures

Agricultural Resources

AG-1 Prior to recordation of a final map, the project developer shall illustrate on the final map and improvement plans a concrete masonry unit wall along the southern boundary of the project site. The Public Works Department shall review and approve the material and design of the wall.

Air Quality

AQ-1 The following measure shall be included on all grading and construction documents:

All mobile diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days continuously shall meet, at a minimum, US EPA particulate matter emissions standards for Tier 2 engines or equivalent.

Biological Resources

BIO-1 The U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011) shall be implemented prior to initiation of and during any construction activity on the project site to avoid unintended take of individual San Joaquin kit foxes.

Preconstruction/pre-activity surveys for San Joaquin kit fox shall be conducted no less than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity that may impact San Joaquin kit fox. The surveys shall include all work areas and a minimum 200-foot buffer of the project site. The preconstruction surveys shall identify kit fox habitat features on the project site, evaluate use by kit fox and, if possible, assess the potential impacts of the proposed activity. The status of all dens shall be determined and mapped.

If a natal/pupping den is discovered within the project area or within 200 feet of the project boundary, the applicant shall consult with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service to establish an appropriate avoidance buffer. The avoidance buffer shall be maintained until such time as the burrow is no longer active and/or an incidental take permit is determined to be required and is obtained.

In addition, the following measures shall be observed:

a. Project-related vehicles shall observe a 20-mph speed limit in all project areas; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction shall be minimized. Off-road traffic outside of designated project area shall be prohibited.

b. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more

escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 11 of the Construction and Operational Requirements in the Standardized Recommendations must be followed.

c. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the U.S. Fish and Wildlife Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

d. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or project site.

e. No firearms shall be allowed on the project site during construction activities.

f. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets shall be permitted on site during construction activities.

g. Use of rodenticides and herbicides on the project site during construction shall be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the U.S. Fish and Wildlife Service. If rodent control must be conducted, zinc phosphide shall be used because of proven lower risk to kit fox.

h. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape.

i. Any contractor, employee, or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service.

j. The applicant shall submit weekly reports on construction monitoring activities to the City of Newman Community Development Department. An occupancy permit shall not be issued without receipt of the weekly reports.

BIO-2 To avoid loss of or harm to burrowing owl, the following measures shall be implemented:

a. Prior to issuance of a grading permit, and to avoid/minimize impacts to burrowing owls potentially occurring within the project site, the applicant shall retain a biologist qualified in ornithology to conduct surveys for burrowing owl. The qualified biologist shall conduct a two-visit (i.e., morning and evening) presence/absence survey at areas of suitable habitat on and adjacent to the project site boundary no less than 14 days prior to the start of construction or ground disturbance activities. Surveys shall be conducted according to the methods for take avoidance described in the Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC 1993) and the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If no burrowing owls are found, a letter report confirming absence shall be prepared and submitted to the City of Newman Community Development Department and no further measures are required.

b. Because burrowing owls occupy habitat year-round, seasonal no-disturbance buffers, as outlined in the Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC 1993) and the Staff Report on Burrowing Owl Mitigation (CDFW 2012), shall be in place around occupied habitat prior to and during any ground disturbance activities. The following table includes buffer areas based on the time of year and level of disturbance (CDFW 2012), unless a qualified biologist approved by the California Department of Fish and Wildlife verifies through non-invasive measures that either: 1) birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Location	**Time of Year**	**Level of Disturbance Buffers (meters)**		
		Low	**Med**	**High**
Nesting Sites	April 1 – Aug 15	200 m	500 m	500 m
Nesting Sites	Aug 16 – Oct 15	200 m	200 m	500 m
Nesting Sites	Oct 16 – Mar 31	50 m	100 m	500 m

c. If burrowing owl is found and avoidance is not possible, burrow exclusion may be conducted by qualified biologists only during the non-breeding season, before breeding behavior is exhibited and after the burrow is

confirmed empty through non-invasive methods, such as surveillance. Occupied burrows shall be replaced with artificial burrows at a ratio of one collapsed burrow to one constructed artificial burrow (1:1). Evicted burrowing owls may attempt to colonize or re-colonize an area that would be impacted, thus ongoing surveillance during project activities shall be conducted at a rate sufficient to detect burrowing owls if they return.

d. If surveys locate occupied burrows in or near construction areas, consultation with the California Department of Fish and Wildlife shall occur to interpret survey results and develop a project-specific avoidance and minimization approach. Once the absence of burrowing owl has been confirmed, a letter report shall be prepared and submitted to the City of Newman Community Development Department.

BIO-3 The following measures shall be implemented to avoid loss of or harm to Swainson's hawk and other raptors:

a. Tree and vegetation removal shall be completed during the nonbreeding season for raptors (September 16–January 31).

b. To avoid, minimize, and mitigate potential impacts on Swainson's hawk and other raptors nesting on or adjacent to the project site, retain a qualified biologist to conduct preconstruction surveys and identify active nests on and within 0.5 mile of the project site for construction activities conducted during the breeding season (February 1–September 15). The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction. Guidelines, provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (Swainson's Hawk Technical Advisory Committee 2000) or updated, current guidance, shall be followed for surveys for Swainson's hawk. If no nests are found, a report documenting the results of the survey shall be submitted to the City of Newman Community Development Department and no further mitigation will be required.

c. Impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. No project activity shall commence within the buffer areas until a qualified biologist has determined, in coordination with California Department of Fish and Wildlife, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. California Department of Fish and Wildlife guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers for Swainson's hawk nests, but the size of the buffer may be decreased if a qualified biologist, in consultation with California Department of Fish and Wildlife, determine that such an adjustment would not be likely to adversely affect the nest.

d. The appropriate no-disturbance buffer for other raptor nests (i.e., species other than Swainson's hawk) shall be determined by a qualified biologist based on site-specific conditions, the species of nesting bird, nature of the project activity, visibility of the disturbance from the nest site, and other relevant circumstances.

e. Monitoring of all active raptor nests by a qualified biologist during construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined appropriate by a qualified biologist.

BIO-4 If there is an active nest within ten miles of the project site, the following measures shall be implemented to mitigate for the loss of Swainson's hawk foraging habitat:

a. Prior to ground-disturbing activities, suitable Swainson's hawk foraging habitat shall be preserved to ensure replacement of foraging habitat lost as a result of the project, as determined by a qualified biologist, in consultation with California Department of Fish and Wildlife.

b. The habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within Stanislaus County. The mitigation ratio shall be consistent with the guidelines included in the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California (CDFG 1994). These guidelines specify that the mitigation ratio shall be 1:1 if there is an active nest within one mile of the project site, 0.75:1 if there is an active nest within five miles but greater than one mile away, and 0.5:1 if there is an active nest within 10 miles but greater than five miles away. If there is an active nest within one mile of the project site, the mitigation ratio can be reduced to 0.5:1 if all of the mitigation land can be actively managed for prey production. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area within Stanislaus County.

c. There are two active (within the past five years) Swainson's hawk nests within five miles of the project site (CNDDB Occurrences Nos. 2449 and 2451). To mitigate for the loss of foraging habitat for these nests, replacement foraging habitat shall be preserved at a mitigation ratio of 0.75:1 in consultation with California Department of Fish and Wildlife. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area within Stanislaus County.

If required, pre-construction Swainson's hawk surveys may be required to identify additional nests within ten miles of the project site. If additional nests are observed, foraging habitat shall be preserved following the mitigation ratios outlined above.

BIO-5 A qualified bat biologist shall perform a bat roost habitat assessment at least 30 days from the start of project activities. If bats or evidence of bats (guano, dead bats) are found to be absent and no suitable habitat exists, a letter report shall be submitted to the City of Newman Community Development Department and no further actions are required. If evidence of past roosting is found, suitable habitats shall be modified to render them unsuitable prior to project activities and a preconstruction survey shall occur within 14 days of the start of project activities. If live bats are found to be present, the qualified bat biologist shall determine whether bats are engaged in maternity roosting, or hibernation. If they are engaged in maternity or hibernation, direct and indirect project impacts shall be avoided, and a no disturbance buffer of at least 100-feet shall be established until such time the bat biologist determines they may be humanely evicted. If active day roosting bats require eviction, the bat biologist shall prepare an eviction plan to submit to the lead agency and CDFW, if there is a state nexus. The eviction plan shall be implemented until it can be determined that all bats have vacated, at which point any remaining buffers may be removed and project activities may commence.

BIO-6 To avoid impacts to loggerhead shrike and other nesting birds during the nesting season (January 15 through September 15), all construction activities should be conducted between September 16 and January 14, which is outside of the bird nesting season. If construction or project-related work is scheduled during the nesting season (February 15 to August 30 for small bird species such as passerines; January 15 to September 15 for owls; and February 15 to September 15 for other raptors), a qualified biologist shall conduct nesting bird surveys.

a. Two surveys for active bird nests will occur within 14 days prior to start of construction, with the final survey conducted within 48 hours prior to construction. Appropriate minimum survey radii surrounding each work area are typically 250 feet for passerines, 500 feet for smaller raptors, and 1,000 feet for larger raptors. Surveys will be conducted at the appropriate times of day to observe nesting activities. Locations off the site to which access is not available may be surveyed from within the site or from public areas. If no nesting birds are found, a letter report confirming absence will be prepared and submitted to the City of Newman Community Development Department and no further mitigation is required.

b. If the qualified biologist documents active nests within the project site or in nearby surrounding areas, an appropriate buffer between each nest and active construction shall be established. The buffer shall be clearly marked and maintained until the young have fledged and are foraging independently. Prior to construction, the qualified biologist shall conduct baseline monitoring of

each nest to characterize "normal" bird behavior and establish a buffer distance, which allows the birds to exhibit normal behavior. The qualified biologist shall monitor the nesting birds daily during construction activities and increase the buffer if birds show signs of unusual or distressed behavior (e.g., defensive flights and vocalizations, standing up from a brooding position, and/or flying away from the nest). If buffer establishment is not possible, the qualified biologist or construction foreman shall have the authority to cease all construction work in the area until the young have fledged and the nest is no longer active. Once the absence of nesting birds has been confirmed, a letter report will be prepared and submitted to the City of Newman Community Development Department.

BIO-7 Prior to initiation of ground disturbance or construction activities within the project boundary, the applicant will retain a qualified biologist to determine the extent of potential wetlands and waterways regulated by the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW).

If the USACE claims jurisdiction, the applicant shall obtain a Clean Water Act Section 404 Nationwide Permit. If the impacts to the drainage features do not qualify for a Nationwide Permit, the applicant will proceed in obtaining an Individual Permit from the USACE. The applicant will then coordinate with the RWQCB to obtain a Clean Water Act Section 401 Water Quality Certification. If necessary, the applicant will coordinate with the CDFW to obtain a Streambed Alteration Agreement.

To compensate for temporary and/or permanent impacts to Waters of the U.S. that would be impacted as a result of the proposed project, mitigation shall be provided as required by the regulatory permits. Mitigation would be provided through one of the following mechanisms:

a. A Wetland Mitigation and Monitoring Plan shall be developed that outlines mitigation and monitoring obligations for temporary impacts to wetlands and other waters as a result of construction activities. The Wetland Mitigation and Monitoring Plan would include thresholds of success, monitoring and reporting requirements, and site-specific plans to compensate for wetland losses resulting from the project. The Wetland Mitigation and Monitoring Plan shall be submitted to the appropriate regulatory agencies for review and approval during the permit application process.

b. To compensate for permanent impacts, the purchase and/or dedication of land to provide suitable wetland restoration or creation shall ensure a no net loss of wetland values or functions. If restoration is available and feasible, a minimum 1:1 impact to mitigation ratio would apply to projects for which mitigation is provided in advance.

For improvements on the project site, the applicant shall comply with terms and conditions of the permits, including measures to protect and maintain water quality, restore work sites, and mitigation to offset temporary and/or permanent wetland impacts. applicant shall be responsible for implementation of this mitigation measure prior to issuance of a grading permit.

Cultural Resources

CR-1 If any prehistoric or historic subsurface archaeological resources, including tribal cultural resources, are discovered during ground-disturbing activities:

a. All work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to CEQA Guidelines Section 15064.5.

b. If any find is determined to be significant, representatives from the City of Newman Community Development Department and the archaeologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation.

c. All significant prehistoric cultural materials and or tribal cultural resources recovered shall be, returned to Native American tribes traditionally and culturally affiliated with the area.

d. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, proposed project design, costs, and other considerations.

e. If avoidance is infeasible, other appropriate measures (e.g., data recovery) would be implemented.

f. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is being carried out.

CR-2 California Health and Safety Code Section 7050.5 and the CEQA Guidelines Section 15064.5(e) contain the mandated procedures of conduct following the discovery of human remains. According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The Stanislaus County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours, who would, in turn, notify the person the Native American Heritage Commission identifies as the Most Likely Descendant of any

human remains. Further actions shall be determined, in part, by the desires of the Most Likely Descendant. The Most Likely Descendant has 48 hours to make recommendations regarding the disposition of the remains following notification from the Native American Heritage Commission of the discovery. If the Most Likely Descendant does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the Most Likely Descendant's recommendations, the owner or the descendent may request mediation by the Native American Heritage Commission.

Geology and Soils

GEO-1 The following language shall be included in all demolition and grading permits: "If paleontological resources are discovered during demolition and earthmoving activities, work shall stop within 100 feet of the find until a qualified paleontologist can assess if the find is unique and, if necessary, develop appropriate treatment measures in consultation with the City Community Development Department."

Greenhouse Gas Emissions

GHG-1 The proposed project shall be designed to: 1) include no natural gas infrastructure, and 2) include electric vehicle support improvements to make the project EV ready, with improvements made consistent with the latest adopted version the CALGreen Tier 2 standards, except that all EV capable spaces shall be instead EV ready. Inclusion of these design elements in the final project plans shall be verified by the City Building Official prior to issuance of a building permit.

Noise

N-1 The following shall be implemented by the project developer during construction of the project, pursuant to General Plan Policy HS-6.9:

a. Construction activities shall normally be limited to the hours of 7AM to 7PM Monday through Friday, and 8AM to 7PM on Saturday. Construction Use available noise suppression devices and properly maintain and muffle loud construction equipment.

b. Avoid stating of construction equipment and unnecessary idling of equipment within 200 feet of noise-sensitive land uses.

PUBLIC REVIEW INITIAL STUDY

CATON RANCH ANNEXATION AND SUBDIVISION

CITY OF NEWMAN

PREPARED FOR

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January 2023

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Appendices

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Tables

A. BACKGROUND

Project Title	Caton Ranch Annexation and Subdivision
Lead Agency Contact Person and Phone Number	Michael E. Holland, City Manager City of Newman 209-862-3725
Date Prepared	January 2023
Study Prepared by	EMC Planning Group Inc. 601 Abrego Street Monterey, CA 93940
Project Location	29101 and 29113 Prince Street, unincorporated Stanislaus County
Project Sponsor Name and Address	Dunkley and Simon Trusts 239 Main Street, Suite E Pleasanton, CA 94566
General Plan Designation	Medium Density Residential – *Newman 2030 General Plan* Agriculture – *Stanislaus County General Plan 2015*
Zoning	Agriculture A-2-20

Setting

The 20.94-acre project site, APNs 026-071-001 and -004, is located at 29101 and 29113 Prince Street in unincorporated Stanislaus County at the southern edge of the Newman city limits, within the City of Newman's Primary Sphere of Influence. The project site is located in the northwestern San Joaquin Valley about five miles east of Interstate 5 and about 0.3 miles west of State Route 33.

The project site is surrounded by existing low-density residential neighborhoods to the north and west and agricultural uses to the south and east; however, the site to the east does have approvals for a Medium Density Residential subdivision (Mattos Ranch Subdivision 1). The project site is currently developed with two homes and associated farming structures with the remainder of the site in agriculture production. The project site has a general plan land use designation of Medium Density Residential in the *Newman 2030 General Plan* ("City general plan") and is designated as Agriculture in the *Stanislaus County General Plan 2015* ("County general plan"). The property is also designated as Agriculture A-2-20 in the Stanislaus County zoning map.

Figure 1, Location Map, presents the regional location of the project site. Figure 2, Aerial Photograph, presents an aerial of the project site and surrounding land uses. Figure 3, Site Photographs, illustrates the existing setting of the project site.

Description of Project

The project proposes pre-zoning and annexation (including a Pre-Annexation Agreement), and a subdivision map to allow for construction of 112 low density and medium density single-family homes on the site. The project also includes a 1.91-acre dual usage park site on the eastern side of the property along with the development of various rights-of-way onsite with new water, sewer, and storm drain facilities. Figure 4, Tentative Subdivision Map, illustrates the configuration of the subdivision for the property. The project plans can be found in Appendix A.

Background

The City of Newman ("City") has been anticipating residential development on the project site since adoption of the City general plan in 2007. The City had received two applications for annexation, prezoning, and subdivision in the past. In 2004, 144 single-family homes were proposed, and in 2016, 117 single-family homes were proposed. Although initial studies were prepared for each application, a mitigated negative declaration was never adopted by the City.

As a result of the City's anticipation for this type of residential development at this project site, several City documents have been prepared with this type development in mind. For example, the *City of Newman Wastewater Collection System - Sewer System Management Plan (SSMP)* (City of Newman 2009) prepared its document with modeling that included development at the project site, identified as "Area 1;" the *Draft City of Newman Wastewater Collection System Master Plan* (City of Newman 2008) prepared its document with modeling that included development at the project site, identified as "the Caton Property;" the City's *2015 Urban Water Management Plan* (City of Newman 2016) relied on the City's general plan, which anticipated residential development at the site; and the *Groundwater Sustainability Plan for the San Joaquin River Exchange Contractors GSP Group in the Delta-Mendota Subbasin* (San Joaquin River Exchange Contractors GSP Group 2019) based its conclusions about groundwater supply on the residential development at the project site.

The analysis in the initial study will utilized information from these documents, as appropriate.

Analysis Methodology

According to CEQA Guidelines section 15183, Projects Consistent with a Community Plan or Zoning, CEQA mandates that projects which are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies.

The proposed project is consistent with the general plan development density for the site and must be consistent with relevant general plan policies. Therefore, the proposed project is evaluated in light of CEQA Guidelines section 15183.

Other Public Agencies Whose Approval May Be Required

Regional Water Quality Control Board

United States Army Corps of Engineers

U.S. Fish and Wildlife Service

California Department of Fish and Wildlife

Stanislaus Local Agency Formation Commission

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

As of February 2022, no California Native American tribes traditionally and culturally affiliated with the project area have requested consultation pursuant to Public Resources Code section 21080.3.1 (Michael Holland, telephone conversation, February 2, 2022).

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

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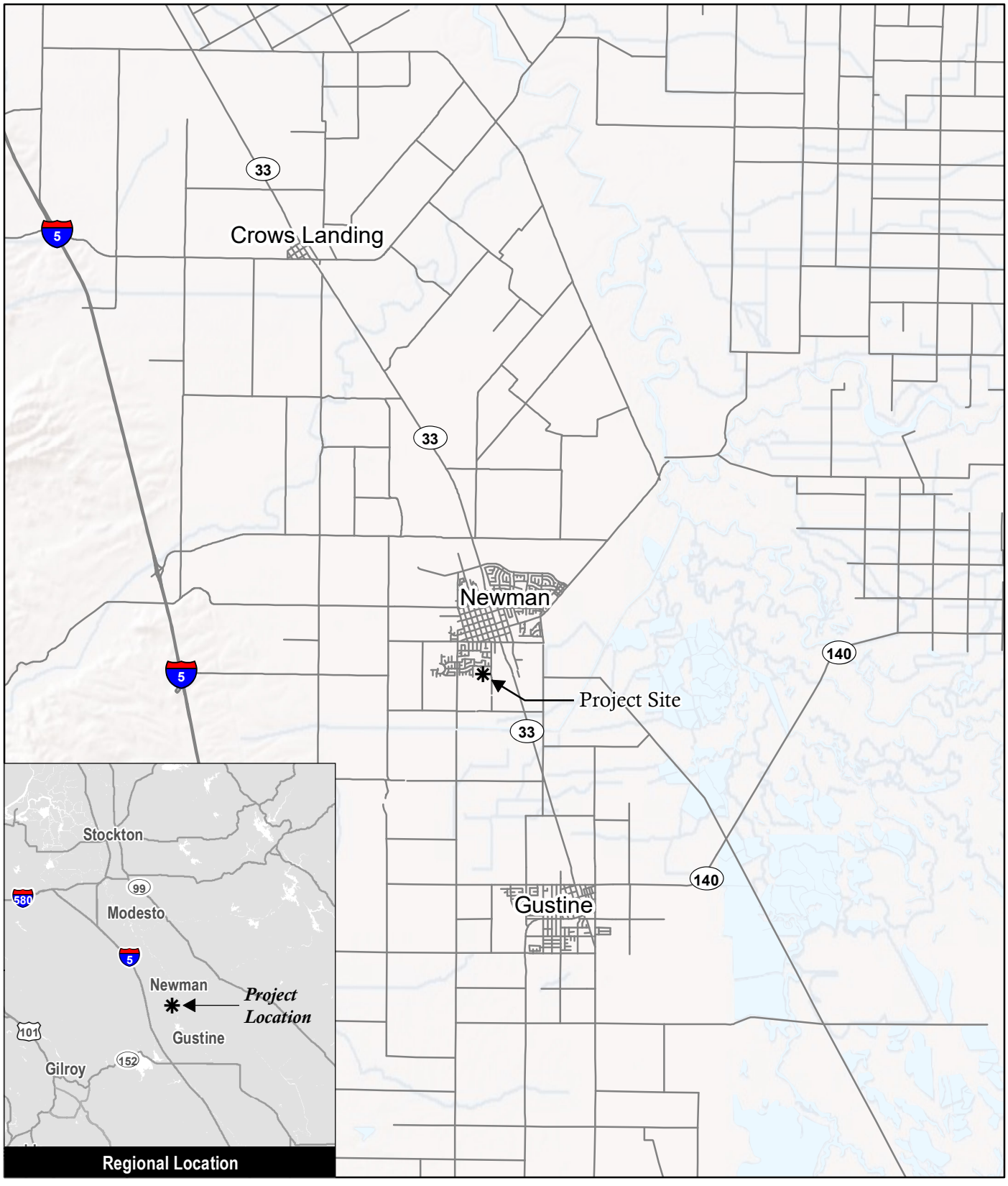

Figure 1

Location Map

Caton Ranch Annexation and Subdivision Initial Study

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Project Location

City Limit

Source: Stanislaus County GIS 2022, Merced County GIS 2022 , Google Earth 2021

Figure 2

Aerial Photograph

Caton Ranch Annexation and Subdivision Initial Study

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1 On Prince Street facing west at the existing residence that would remain on the project site.

2 On Prince Street facing west at the existing residence on the project site that would be demolished.

3 Facing south along Prince Street and the eastern border of the project site.

Project Site

Source: Google Earth 2022
Photographs: EMC Planning Group 2022

4 At southern boundary of the project site facing west.

5 Facing east across the project site.

6 Facing south across the project site.

Figure 3
Site Photographs

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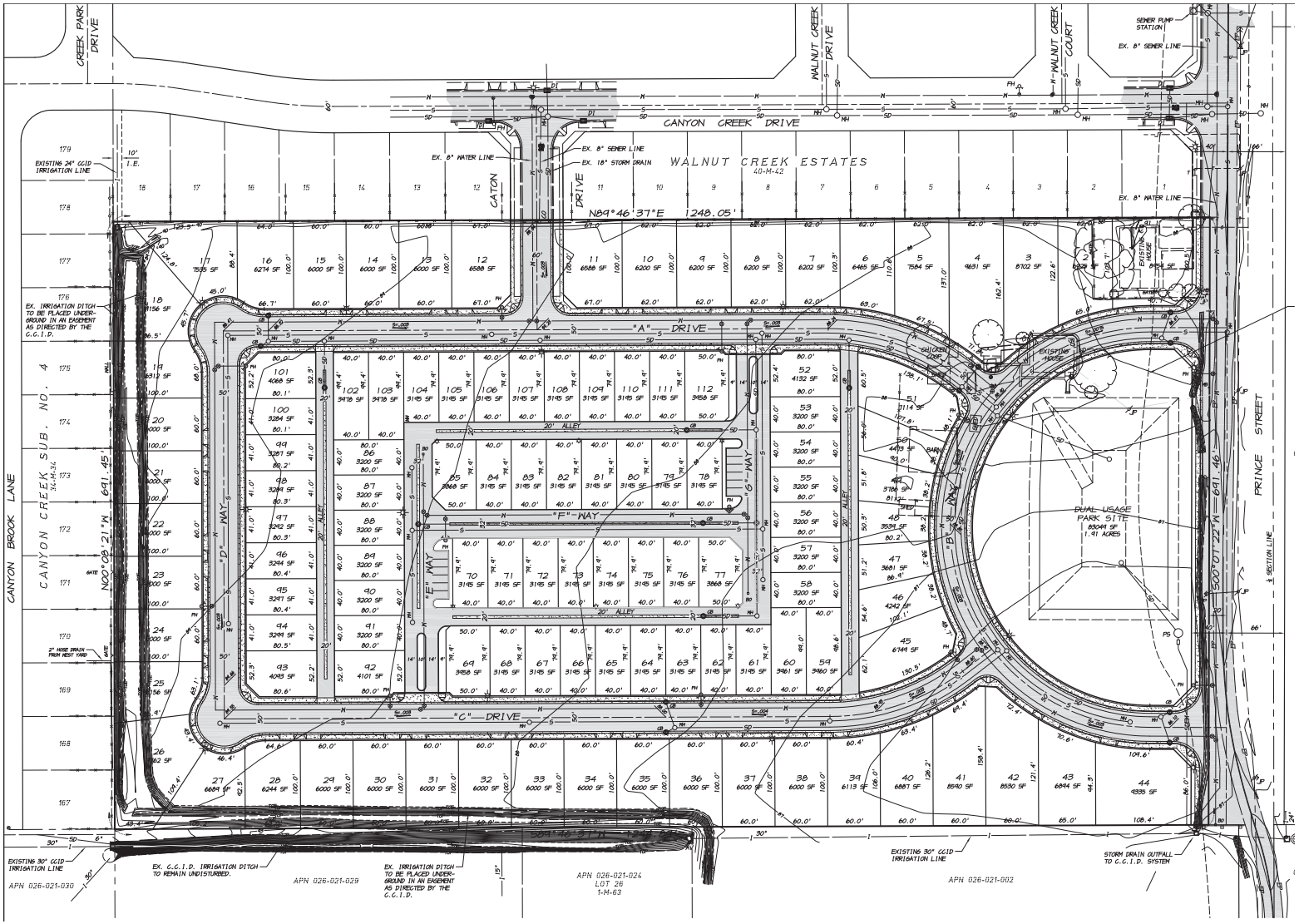

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Source: Associated Engineering Group 2021

Figure 4

Tentative Subdivision Map

Caton Ranch Annexation and Subdivision Initial Study

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B. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

C. DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (1) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (2) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Michael E. Holland, City Manager _____ Date

D. Evaluation of Environmental Impacts

Notes

1. All answers take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
2. Once it has been determined that a particular physical impact may occur, then the checklist answers indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
3. "Negative Declaration: Less-Than-Significant Impact with Mitigation Measures Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less-Than-Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less-than-significant level (mitigation measures from section XVII, "Earlier Analyses," may be cross-referenced).
4. Earlier analyses are used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. [Section 15063(c)(3)(D)] In this case, a brief discussion would identify the following:
    a. "Earlier Analysis Used" identifies and states where such document is available for review.
    b. "Impact Adequately Addressed" identifies which effects from the checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and states whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. "Mitigation Measures"—For effects that are "Less-Than-Significant Impact with Mitigation Measures Incorporated," mitigation measures are described which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
5. Checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances, etc.) are incorporated. Each reference to a previously prepared or outside document, where appropriate, includes a reference to the page or pages where the statement is substantiated.
6. "Supporting Information Sources"—A source list is attached, and other sources used or individuals contacted are cited in the discussion.
7. The explanation of each issue identifies:
    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any to reduce the impact to less than significant.

1. AESTHETICS

Except as provided in Public Resources Code Section 21099 (Modernization of Transportation Analysis for Transit-Oriented Infill Projects), would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b.	Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c.	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 publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d.	Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Comments:

a. According to the *Newman 2030 General Plan EIR* (City general plan EIR), the Diablo Mountain range to the west of the City of Newman and the surrounding agricultural lands greatly contribute to the visual character of Newman (p. 4.1-12).

The proposed project is surrounded by existing low-density residential neighborhoods to the north and west and agricultural uses to the south and east; however, the site to the east does have approvals for a Medium Density Residential subdivision (Mattos Ranch Subdivision 1). Existing views of the Diablo Mountain range are visible from Prince Street, but these views are minimal, as presented earlier in Figure 3, Site Photographs. Although views from Prince Street would be permanently altered with the development of the project, the project site was anticipated for residential development by the City general plan and evaluated in the City general plan EIR. In addition, the proposed use of the site would be similar to the uses existing to the north and west and the 1.91-acre dual usage park component of the project, to be located between Prince Street and the proposed residences, would offset the impact of the altered views.

Because the site was anticipated for the proposed residential uses by the City, in addition to the minimal existing views of the distant mountain range, the project would not have a substantial adverse effect on a scenic vista.

b. According to the City general plan EIR, there are no state-designated scenic highways in or around the City of Newman. Therefore, the proposed project would not impact visual resources within a state-designated scenic highway.

c. The project site is located at the urban-rural edge, is surrounded by existing and approved urban development on three sides, and is designated by the City general plan as Medium Density Residential. Once annexed into the City of Newman, the zoning of the project site would be consistent with that of the City zoning. Additionally, if the proposed project were approved, the applicant will be required to provide additional project plans that illustrate its compliance with applicable zoning and other regulations governing scenic quality through the Architectural and Site Plan Review process as identified in City zoning code Section 5.04.051, R-2S property development standards. Implementation of the Architectural and Site Plan Review process would ensure that the proposed project would not conflict with regulations governing scenic quality.

d. Existing light sources in the area include street lights, exterior lighting from nearby residences, and vehicle headlights from motorists driving along local roadways. Development of the proposed project with 112 single-family residences would introduce a new source of light and glare to the site, which currently includes only one single-family residence.

Although the proposed project would introduce new light to the site, the uses proposed have been evaluated in the City general plan EIR and anticipated by the City general plan. Its proposed use is also similar to adjacent uses and would be consistent with the residential neighborhood lighting. The proposed project would be required to include street lighting that would be similar to those existing throughout the City of Newman. The project's exterior surfaces on the residences would also be required to include architectural elements that reduce the potential to introduce glare.

The City general plan EIR concluded that with enforcement of its existing regulations regarding light and glare in its Standard Conditions of Approval and City zoning code, impacts related to light and glare by urban development allowed under the City general plan would be less than significant.

2. AGRICULTURE RESOURCES

In determining whether impacts on agricultural resources are significant environmental effects and in assessing impacts on agriculture and farmland, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	☒	☐	☐	☐
b.	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use?	☐	☒	☐	☐

Comments:

a. The project site consists of primarily unique farmland with the small northeastern edge of the site consisting of prime farmland (California Department of Conservation 2022). Although the site has historically been used for agriculture practices, the site is designated by the City general plan as Medium Density Residential and development of the site with this use has been evaluated in the City general plan EIR. The City general plan EIR determined that even with implementation of mitigation measures, goals, and policies, the impact related to the conversion of agricultural resources would remain significant and unavoidable. Therefore, when adopting the general plan, the City has adopted a statement of overriding considerations finding that the benefits of placing Medium Density Residential uses at the site outweighed the impacts of the loss of prime and unique farmlands. Because the proposed project is consistent with the City general plan, CEQA Guidelines section 15183 applies here and no further analysis of the conversion of prime and unique farmlands is necessary.

b. The project site is not located on land subject to a Williamson Act Contract (City of Newman 2006).

Much of the agricultural land in the City of Newman's Sphere of Influence, which includes the project site, that is designated for urban uses under the City general plan is designated in the County general plan, and zoned by Stanislaus County, for agriculture. However, these lands would be converted to urban uses only after they are annexed to

the City of Newman when the Stanislaus County designation would no longer apply. With implementation of the proposed project (inclusive of annexation and pre-zoning to the City of Newman), the project would be consistent with the City's zoning of the site for residential uses.

The proposed project is consistent with the City general plan, which supports an agriculture use until annexation and development of the property through its policies NR-1.1, (continuation of agricultural uses on lands designated for urban uses until urban development is imminent), NR-1.2 (encouraging Stanislaus County to retain agricultural uses on lands surrounding the City of Newman pending their annexation to the City of Newman), and NR-1.7 (calls for the City to continue to enforce its right-to-farm ordinance). The Local Agency Formation Commission of Stanislaus County (LAFCO) has adopted the Agricultural Preservation Policy that the City has taken actions to comply with, including establishing an urban growth boundary to create strict limits for urban growth surrounding the developed portions of the City of Newman. Development of the proposed project would occur within the urban growth boundary and therefore, complies with the LAFCO Agricultural Preservation Policy.

c. Development of the project would result in the conversion of agricultural use to non-agricultural use. The project site, which is designated as Medium Density Residential by the City general plan, is also adjacent to agricultural land to the east that has approvals for a Medium Density Residential subdivision. Therefore, the conversion of this land to the east has also been evaluated by the City general plan EIR and the City general plan anticipates its conversion to non-agricultural uses. The project site is also surrounded by existing low-density residential neighborhoods to the north and west.

As identified in checklist question "b" above, the project complies with City general plan policies NR-1.1, NR-1.2, and NR-1.7, which encourage the continuation of agricultural uses on lands designated for urban use until urban development is imminent. The project is within the City's adopted urban growth boundary, specifically the Primary Sphere of Influence, which prioritizes development consistent with the general plan at the project site over other lands within the City of Newman's Sphere of Influence. Therefore, development of the site has been planned for by the City and evaluated in the City general plan EIR.

However, the City general plan EIR identifies policies intended to protect agricultural lands in the future as growth occurs pursuant to the City general plan. The proposed project would be required to comply with City general plan policy NR-1.4, which requires that new development adjacent to agricultural lands use design solutions such as roads, setbacks, and other physical boundaries to create sufficient buffers. The site abuts agricultural land to the south where the proposed project does not appear to have separation. The project would be required to implement a design solution on the southern perimeter to separate the proposed residential uses from the existing agricultural uses.

According to City staff, the applicant has agreed to install a concrete masonry unit wall along the southern boundary, which City staff believes is appropriate due to the City general plan identifying a two-lane arterial road to be placed along the southern border of the project site (refer to Figure TC-1 of the City general plan) (Michael Holland, email message, October 4, 2022). The installation of the wall would comply with City general plan policy NR-1.4; therefore, the following mitigation measure would be required in order to reduce impacts to a less-than-significant level.

Mitigation Measure

AG-1 Prior to recordation of a final map, the project developer shall illustrate on the final map and improvement plans a concrete masonry unit wall along the southern boundary of the project site. The Public Works Department shall review and approve the material and design of the wall.

3. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?	☐	☐	☐	☒
c.	Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d.	Result in other emissions, such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☐	☒

Comments:

a. The project site is located in Stanislaus County in the northern portion of the San Joaquin Valley Air Basin (air basin). The San Joaquin Valley Air Pollution Control District (air district) is the agency with primary responsible for assuring that national and state ambient air quality standards are attained and maintained in the air basin. CEQA requires that proposed projects be analyzed for conflicts with applicable air quality plans. An air quality plan describes air pollution control strategies to be implemented by a city, county, or region classified as a non-attainment area. The main purpose of an air quality plan is to bring the area into compliance with the requirements of the federal and State ambient air quality standards.

The air basin encompasses the San Joaquin Valley with Sierra Nevada Mountains to the east, the Coast Ranges to the west, and the Tehachapi mountains to the south. Airflow is considerably affected by summertime inversions at lower elevations than the surrounding topography and as a result can lead to a buildup of ozone and ozone precursor pollutants within the basin. Wintertime inversions trap air near the ground and can lead to buildup of particulate matter air pollutants.

Attainment status is found on the air district website (SJVAPCD 2022a). The primary air pollutants of concern in the air basin are ozone and particulate matter, for which the air basin is in nonattainment. According to the air district, the air basin is in nonattainment for the federal and state standards for ozone (eight-hour) and $PM_{2.5}$, and with the state

standards for ozone (one hour) and PM_{10}. The air basin is either unclassified or in attainment with all other state and federal ambient air quality standards.

On August 19, 2021, the air district approved the *2018 $PM_{2.5}$ Plan for the San Joaquin Valley* (2018 $PM_{2.5}$ Plan), which revises the district's previous $PM_{2.5}$ attainment plan to establish a new attainment target for the 1997 annual $PM_{2.5}$ standard. The air basin would have met this standard by the projected attainment target of 2020, but for significant effect of wildfire smoke in addition to data collection issues at the air monitoring site in Bakersfield. Based on implementation of the control strategy in the 2018 $PM_{2.5}$ Plan, modeling has shown that the air basin is on track attain the 1997 annual $PM_{2.5}$ standard by 2023, if not earlier (SJVAPCD 2018).

The air district has adopted thresholds, rules and regulations to implement the 2018 $PM_{2.5}$ Plan and address ozone and particulate matter emissions in the air basin. The air district's Indirect Source Review Rule (Rule 9510) addresses reduction measures for ozone precursor and PM_{10} emissions from new land use development projects. The rule is the result of state requirements outlined in the regions' portion of the state implementation plan in compliance with the Clean Air Act. Projects with greater than 50 residential units are subject to compliance with Rule 9510, which is administered and monitored by the air district.

New projects that would generate substantial air pollutant emissions are subject to this rule. The rule requires projects to mitigate both construction and operational period emissions by applying the air district-approved mitigation measures and paying fees to support programs that reduce emissions. Fees apply to the unmitigated portion of the emissions and are based on estimated costs to reduce the emissions from other sources plus expected costs to cover administration of the program.

The air district controls fugitive dust PM_{10} emissions through Regulation VIII, the purpose of which is to reduce ambient concentrations of PM_{10} by requiring actions to prevent, reduce or mitigate anthropogenic (human caused) fugitive dust emissions. Emissions reduction measures also reduce $PM_{2.5}$ emissions. This applies to activities such as construction, bulk materials, open areas, paved and unpaved roads, material transport, and agricultural areas. Sources regulated are required to provide dust control plans that meet the regulation requirements. Fees are collected by the air district to cover costs for reviewing plans and conducting field inspections.

Air quality prescreening and emissions thresholds are found on the air district website. Guidance and methodology for analysis of air quality impacts are provided in the air district's *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (SJVAPCD 2015), which represents the latest guidance for addressing air quality impacts in the air basin.

The air district screening criteria help determine if a project's construction and operations emissions would have the potential to violate ambient air quality standards. Projects that do not exceed the screening thresholds or criteria pollutant emissions volume thresholds

would not conflict with or obstruct implementation of the air quality plan. Projects with emissions that exceed the air district's thresholds have the potential to exceed the ambient air quality standards, which would be considered a potentially significant impact, and a potential conflict with the air district's air quality plan.

The air district's pre-screening thresholds for quantitative analysis are found in its Small Project Analysis Level (SPAL) screening tables (SJVAPCD 2022b). Projects that fit the descriptions and project sizes provided in the SPAL tables are deemed by the air district to have a less than significant impact on air quality and quantification of criteria air pollutants would not be necessary. According to the tables, quantification of operational criteria pollutant emissions is not required for a single-family residential development with fewer than 155 dwelling units and fewer than 800 average daily one-way vehicle trips; quantification of construction criteria pollutant emissions is not required for projects with fewer than 400 dwelling units. The proposed project consists of 112 residential units that would generate an estimated 1,120 trips per day (VRPA Technologies Inc. 2022). Therefore, due largely to the estimated trip generation, the proposed project would have the potential to generate operational emissions that exceed the thresholds and could potentially conflict with the air district's air quality plans.

Project operational emissions were quantified using the California Emissions Estimator Model (CalEEMod) version 2020.4. The modeling methodology, assumptions and results are included in the technical memorandum *Caton Ranch Residential Subdivision – Criteria Air Pollutant and Greenhouse Gas (GHG) Emissions Modeling: Methodology, Assumptions, and Results* (EMC Planning Group 2022) in Appendix B, and are discussed in greater detail in item b, below. The results show that the proposed project would not generate criteria air pollutant emissions that exceed air district thresholds. Therefore, the proposed project would not conflict with or jeopardize implementation of the air district air quality plan.

b. The proposed project would generate criteria air pollutant emissions during construction and operations and would affect regional ambient air quality. However, the proposed project is well below the SPAL screening levels for residential projects, and the effect of project construction emissions to ambient air quality would be less than significant for the purposes of CEQA.

Although the project's construction ozone and particulate matter emissions would not exceed the air district's CEQA significance thresholds based on the SPAL screening size, compliance with Rule 9510 and Regulation VIII is required to ensure that the project contributes its share of emission reductions in order to achieve the basin-wide reduction targets established in the air district's ozone and particulate matter attainment plans. Rule 9510 requires that the project reduce construction NOx exhaust emissions by 20 percent and construction PM_{10} exhaust emissions by 45 percent. These reductions are typically achieved by using newer or retrofitted construction fleets, reducing construction traffic, electrifying the construction site and stationary equipment, and implementing idling restrictions for equipment and trucks. Compliance with this measure would further reduce the project's less than significant construction NO_x and PM_{10} emissions.

Regulation VIII requires implementation of fugitive dust control measures. A dust control plan is required subject to review and approval by the air district prior to construction as part of the building permit application process. The dust control plan must outline control measures for each phase of construction, which may include all or a combination of the following measures, consistent with Regulation VIII:

- Effective dust suppression (e.g., watering) for land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill and demolition activities.
- Effective stabilization of all disturbed areas of a construction site, including storage piles, not used for seven or more days.
- Control of fugitive dust from on-site unpaved roads and off-site unpaved access roads.
- Removal of accumulations of mud or dirt at the end of the workday or once every 24 hours from public paved roads, shoulders and access ways adjacent to the site.
- Cease outdoor construction activities that disturb soils during periods with high winds.
- Record keeping for each day dust control measures are implemented.
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Landscape or replant vegetation in disturbed areas as quickly as possible.
- Prevent the tracking of dirt on public roadways. Limit access to the construction sites, so tracking of mud or dirt on to public roadways can be prevented. If necessary, use wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
- Suspend grading activity when winds (instantaneous gusts) exceed 25 mph or dust clouds cannot be prevented from extending beyond the site.
- Anyone who prepares or implements a dust control plan must attend a training course conducted by the air district. Construction sites are subject to air district inspections under this regulation.

The project is subject to compliance with Regulation VIII as part of the building permit review process. Compliance with Regulation VIII ensures that construction fugitive dust PM_{10} emissions are reduced to a less-than-significant level. No mitigation is required

The CalEEMod modeling results for unmitigated operational emissions found in Appendix B are compared to the air district thresholds are presented in Table 1, Project Unmitigated Operational Emissions (Tons per Year).

The project's criteria air pollutant emissions and their effects to air quality during construction and operations are less than significant. The project's contribution to regional cumulative air quality impacts is less than cumulatively considerable.

Table 1 Project Unmitigated Operational Emissions (Tons per Year)

Pollutant	Threshold	Project Emissions	Threshold Exceeded?
Carbon Monoxide (CO)	100	8.77	NO
Nitrous Oxide (NO_x)	10	1.11	NO
Volatile Organic Compounds (VOC/ROG)	10	1.91	NO
Sulfur Oxides (SO_x)	27	0.02	NO
Respirable Particulate Matter (PM^{10})	15	1.71	NO
Fine Particulate Matter ($PM^{2.5}$)	15	0.81	NO

SOURCE: SJVAPCD 2022b, EMC Planning Group 2022

NOTE: Amounts are rounded and; therefore, may vary.

c. Toxic air contaminants (TACs) are pollutants that may be expected to result in an increase in mortality or serious illness or may pose a present or potential hazard to human health. Health effects include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuels combustion, and commercial operations (e.g., dry cleaners). Construction equipment and associated heavy-duty truck traffic generates diesel exhaust and fugitive dust ($PM_{2.5}$) that poses health risks for sensitive receptors. Diesel particulate matter (DPM), which is a known TAC, is a component of diesel exhaust. Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs.

Smoke from residential wood combustion can be a source of TACs. Wood smoke is typically emitted during wintertime when dispersion conditions are poor. Localized high TAC concentrations can result when cold stagnant air traps smoke near the ground and, with no wind; the pollution can persist for many hours, especially in sheltered valleys during winter. Wood smoke also contains a significant amount of PM_{10} and $PM_{2.5}$. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

Children, the elderly, and the chronically or acutely ill are the most sensitive population groups that are more susceptible to adverse effects of air pollution than others. These sensitive receptors are commonly associated with specific land uses such as residential areas, elementary schools, retirement homes, and hospitals. The sensitive receptors nearest to the project site are residences in the neighborhoods adjoining the site to the north and west.

The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) have developed recommended methods for conducting health risk assessments. The Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments (2015 guidelines) are the most recent OEHHA risk assessment guidelines. These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines.

The air district adopted the OEHHA's 2015 guidelines as part of its Policy APR-1905 Risk Management Policy for Permitting New and Modified Sources and Policy APR-1906 Framework for Performing Health Risk Assessments. Air district significance thresholds for health risks are listed in Policy APR-1906 which was adopted in 2015 and revised in 2018. Per Policy APR-1906 in 2015 and the 2018 revisions, the air district single-source threshold for cancer risk is 20 cases per million the threshold for non-cancer risks is less than 1.0; the cumulative threshold is 100 cases per million with a non-cancer risk threshold of 5.0.

A health risk assessment prepared by Illingworth and Rodkin in 2015 (health risk assessment) evaluated health risks from exposures to construction emissions of a similarly-sized and formerly proposed 117-unit residential project on the project site. At that time, as today, the sensitive receptors nearest to the project site were the residential neighborhoods adjoining the site to the north and west. The health risk assessment is based on the OEHHA 2015 guidelines and air district guidance for analyzing infant and adult cancer and non-cancer health risks that can result from exposures to TACs. The analysis and conclusions of the health risk assessment prepared by Illingworth and Rodkin are utilized in this discussion since that analysis is based on current guidelines still in effect, construction would occur over a two-year period, emissions generated by construction of the proposed 112-unit residential subdivision would be similar to the construction emissions analyzed for the 117-unit subdivision, land uses surrounding the site and the proximity and orientation of the sensitive receptors nearest to the site are the same as when the health risk assessment was prepared.

The discussion in the remainder of this section summarizes the findings and conclusions of the health risk assessment. Area-source and mobile-source emissions were evaluated. The assumptions, methodology, and model results are presented in greater detail in the health assessment itself, which is included in Appendix C.

The health risk assessment determined that the proposed residential project operational emissions would not be a source of significant TAC exposures for existing sensitive receptors or new sensitive receptors. For mobile-source emissions the OEHHA guidelines suggest that significant exposures may occur when sensitive receptors are located within 1,000 feet of high-volume roadways, defined as roadways with greater than 10,000 Average Daily Traffic (ADT) volumes. State Route 33 has the largest traffic volume in the vicinity of the project site with about 6,000 to 7,000 ADT at the City of Newman/Merced County line (California Department of Transportation 2022). The new sensitive receptors that would be introduced to the site would add traffic to area roadways such as State Route 33, which is located about 1,500 feet east of the project site. The proposed project would add fewer than 1,200 vehicle trips to area roadways and would not increase ADT on State Route 33 to an extent that significant impacts would occur. Therefore, the health risk impacts from exposures to mobile-source emissions during project operations would be less than significant and less than cumulatively considerable.

Cancer Health Risks

The health risk assessment evaluated potential health effects from construction DPM emissions exposures at nearby residences using CalEEMod version 2013.2 and AERMOD dispersion modeling. CalEEMod generates an estimate of project emissions and AERMOD is used to predict the off-site DPM concentrations resulting from project construction so that lifetime cancer risks could be predicted. Potential increased cancer risk from inhalation of TACs are calculated based on the average annual TAC concentration, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs.

The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration over a 70-year lifetime period. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location, at a workplace, or at a school. The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, for a 70-year residential exposure period they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). The 95th percentile breathing rates are used for the third trimester, infant and child exposures, and an 80th percentile breathing rate for adults.

Based on the maximum average annual modeled DPM concentration, the maximum increased cancer risk was calculated. Due to the short duration of project construction activities, less than two years, infant exposures were assumed in calculating all cancer risks. Because an infant breathing rate is greater than for the 3rd trimester, the contribution to total cancer risk from an infant exposure is greater than if the initial exposure assumed a 3rd trimester exposure. Additionally, the OEHHA recommended values for the fraction of time spent at home were used.

The dispersion modeling identified a residence to the west of the site as the maximally exposed individual (MEI). The modeled increased cancer and non-cancer health risks that would result from MEI exposures to project construction emissions were found to be potentially significant. Modeling results for unmitigated health risks are compared to air district thresholds in Table 2, Unmitigated Cancer and non-Cancer Health Risks.

The modeled maximum increased cancer risks for an infant exposure at the MEI were found to exceed the air district thresholds, which would be a significant impact. Compliance with the air district Rule 9510 would reduce construction equipment emissions associated with cancer risks, but potentially not to a less than significant level. The health risk assessment recommends using construction equipment that meets the

EPA's Tier 2 or better engine requirements to ensure emissions and their associated health risks are reduced to a less than significant level. Implementation of this recommendation would reduce on-site diesel exhaust emissions by about 48 percent. Subsequently, the computed maximum increased residential infant cancer risk for construction would be 13.3 cases per million, and less than the air district standard of 20 cases per million. Implementation of the following mitigation measure in addition to compliance with Rule 9510 ensures that construction equipment emissions exposures and related infant cancer risks would be less than significant.

Table 2 Unmitigated Cancer and Non-Cancer Health Risks at the MEI

Category	Infant/Child Cancer Risk (Cases per Million)	Adult Cancer Risk (Cases per Million)	Hazard Index
Air District Single-Source Thresholds	20.0	20.0	1.0
Highest Emissions Year	27.9	0.5	0.1
Exceeds Thresholds?	*YES*	*NO*	*NO*

SOURCE: Illingworth and Rodkin 2015

NOTE: Amounts are rounded and; therefore, may vary.

Mitigation Measure

AQ-1 The following measure shall be included on all grading and construction documents:

> All mobile diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days continuously shall meet, at a minimum, US EPA particulate matter emissions standards for Tier 2 engines or equivalent.

Implementation of this measure in addition to compliance with the provisions of Rule 9510 ensures that the cancer risks associated with exposures to construction equipment emissions are less than significant.

Non-cancer Health Risks

The health risk assessment also evaluated potential non-cancer health effects due to chronic exposure to Diesel Particulate Matter (DPM). Non-cancer health hazards from Toxic Air Contaminants (TAC) exposure are expressed in terms of a hazard index, which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The chronic inhalation REL for DPM is 5 μ g/m^3. The maximum modeled annual DPM concentration was 0.104 μ g/m^3, which is much lower than the REL. The maximum computed hazard index based on this DPM concentration is 0.02 which is much lower than the air district significance threshold of 1.0. Therefore, the chronic health risk resulting from exposures to construction emissions would be less than significant.

d. The proposed residential project is not the type of land use associated with the generation of objectionable odors during its operations. During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would dissipate relatively quickly and thus would not likely to be noticeable for extended periods of time much beyond the project's site boundaries. The proposed project would not result in significant impacts related to odors.

4. BIOLOGICAL RESOURCES

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	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, regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☒	☐	☐
b.	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 US Fish and Wildlife Service?	☐	☐	☐	☒
c.	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.), through direct removal, filing, hydrological interruption, or other means?	☐	☒	☐	☐
d.	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?	☐	☐	☐	☒
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Comments:

A biological report was previously prepared in 2015 for the Caton Ranch project site: *Biological Resources Assessment: Prince Road Residential Subdivision Project* (WRA 2015). This biological report was reviewed for this initial study section and is included in Appendix D.

A reconnaissance-level biological field survey was conducted by EMC Planning Group biologist Patrick Furtado, M.S., on March 9, 2022, to verify conditions described in the biological report, document existing plant communities/wildlife habitats and evaluate the potential for special-status species to occur on the project site. Biological resources were documented in field notes,

including species observed, dominant plant communities, significant wildlife habitat characteristics, and aquatic resources. Qualitative estimations of plant cover, structure, and spatial changes in species composition were used to determine plant communities and wildlife habitats, and habitat quality and disturbance levels were described.

Prior to conducting the survey, Mr. Furtado reviewed site plans, aerial photographs, natural resource database accounts, and other relevant scientific literature. This included searching the U.S. Fish and Wildlife Service (USFWS) *Endangered Species Database* (USFWS 2022), California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* (CDFW 2022), and California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants* (CNPS 2022) to identify special-status plants, wildlife, and habitats known to occur in the vicinity of the project site.

The approximately 21-acre project site is located immediately south of the city limits of Newman, approximately five miles east of Interstate 5 and 0.3 miles west of State Route 33. The project site is currently developed with two homes and associated farming structures with the remainder of the site in agricultural production. The project site is surrounded by residential neighborhoods to the north and west and agricultural land to the south and east.

Wildlife habitat quality on the project site is considered low due to the high level of disturbance from agricultural activities. At the time of the biological survey, the fields on the project site were planted in a cover crop of cultivated oats (*Avena sativa*). The borders of the agricultural fields contained scattered ruderal (weedy) plants, such as non-native cheeseweed (*Malva parviflora*), prickly lettuce (*Lactuca serriola*), black mustard (*Brassica nigra*), and spiny sowthistle (*Sonchus asper*). Plant cover required by many animal species is likely intensively removed through the regular application of herbicides.

Common wildlife species likely to occur on the project site include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis virginiana*), and California ground squirrel (*Spermophilus beecheyi*). Small rodents including mice (*Mus musculus*, *Reithrodontomys megalotis*, and *Peromyscus maniculatus*) and California vole (*Microtus californicus*) may also occur, along with common reptiles such as western fence lizard (*Sceloporus occidentalis*) and Pacific gopher snake (*Pituophis catenifer*). Several species of birds were observed using the project site including Eurasian collared-dove (*Streptopelia decaocto*), American crow (*Corvus brachyrhynchos*), and house finch (*Haemorhous mexicanus*). A red-tailed hawk (*Buteo jamaicensis*) was observed perched in the trees on the site's southern boundary.

Agricultural drainage ditches on the project site occur along the western, eastern, and southern boundaries as shown on Figure 5, Habitat Map. Vegetation was largely absent from the drainage ditches.

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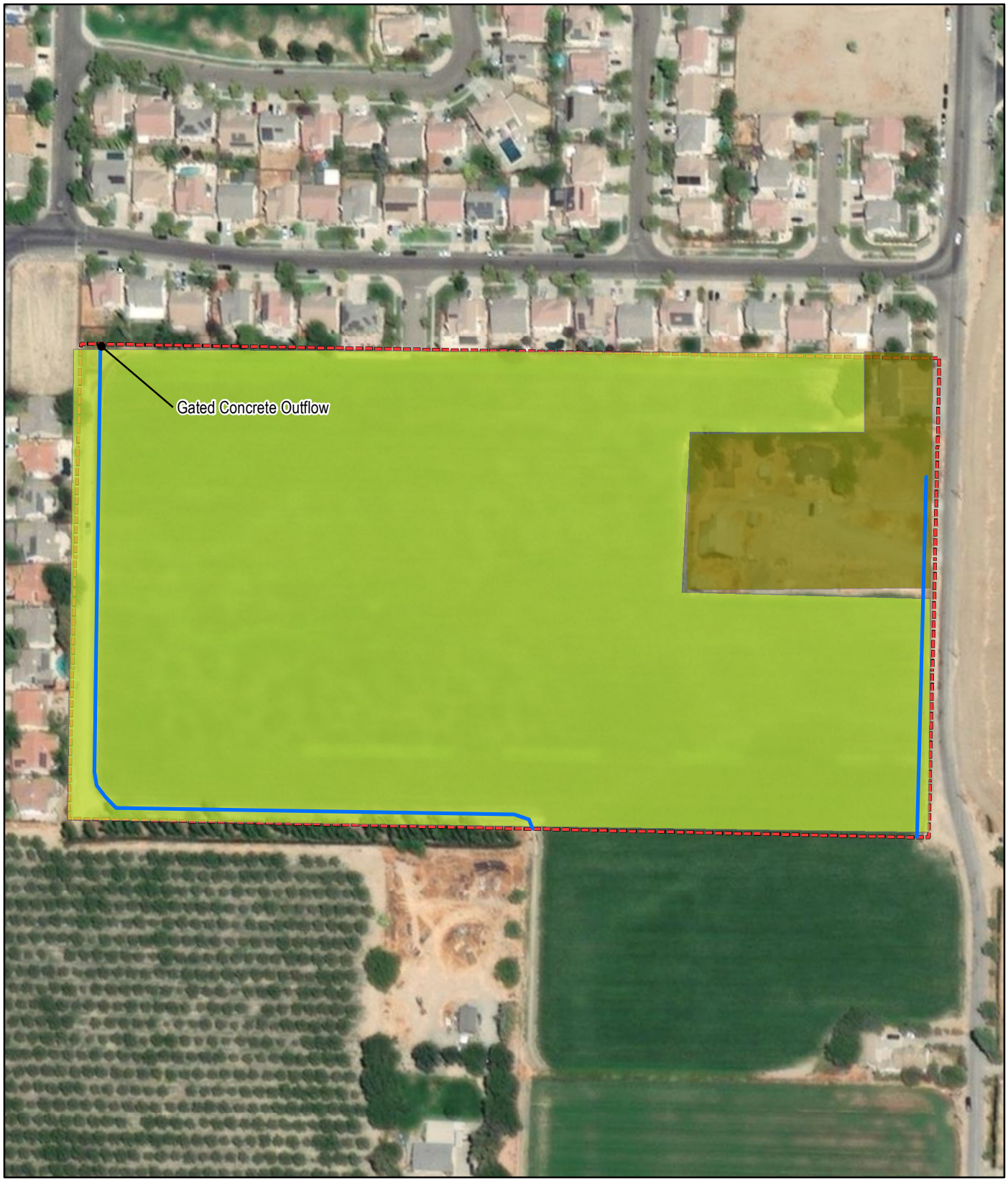

0 200 feet

Project Site
Agricultural/Ruderal
Developed
Agricultural Drainage

Source: ESRI 2022, EMC Planning Group 2022

Figure 5

Habitat Map

Caton Ranch Annexation and Subdivision Initial Study

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a. **Special-Status Species**. A search of the California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* was conducted for the Newman and the surrounding eight U.S. Geological Survey (USGS) quadrangles in order to generate a list of potentially occurring special-status species for the project vicinity. Records of occurrence for special-status plants were reviewed for those quadrangles in the CNPS *Inventory of Rare and Endangered Plants of California*. A USFWS *Endangered Species Program* threatened and endangered species list was also generated for Stanislaus County, and the USFWS *Critical Habitat for Threatened & Endangered Species* online mapper was reviewed. Special-status species in this report are those listed as Endangered, Threatened, or Rare, or as candidates for listing by the USFWS and/or CDFW; as Species of Special Concern or Fully Protected species by the CDFW; or as Rare Plant Rank 1B or 2B species by CNPS. Appendix E, Special-Status Species in the Project Vicinity, presents tables with CNDDB results, which lists special-status species documented within the project vicinity, their listing status and suitable habitat description, and their potential to occur on the project site. Figure 6, Special-Status Species Known to Occur in the Project Vicinity, presents a map of CNDDB results.

Given the disturbed and agriculturally developed condition of the project site, the lack of native vegetation, and the site's isolation from high quality habitat areas, most special-status plant and animal species known to occur in the region are not expected to occur on the project site due to lack of suitable habitats.

Special-status plant and wildlife species recorded as occurring in the vicinity of the project site but are not likely to occur on the project site due to lack of suitable habitat include Delta button-celery (*Eryngium racemosum*), alkali milk-vetch (*Astragalus tener* var. *tener*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), tricolored blackbird (*Agelaius tricolor*), California horned lark (*Eremophila alpestris actia*), giant garter snake (*Thamnophis gigas*), western spadefoot (*Spea hammondii*), and western pond turtle (*Emys marmorata*).

Special-status wildlife species with a low potential to occur on the project site include San Joaquin kit fox (*Vulpes macrotis mutica*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), loggerhead shrike (*Lanius ludovicianus*), and protected nesting birds. These species are discussed further below.

San Joaquin Kit Fox. The San Joaquin kit fox is a federally-listed endangered species and a state-listed threatened species. The present range of the San Joaquin kit fox extends from the southern end of the San Joaquin Valley, north to Tulare County, and along the interior Coast Range valleys and foothills to central Contra Costa County. San Joaquin kit foxes typically inhabit annual grasslands or grassy open spaces with scattered shrubby vegetation but can also be found in some agricultural habitats and urban areas. This species needs loose-textured sandy soils for burrowing, and they also need areas that provide a suitable prey base, including black-tailed hare, desert cottontails, and California ground squirrels, as well as birds, reptiles, and carrion.

According to the CDFW, kit foxes have become established in urban settings of the Central Valley, such as Bakersfield, Taft, and Coalinga (Harrison et. al 2011). When kit foxes have easy access to trash and pet food, they often lose fear of people and urban environments. Observations of this species have been documented approximately five miles to the southwest of the project site (Occurrence No. 414, CNDDB 2022) and approximately five miles to the southeast of the project site (Occurrence No. 600, CNDDB 2022).

The likelihood of this species occurring on the project site is considered low. Loss of or harm to individual kit foxes could result if they are present on the site or seek shelter during construction within artificial structures, such as stored pipes or exposed trenches. Loss or harm to San Joaquin kit fox is considered a significant adverse impact. Implementation of the following mitigation measure would reduce the potential impact to San Joaquin kit fox to a less-than-significant level.

Mitigation Measure

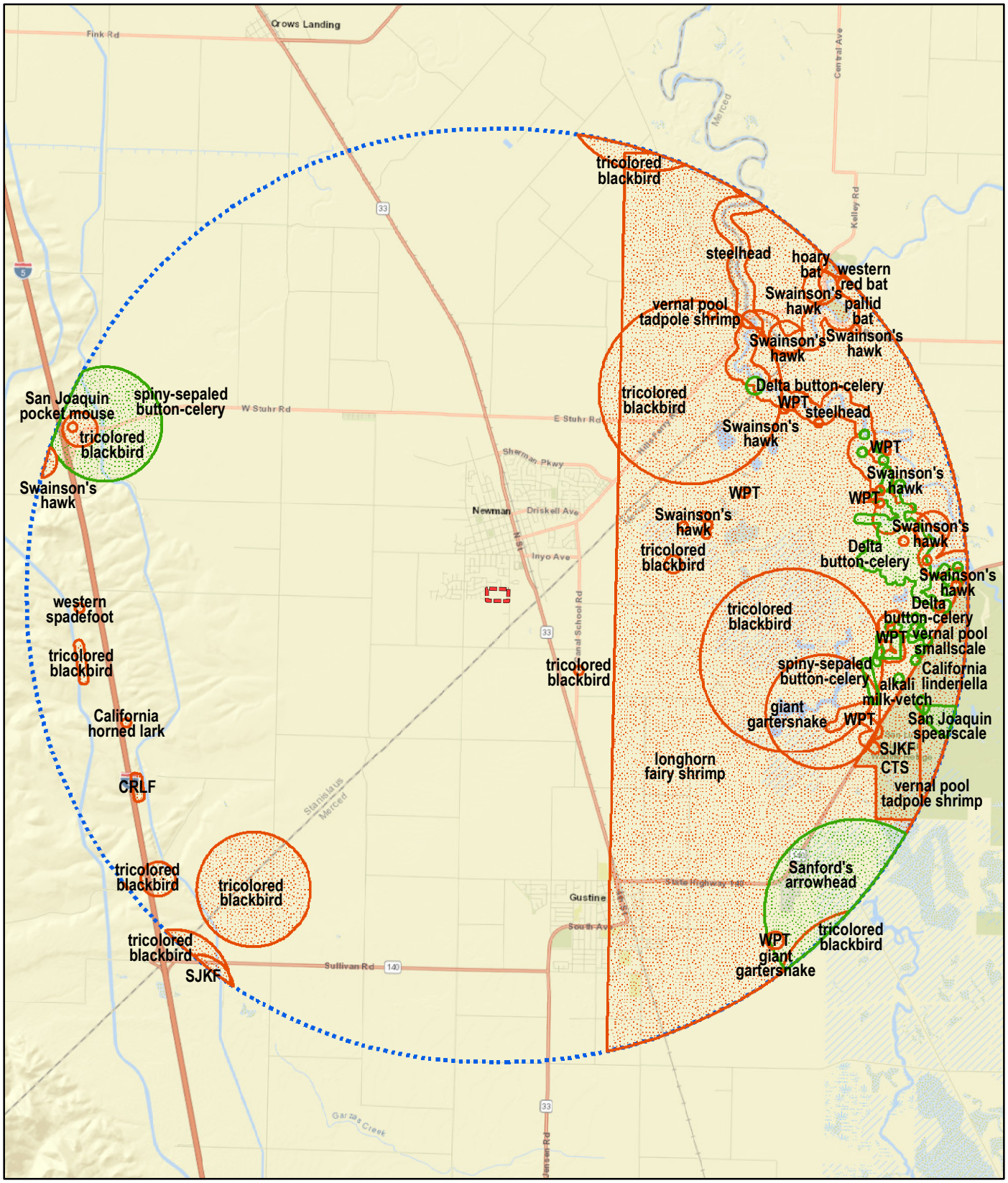
BIO-1 The U.S. Fish and Wildlife Service *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011) shall be implemented prior to initiation of and during any construction activity on the project site to avoid unintended take of individual San Joaquin kit foxes.

Preconstruction/pre-activity surveys for San Joaquin kit fox shall be conducted no less than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity that may impact San Joaquin kit fox. The surveys shall include all work areas and a minimum 200-foot buffer of the project site. The preconstruction surveys shall identify kit fox habitat features on the project site, evaluate use by kit fox and, if possible, assess the potential impacts of the proposed activity. The status of all dens shall be determined and mapped.

If a natal/pupping den is discovered within the project area or within 200 feet of the project boundary, the applicant shall consult with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service to establish an appropriate avoidance buffer. The avoidance buffer shall be maintained until such time as the burrow is no longer active and/or an incidental take permit is determined to be required and is obtained.

In addition, the following measures shall be observed:

a. Project-related vehicles shall observe a 20-mph speed limit in all project areas; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction shall be minimized. Off-road traffic outside of designated project area shall be prohibited.



0 1.5 Miles

Project Site
5-Mile Radius
Special-Status Plants
Special-Status Wildlife

Source: ESRI 2022, CNDDB 2022

CRLF: California Red-Legged Frog
CTS: California Tiger Salamander
SJKF: San Joaquin Kit Fox
WPT: Western Pond Turtle

Figure 6

California Natural Diversity Database Map

Caton Ranch Annexation and Subdivision Initial Study

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b. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 11 of the Construction and Operational Requirements in the Standardized Recommendations must be followed.

c. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the U.S. Fish and Wildlife Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

d. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or project site.

e. No firearms shall be allowed on the project site during construction activities.

f. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets shall be permitted on site during construction activities.

g. Use of rodenticides and herbicides on the project site during construction shall be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the U.S. Fish and Wildlife Service. If rodent control must be conducted, zinc phosphide shall be used because of proven lower risk to kit fox.

h. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape.

i. Any contractor, employee, or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service.

j. The applicant shall submit weekly reports on construction monitoring activities to the City of Newman Community Development Department. An occupancy permit shall not be issued without receipt of the weekly reports.

Implementation of this mitigation measure would reduce the potential significant impact to San Joaquin kit fox to a less-than-significant level by requiring pre-construction surveys for kit fox and the implementation of avoidance, minimization, and mitigation measures should they be found on the project site.

Burrowing Owl. Burrowing owl is a California Species of Special Concern. Burrowing owls live and breed in burrows in the ground, especially in abandoned California ground squirrel burrows. Optimal habitat conditions include large open, dry and nearly level grasslands or prairies with short to moderate vegetation height and cover, areas of bare ground, and populations of burrowing mammals. This species has been observed approximately nine miles southwest of the project site (Occurrence No. 199, CNDDB 2022) and approximately 13 miles northwest of the project site within the City of Patterson (Occurrence No. 588, CNDDB 2022). The project site's non-native grassland provides marginally suitable foraging habitat for burrowing owl, and scattered ground squirrel burrows observed on the site could be utilized for nesting habitat. If burrowing owl is present on or adjacent to the project site, construction activities could result in the loss or disturbance of individual animals. This would be a significant adverse environmental impact. Implementation of the following mitigation measures would reduce the potential impact to burrowing owl to a less-than-significant level.

Mitigation Measure

BIO-2 To avoid loss of or harm to burrowing owl, the following measures shall be implemented:

a. Prior to issuance of a grading permit, and to avoid/minimize impacts to burrowing owls potentially occurring within the project site, the applicant shall retain a biologist qualified in ornithology to conduct surveys for burrowing owl. The qualified biologist shall conduct a two-visit (i.e., morning and evening) presence/absence survey at areas of suitable habitat on and adjacent to the project site boundary no less than 14 days prior to the start of construction or ground disturbance activities. Surveys shall be conducted according to the methods for take avoidance described in the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC 1993) and the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If no burrowing owls are found, a letter report confirming absence shall be prepared and submitted to the City of Newman Community Development Department and no further measures are required.

b. Because burrowing owls occupy habitat year-round, seasonal no-disturbance buffers, as outlined in the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC 1993) and the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012), shall be in place around occupied habitat prior to and during any ground disturbance activities. The following table includes buffer areas based on the time of year and level of disturbance (CDFW 2012), unless a qualified biologist approved by the California Department of Fish and Wildlife verifies through non-invasive measures that either: 1) birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Location	Time of Year	Level of Disturbance Buffers (meters)		
		Low	Med	High
Nesting Sites	April 1 – Aug 15	200 m	500 m	500 m
Nesting Sites	Aug 16 – Oct 15	200 m	200 m	500 m
Nesting Sites	Oct 16 – Mar 31	50 m	100 m	500 m

c. If burrowing owl is found and avoidance is not possible, burrow exclusion may be conducted by qualified biologists only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. Occupied burrows shall be replaced with artificial burrows at a ratio of one collapsed burrow to one constructed artificial burrow (1:1). Evicted burrowing owls may attempt to colonize or re-colonize an area that would be impacted, thus ongoing surveillance during project activities shall be conducted at a rate sufficient to detect burrowing owls if they return.

d. If surveys locate occupied burrows in or near construction areas, consultation with the California Department of Fish and Wildlife shall occur to interpret survey results and develop a project-specific avoidance and minimization approach. Once the absence of burrowing owl has been confirmed, a letter report shall be prepared and submitted to the City of Newman Community Development Department.

Implementation of this mitigation measure would reduce the potential significant impact to burrowing owl to a less-than-significant level by requiring pre-construction surveys for active nests/burrows and the implementation of avoidance, minimization, and mitigation measures should they be found on the project site.

Swainson's hawk. Swainson's hawk is listed as a threatened species under the California Endangered Species Act (CESA). Swainson's hawk is a long-distance migrator. Their nesting grounds occur in northwestern Canada, the western U.S., and Mexico and most populations migrate to wintering grounds in the open pampas and agricultural areas of South America (Argentina, Uruguay, southern Brazil). This round-trip journey may exceed 14,000 miles. The birds return to the nesting grounds and establish nesting territories in early March.

Swainson's hawk nests in the Central Valley of California are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures. These open fields and pastures are their primary foraging areas. Suitable foraging habitat for Swainson's hawk is found in the open agricultural field at the project site and potential nesting habitat can be found in the row of mature Lombardy poplar (*Populus nigra*) growing along the project site's southern boundary. Nine observations of this species have been recorded within five miles of the project site (CNDDB 2022).

Construction activities at the project site could result in the disturbance of nesting sites occupied by Swainson's hawk on or adjacent to the project site, if present. The change in land use from agricultural to developed uses would cause a loss of Swainson's hawk foraging habitat at the project site. Loss or harm to Swainson's hawk or its foraging habitat is considered a significant adverse impact. The California Department of Fish and Game's (now California Department of Fish and Wildlife) *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994) provides guidance on how impacts on Swainson's hawk are to be mitigated. Implementation of the following mitigation measures would reduce the potential impact to Swainson's hawk to a less-than-significant level.

Mitigation Measures

BIO-3 The following measures shall be implemented to avoid loss of or harm to Swainson's hawk and other raptors:

a. Tree and vegetation removal shall be completed during the nonbreeding season for raptors (September 16–January 31).

b. To avoid, minimize, and mitigate potential impacts on Swainson's hawk and other raptors nesting on or adjacent to the project site, retain a qualified biologist to conduct preconstruction surveys and identify active nests on and within 0.5 mile of the project site for construction activities conducted during the breeding season (February 1–September 15). The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction. Guidelines, provided in *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley* (Swainson's Hawk Technical Advisory Committee 2000) or updated, current guidance, shall be followed for surveys for Swainson's hawk. If no nests are found, a report documenting the results of the survey shall be submitted to the City of Newman Community Development Department and no further mitigation will be required.

c. Impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. No project activity shall commence within the buffer areas until a qualified biologist has determined, in coordination with California Department of Fish and Wildlife, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. California Department of Fish and Wildlife guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers for Swainson's hawk nests, but the size of the buffer may be decreased if a qualified biologist, in consultation with California Department of Fish and Wildlife, determine that such an adjustment would not be likely to adversely affect the nest.

   The appropriate no-disturbance buffer for other raptor nests (i.e., species other than Swainson's hawk) shall be determined by a qualified biologist based on site-specific conditions, the species of nesting bird, nature of the project activity, visibility of the disturbance from the nest site, and other relevant circumstances.

Monitoring of all active raptor nests by a qualified biologist during construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined appropriate by a qualified biologist.

BIO-4 If there is an active nest within ten miles of the project site, the following measures shall be implemented to mitigate for the loss of Swainson's hawk foraging habitat:

a. Prior to ground-disturbing activities, suitable Swainson's hawk foraging habitat shall be preserved to ensure replacement of foraging habitat lost as a result of the project, as determined by a qualified biologist, in consultation with California Department of Fish and Wildlife.

b. The habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within Stanislaus County. The mitigation ratio shall be consistent with the guidelines included in the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California* (CDFG 1994). These guidelines specify that the mitigation ratio shall be 1:1 if there is an active nest within one mile of the project site, 0.75:1 if there is an active nest within five miles but greater than one mile away, and 0.5:1 if there is an active nest within 10 miles but greater than five miles away. If there is an active nest within one mile of the project site, the mitigation ratio can be reduced to 0.5:1 if all of the mitigation land can be actively managed for prey production. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area within Stanislaus County.

c. There are two active (within the past five years) Swainson's hawk nests within five miles of the project site (CNDDB Occurrences Nos. 2449 and 2451). To mitigate for the loss of foraging habitat for these nests, replacement foraging habitat shall be preserved at a mitigation ratio of 0.75:1 in consultation with California Department of Fish and Wildlife. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area within Stanislaus County.

If required, pre-construction Swainson's hawk surveys may be required to identify additional nests within ten miles of the project site. If additional nests are observed, foraging habitat shall be preserved following the mitigation ratios outlined above.

Implementation of these mitigation measures would reduce the potential significant impact to Swainson's hawk to a less-than-significant level by requiring foraging habitat mitigation and pre-construction surveys for Swainson's hawk nests on or near the project site.

Bats. Trees in the project area and/or buildings or structures on or adjacent to the project site could provide roosting habitat for special-status bat species known to occur in the vicinity of the project site: hoary bat, pallid bat, and western red bat. These bat species inhabit a wide variety of habitats including grasslands, woodlands, and forests. All three species roost in dense foliage of medium to large trees. Construction activities at the project site could result in the disturbance of roost and natal sites occupied by special-status bats on or adjacent to the project site, if present. Loss or harm to special-status bats is considered a significant adverse impact. Implementation of the following mitigation measure would reduce the potential impact to special-status bat species to a less-than-significant level.

Mitigation Measure

BIO-5 A qualified bat biologist shall perform a bat roost habitat assessment at least 30 days from the start of project activities. If bats or evidence of bats (guano, dead bats) are found to be absent and no suitable habitat exists, a letter report shall be submitted to the City of Newman Community Development Department and no further actions are required. If evidence of past roosting is found, suitable habitats shall be modified to render them unsuitable prior to project activities and a preconstruction survey shall occur within 14 days of the start of project activities. If live bats are found to be present, the qualified bat biologist shall determine whether bats are engaged in maternity roosting, or hibernation. If they are engaged in maternity or hibernation, direct and indirect project impacts shall be avoided, and a no disturbance buffer of at least 100-feet shall be established until such time the bat biologist determines they may be humanely evicted. If active day roosting bats require eviction, the bat biologist shall prepare an eviction plan to submit to the lead agency and CDFW, if there is a state nexus. The eviction plan shall be implemented until it can be determined that all bats have vacated, at which point any remaining buffers may be removed and project activities may commence.

Implementation of this mitigation measure would reduce the potential significant impact to special-status bat species to a less-than-significant level by requiring pre-construction surveys for bats and potential roosting sites and, if found, avoiding any disturbance.

Nesting Birds. Protected nesting bird species, such as loggerhead shrike, and raptor species, such as white-tailed kite, have the potential to nest in buildings or structures, on open ground, or in any type of vegetation, including trees, during the nesting bird season (January 15 through September 15). The project site and surrounding properties contain a variety of trees shrubs, and open grassland areas suitable for nesting. Construction activities, including ground disturbance, can impact nesting birds protected under the federal Migratory Bird Treaty Act and California Fish and Game Code, should nesting birds be present during construction. If protected bird species are nesting adjacent to the project site during the bird nesting season, then noise-generating construction activities could result in the loss of fertile eggs, nestlings, or otherwise lead to the abandonment of nests. Implementation of the following mitigation measure would reduce the potential impact to nesting birds, including loggerhead shrike, to a less-than-significant level.

Mitigation Measure

BIO-6 To avoid impacts to loggerhead shrike and other nesting birds during the nesting season (January 15 through September 15), all construction activities should be conducted between September 16 and January 14, which is outside of the bird nesting season. If construction or project-related work is scheduled during the nesting season (February 15 to August 30 for small bird species such as passerines; January 15 to September 15 for owls; and February 15 to September 15 for other raptors), a qualified biologist shall conduct nesting bird surveys.

a. Two surveys for active bird nests will occur within 14 days prior to start of construction, with the final survey conducted within 48 hours prior to construction. Appropriate minimum survey radii surrounding each work area are typically 250 feet for passerines, 500 feet for smaller raptors, and 1,000 feet for larger raptors. Surveys will be conducted at the appropriate times of day to observe nesting activities. Locations off the site to which access is not available may be surveyed from within the site or from public areas. If no nesting birds are found, a letter report confirming absence will be prepared and submitted to the City of Newman Community Development Department and no further mitigation is required.

b. If the qualified biologist documents active nests within the project site or in nearby surrounding areas, an appropriate buffer between each nest and active construction shall be established. The buffer shall be clearly marked and maintained until the young have fledged and are foraging independently. Prior to construction, the qualified biologist shall conduct baseline monitoring of each nest to characterize "normal" bird behavior and establish a buffer distance, which allows the birds to exhibit normal behavior. The qualified biologist shall monitor the nesting birds daily during construction activities and increase the buffer if birds show signs of unusual or distressed behavior (e.g., defensive flights and vocalizations, standing up from a brooding position, and/or flying away from the nest). If buffer establishment is not possible, the qualified biologist or construction foreman shall have the authority to cease all construction work in the area until the young have fledged and the nest is no longer active. Once the absence of nesting birds has been confirmed, a letter report will be prepared and submitted to the City of Newman Community Development Department.

Implementation of this mitigation measure would reduce the potential significant impact to nesting birds to a less-than-significant level by requiring pre-construction surveys for active bird nests and the implementation of avoidance, minimization, and mitigation measures should they be found on the project site.

b. **Riparian Habitat or Sensitive Natural Communities**. There were no riparian habitat or sensitive natural communities observed at the project site.

c. **Waters of the United States**. A review of the National Wetlands Inventory online database was conducted to identify potential jurisdictional aquatic features on or adjacent

to the project site (USFWS 2022). No National Wetlands Inventory wetlands occur on or adjacent to the project site.

Agricultural drainage ditches on the project site occur along the western, eastern, and southern boundaries. Drainage channels are defined by their ordinary high-water marks on channel banks and their connection to other waterways or aquatic features.

The drainage ditch along the southern and western boundaries of the parcel originates from agricultural operations on the adjacent parcel to the south. This ditch connects to the City's stormwater system at a gated concrete outflow in the northwest corner of the parcel. The drainage ditch along the eastern boundary of the project site appears to be isolated with no flow off of the project site. Due to the high level of maintenance, the drainage canals were largely absent of vegetation.

As the drainage ditch that flows into the City's stormwater system may have connectivity to tributaries or natural streams, it may be subject to USACE jurisdiction under the Clean Water Act. However, both drainages would likely be considered jurisdictional by the Central Valley Regional Water Quality Control Board and California Department of Fish and Wildlife.

Project development could result in the loss of jurisdictional wetlands and other waters of the U.S. Loss of wetlands is considered a significant adverse impact. Implementation of the following mitigation measure would reduce the potential impact to wetlands and other waters of the U.S. to a less-than-significant level.

Mitigation Measure

BIO-7 Prior to initiation of ground disturbance or construction activities within the project boundary, the applicant will retain a qualified biologist to determine the extent of potential wetlands and waterways regulated by the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW).

If the USACE claims jurisdiction, the applicant shall obtain a Clean Water Act Section 404 Nationwide Permit. If the impacts to the drainage features do not qualify for a Nationwide Permit, the applicant will proceed in obtaining an Individual Permit from the USACE. The applicant will then coordinate with the RWQCB to obtain a Clean Water Act Section 401 Water Quality Certification. If necessary, the applicant will coordinate with the CDFW to obtain a Streambed Alteration Agreement.

To compensate for temporary and/or permanent impacts to Waters of the U.S. that would be impacted as a result of the proposed project, mitigation shall be provided as required by the regulatory permits. Mitigation would be provided through one of the following mechanisms:

a. A Wetland Mitigation and Monitoring Plan shall be developed that outlines mitigation and monitoring obligations for temporary impacts to wetlands and other waters as a result of construction activities. The Wetland Mitigation and Monitoring Plan would include thresholds of success, monitoring and reporting requirements, and site-specific

plans to compensate for wetland losses resulting from the project. The Wetland Mitigation and Monitoring Plan shall be submitted to the appropriate regulatory agencies for review and approval during the permit application process.

b. To compensate for permanent impacts, the purchase and/or dedication of land to provide suitable wetland restoration or creation shall ensure a no net loss of wetland values or functions. If restoration is available and feasible, a minimum 1:1 impact to mitigation ratio would apply to projects for which mitigation is provided in advance.

For improvements on the project site, the applicant shall comply with terms and conditions of the permits, including measures to protect and maintain water quality, restore work sites, and mitigation to offset temporary and/or permanent wetland impacts. applicant shall be responsible for implementation of this mitigation measure prior to issuance of a grading permit.

Implementation of this mitigation measure shall ensure that impacts to potentially jurisdictional wetlands and waterways within the project site boundary are mitigated to a less-than-significant level by requiring a wetland assessment/jurisdictional determination and associated permitting.

d. **Wildlife Movement.** Terrestrial species must navigate a habitat landscape that meets their needs for breeding, feeding and shelter. Natural and semi-natural components of the landscape must be large enough and connected enough to meet the needs of all species that use them. Wildlife movement corridors provide connectivity between habitat areas, enhancing species richness and diversity, and usually also provide cover, water, food, and breeding sites.

The project site is not located within any previously defined essential connectivity areas and is also adjacent to existing developed areas (CDFW 2022). The project site is not likely to facilitate major wildlife movement due to current active disturbance. As such, the proposed project would have a less-than-significant impact on wildlife movement.

e. **Local Biological Resource Policies/Ordinances.** The City of Newman 2030 General Plan has goals in place for conserving local biological resources. The Natural Resources Element provides direction regarding the conservation, development, and use of natural resources in and around Newman, including agricultural land, water quality, vegetation and wildlife, and air quality.

Mitigation measures contained in this section will mitigate impacts to biological resources to a less-than-significant level. With these considerations, the proposed project would not conflict with local regulations related to biological resources.

Trees. The City of Newman Street Tree Ordinance (Chapter 11.04) regulates trees growing within the public rights-of-way. The proposed project does not include the removal of any street trees; therefore, the proposed project would not conflict with local regulations.

f. **Conservation Plans.** There are no critical habitat boundaries, habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans applicable to the proposed project site.

5. CULTURAL RESOURCES

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Cause a substantial adverse change in the significance of a historical resource pursuant to section 15064.5?	☐	☐	☐	☒
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5?	☐	☒	☐	☐
c.	Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Comments:

This section is based on the *Cultural Resources Survey Report Prince Road Subdivision Project* prepared by Daniel Shoup, RPA and Blake Plowden, Archaeological/Historical Consultants in February 2015, which is on file with the City of Newman, as well as an updated Central California Information Center conducted in January 2022. The archival research revealed that there are no known Native American cultural resources within the project location, nor are there any known archaeological resources within the project location. The archival research revealed that there was one historic resource located in the project area, the Caton Dairy Farm (P-50-02170).

a. The Caton Dairy Farm includes a residence that was constructed sometime between 1915-1920. The residence was originally located in Hills Ferry before being moved to its current location. In addition to the residence there is a dairy barn (1900-1930), one-car garage, three car garage, shed, and a tank house. However, the 2015 cultural resources survey report, of Caton Dairy Farm concluded that the building complex possesses fair to poor historical integrity and does not appear to meet any of the California Register of Historic Places or National Register of Historic Places significance criteria. Therefore, the proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to section 15064.5.

b. There are no known archaeological resources identified within the project area. This includes prehistoric and historic archaeological sites. However, there could be disturbance or destruction of unknown cultural or historic resources resulting from the development of the project area. Although there is no evidence of archaeological resources on the project site, there is the potential during project-related excavation and construction for the discovery of archaeological resources. This would be considered a significant impact. Implementation of the following mitigation measures would reduce this potential, significant impact to a less than significant level.

Mitigation Measure

CR-1 If any prehistoric or historic subsurface archaeological resources, including tribal cultural resources, are discovered during ground-disturbing activities:

a. All work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to CEQA Guidelines Section 15064.5.

b. If any find is determined to be significant, representatives from the City of Newman Community Development Department and the archaeologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation.

c. All significant prehistoric cultural materials and or tribal cultural resources recovered shall be, returned to Native American tribes traditionally and culturally affiliated with the area.

d. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, proposed project design, costs, and other considerations.

e. If avoidance is infeasible, other appropriate measures (e.g., data recovery) would be implemented.

f. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is being carried out.

c. Although there are no formal cemeteries or Native American burial grounds known to exist at the site, there is a potential that construction activities could accidentally uncover human remains. Disturbance of Native American skeletal remains during the project's construction would be a significant, adverse environmental impact. However, implementation of the following mitigation measure would ensure potential impacts are less than significant.

Mitigation Measure

CR-2 California Health and Safety Code Section 7050.5 and the CEQA Guidelines Section 15064.5(e) contain the mandated procedures of conduct following the discovery of human remains. According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The Stanislaus County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours, who would, in turn, notify the person the Native American Heritage Commission identifies as the Most Likely Descendant of any human remains. Further actions shall be determined, in part, by the desires of the Most Likely Descendant. The Most Likely Descendant has 48 hours to make recommendations regarding the disposition of the

remains following notification from the Native American Heritage Commission of the discovery. If the Most Likely Descendant does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the Most Likely Descendant's recommendations, the owner or the descendent may request mediation by the Native American Heritage Commission.

6. ENERGY

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b.	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Comments:

a. Energy impacts are assessed based on the proposed project energy demand profile and on its relationship to the state's energy efficiency regulations and the City's land use planning regulations. Both are summarized below.

Projected Energy Use. The proposed project would result in an increased overall demand for electricity, natural gas and transportation fuel. A summary of projected energy demand is provided below.

Regarding electricity demand, according to the California Energy Commission Energy Consumption Data Management System, in 2020, total electricity consumption in Stanislaus County was 5,055,970,952 kilowatt-hours (kWh). Section 5.3, Energy by Land Use – Electricity, in the project CalEEMod results included in Appendix B show projected electricity demand would be approximately 180,190 kWh per year. Projected electricity demand would be approximately .04 percent of countywide demand in 2020.

Regarding natural gas, the Energy Consumption Data Management System database shows that in 2020, total natural gas consumption in Stanislaus County was 198,619,200 therms. Section 5.2, Energy by Land Use – Natural Gas, in the project CalEEMod results included in Appendix B show that projected natural gas demand would be about 264,979,000 BTU per year or approximately 2,650 therms per year. This is about .001percent of countywide demand in 2020. As described in Section 8, Greenhouse Gas Emissions, of this initial study, a mitigation measure has been included that would prohibit use of natural gas in the residential portion of the proposed project. Consequently, the natural gas demand reported here would be eliminated.

The proposed project would generate new traffic trips that would increase vehicle miles traveled as compared to existing conditions. With increased vehicle miles comes an increase in transportation fuel consumption. Table 4.2, Trip Summary Information in the CalEEMod results included in Appendix B show projected annual vehicle miles traveled at 3,282,677. The Emissions Factor Model was used to calculate fuel demand based on

the vehicle miles traveled. The model uses vehicle miles traveled as an input, with one of the outputs being transportation fuel demand. The results, included in Appendix B, show that annual fuel demand would be about 152,162 gallons.

The analysis in Section 17, Transportation, concludes that the proposed project would have a less-than-significant impact from generating vehicle miles traveled. This suggests that transportation fuel demand may be lower than would be expected for a project whose vehicle miles traveled impact is significant.

Regulatory Requirements. A multitude of state regulations and legislative acts are aimed at improving vehicle fuel efficiency, energy efficiency, and enhancing energy conservation. For example, the Pavley I standards focus on transportation fuel efficiency. The gradual increased use of electric cars powered with cleaner electricity will reduce consumption of fossil fuel. Vehicle miles traveled are expected to decline with the continuing implementation of Senate Bill 743, resulting in less vehicle travel and less fuel consumption. In the renewable energy use sector, representative legislation for the use of renewable energy includes, but is not limited to, Senate Bill 350 and Executive Order B-16-12. In the building energy use sector, representative legislation and standards for reducing natural gas and electricity consumption include, but are not limited to, Assembly Bill 2021, CALGreen, and the California Building Standards Code.

The California Building Standards Code is enforceable at the project-level. The California Energy Code (California Code of Regulations, Title 24, Part 6), which is incorporated into the California Building Standards Code, was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The California Energy Code is updated every three years by the California Energy Commission as the Building Energy Efficiency Standards to allow consideration and possible incorporation of new energy efficiency technologies and construction methods into new construction, renovations, and existing buildings. Energy standards have supported California's long-term strategy to meet energy demand, and conserve resources. The Energy Code governs window and door materials, lighting, electrical panels, insulation, faucets and additional building features. The requirements vary between home and business buildings, as well as among climate zones in which they are implemented. The current 2022 Energy Code updates the prior 2019 code by requiring actions/features that continue to support California's gradual transition away from use of fossil fuels, as well as to improve environmental quality.

The Green Building Standards Code (CALGreen), which requires all new buildings in the state to be more energy efficient and environmentally responsible, was most recently updated in July 2022 and will take effect on January 1, 2023. These comprehensive regulations are intended to achieve major reductions in interior and exterior building energy consumption.

A project could be considered to result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption of energy if its energy demand is extraordinary relative to common land use types, its gross energy demand is excessive

relative to total demand in Stanislaus County, and/or it fails to comply with energy efficiency/conservation regulations that are within the applicant's control. The project is a common land use type that is consistent with the City's general plan. The project energy demand would not be excessive relative to total countywide demand or relative to other land use projects and would not inherently be a sources of wasteful energy demand. The project applicant would be required to comply with Title 24 of the current California Building Code with respect to energy efficiency. The proposed project would consume energy, but it would not be inefficient, wasteful, or unnecessary. Therefore, the impact would be less than significant

b. There are no local or state renewable energy plans that apply to the proposed project. However, the California Building Standards Code requires that residential projects of the type proposed be built to meet the Building Energy Efficiency Standards that are in effect at the time building permits for individual homes are issued. For the proposed project, these standards require that each home include a solar photovoltaic system to ensure that each unit has net zero energy demand. The Building Energy Efficiency Standards also include requirements for building energy efficiency. Consequently, the project would comply with the fundamental state energy use standards for residential development. The project would not conflict with or obstruct a state or local plan for energy efficiency.

7. GEOLOGY AND SOILS

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	(1) 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? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
	(2) Strong seismic ground shaking?	☐	☐	☐	☒
	(3) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
	(4) Landslides?	☐	☐	☐	☒
b.	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c.	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?	☐	☐	☐	☒
d.	Be located on expansive soil, creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e.	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?	☐	☐	☐	☒
f.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Comments:

The analysis presented below has been written against the backdrop of CEQA case law addressing the scope of analysis required for potential impacts resulting from existing environmental hazards found at the site or in the vicinity of a site for a proposed project. In California Building Industry Association v. Bay Area Air Quality Management District (2015) 62

Cal.4th 369, 377, the California Supreme Court held that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents" (italics added). The court reasoned that "ordinary CEQA analysis is concerned with a project's impact on the environment, rather than with the environment's impact on a project and its users or residents" (Id. at p. 378).

The court did not hold, however, that CEQA never requires consideration of the effects of existing environmental conditions on the future occupants or users of a proposed project. But the circumstances in which such conditions may be considered are narrow: "when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment—and not the environment's impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions" (Id. at pp. 377-378, italics added).

a. **Known Earthquake Fault**. The project site is not located within an earthquake fault zone designated by the Chief of the California Geological Survey pursuant to the Alquist-Priolo Act (California Department of Conservation 2021). The nearest fault to the project site is the San Joaquin Fault located approximately three miles west of the site. Therefore, the project would not exacerbate the potential substantial adverse effects involving rupture of a known earthquake fault.

Seismic Ground-Shaking. Faults in the region are capable of generating significant earthquakes producing ground shaking in the City of Newman. According to the City general plan EIR, ground-shaking seismic hazards in the City of Newman are lower than most of California (City of Newman 2006, p. 4.6-7). Further, the City general plan policies HS-1.3 and HS-1.4 require new construction to conform to the California Building Code, which includes seismic design and construction requirements. Therefore, with compliance of policies HS-1.3 and HS-1.4, the proposed project would not exacerbate the potential substantial adverse effects involving seismic ground-shaking.

Liquefaction. According to the California Department of Conservation's "EQ Zapp," the City of Newman and surrounding areas have not yet been mapped to identify the potential for soil liquefaction (California Department of Conservation 2021). However, the City general plan EIR concludes that areas in and around Newman most susceptible to liquefaction include areas along the San Joaquin River and where there are high groundwater levels (City of Newman 2006, p. 4.6-7). The project site is not located along the San Joaquin River nor do high groundwater levels exist on the site; therefore, the risk of the project exposing people or structures to liquefaction hazards is low. However, the proposed project would not exacerbate the potential for low liquefaction hazards on the project site.

Landslides. The project site is relatively flat and not adjacent to any slopes that could result in a landslide event. Therefore, the proposed project would not exacerbate potential adverse effects involving landslides.

b. **Soil Erosion.** According to the City general plan EIR, the soil series present on the site are Dosamigos (City of Newman 2006, Figure 4.6-3). Table 4.6-1 of the City general plan EIR identifies the Dosamigos soil series as having moderate erosion potential. However, the City general plan policies HS-1.1 and HS-1.2 serve to reduce the potential for erosion associated with soil conditions by requiring soils and geotechnical reports for new development and policy HS-1.4 requires the adoption and enforcement of the most current California Building Code. In addition, the project's recommended condition of approval #9 requires that an Erosion Control Plan be prepared as part of the project's improvement plans and recommended condition of approval #6 requires that the improvement plans for drainage, grading, and erosion control be submitted for City Engineer approval prior to the approval of a Final Map. Therefore, the proposed project would not result in substantial soil erosion or the loss of topsoil.

c. **Unstable Geologic Unit or Soil**. Based on the City general plan, general plan EIR and the *Groundwater Sustainability Plan for the San Joaquin River Exchange Contractors GSP Group in the Delta-Mendota Subbasin* (San Joaquin River Exchange Contractors GSP Group 2019, Appendix Q), there is no indication that unstable geologic units are located in the Newman. Therefore, the project would not 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

d. **Expansive Soil.** According to the City general plan EIR, the soil series present on the site are Dosamigos (City of Newman 2006, Figure 4.6-3). Table 4.6-1 of the City general plan EIR identifies the Dosamigos soil series as having moderate/high expansion potential. The proposed project would be required to comply with City general plan policies HS-1.3 and HS-1.4, which require new construction to conform to the California Building Code inclusive of seismic design and construction requirements. Final design of the proposed project would require review and approval by the City of Newman Building Department to confirm conformance with the California Building Code standards. Therefore, the proposed project would not create a direct or indirect risk to life or property associated with expansive soils.

e. **Septic Systems.** The proposed project would connect to the City's municipal wastewater treatment system.

f. **Unique Geologic Features.** The project site is relatively flat with no unique geologic features present (Google Earth 2022 and EMC Planning Group Site Investigation).

Paleontological Resources. According to the City general plan EIR (2006), the closest paleontological resources (i.e., fossils) to the City of Newman are located around the City of Gustine and City of Patterson, both of which are approximately four miles south and twelve miles north of the City of Newman, respectively. However, the 2016 Stanislaus County General Plan EIR (Figure 3.6-5 General Paleontological Sensitivity Map of Stanislaus County) identifies the City of Newman in a high paleontological sensitivity zone. Therefore, it is possible that paleontological resources could be accidentally discovered during excavations or other related construction activities associated with

development of the project site. Directly or indirectly destroying a unique paleontological site is considered a significant, adverse environmental impact. Implementation of the following mitigation measure would ensure this potential impact would be less than significant.

Mitigation Measure

GEO-1 The following language shall be included in all demolition and grading permits: "If paleontological resources are discovered during demolition and earthmoving activities, work shall stop within 100 feet of the find until a qualified paleontologist can assess if the find is unique and, if necessary, develop appropriate treatment measures in consultation with the City Community Development Department."

8. GREENHOUSE GAS EMISSIONS

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐
b.	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Comments:

a. The proposed project will generate greenhouse gas (GHG) emissions primarily from transportation, energy use, water and wastewater, and solid waste disposal sources. These emissions will contribute to the cumulative accumulation of GHG emissions is the atmosphere. Human activity has increased the intensity of the greenhouse effect by releasing increasing amounts of GHGs into the atmosphere. The GHG emissions that are already in the atmosphere will continue to cause climate change for years, just as the warming being experienced now is the result of emissions produced in the past.

Increased concentrations of GHGs in the atmosphere result in increased air, surface, and ocean temperatures. Many of the effects and impacts of climate change stem from resulting changes in temperature and meteorological responses to those changes. Effects of climate change include, but are not limited to: reduced snowpack, more frequent and extreme storm events, sea level rise, reduced water supply availability, diminished air quality, increased wildfire hazards, increased public health concerns, and ecosystem changes. These effects are global and cumulative. That is, the contribution of any single land use development project to any one or more of these effects cannot be isolated.

Federal, state, and local governments have adopted statutes, regulations, and plans to reduce GHG emissions from land use projects like the proposed project. California has been at the forefront of addressing climate change and employs a suite of statutes, regulations and guidance to implement the statutes, and executive orders for this purpose. The statutes can be categorized into four broad categories: (i) statutes setting numerical statewide targets for GHG reductions, and authorizing California Air Resources Board to enact regulations to achieve such targets; (ii) statutes setting separate targets for increasing the use of renewable energy for the generation of electricity throughout the state; (iii) statutes addressing the carbon intensity of vehicle fuels, which prompted the adoption of regulations by California Air Resources Board; and (iv) statutes intended to facilitate land use planning consistent with statewide climate objectives. Statues and guidance that is particularly germane to the proposed project is referenced below.

The City of Newman has not adopted a plan for reducing GHGs, nor has the City adopted a threshold of significance for GHGs. Lacking their own adopted guidance, local agencies commonly refer to guidance from regional air districts for assessing the impacts of GHGs. The city is located within boundary of the San Joaquin Valley Air Pollution Control District. The San Joaquin Valley Air Pollution Control District developed GHG analysis guidance in 2008. Given the evolution of climate change science, regulatory environment, and case law that has occurred since then, that guidance is no longer applicable. Such local and regional GHG reduction plans are commonly adopted to guide local agencies in reducing their fair share of GHG emissions to help meet state wide GHG reduction targets.

Given the absence of a local or regional threshold of significance or plan for reducing GHGs, the City is referencing guidance provided by and adjacent air district, the Sacramento Metropolitan Air Quality Management District (SMAQMD), for determining the significance of GHG impacts of the proposed project. The SMQAMD guidance is found in Chapter 6, Greenhouse Gas Emissions, its *Guide to Air Quality Assessment in Sacramento County* (Sacramento Metropolitan Air Quality Management District 2021). The "assessment guide" was originally adopted in 2009, but was most recently updated in 2021. Thus, it reflects current practice and the cumulative efforts of the state and the SMAQMD to manage GHG emissions from land use projects.

For addressing GHG impacts in CEQA documents, the assessment guide relies on the SMAQMD's *CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plan* (Sacramento Metropolitan Air Quality Management District 2020). The "thresholds guidance" document includes substantial evidence used to identify quantified construction and operational thresholds of significance and to identify best management practices (BMPs) for new land development projects, which if incorporated into a proposed project, would render its operational GHG impact less than significant. The thresholds are designed to reduce emissions from individual land use projects. The thresholds guidance is based largely on the air district's analysis of GHG emissions trends and on state level GHG reduction targets and strategies embedded in state statutes and executive orders, particularly the 2017 Scoping Plan prepared by the California Air Resources Board. The 2017 Scoping Plan includes state strategies for reducing GHG emissions to achieve the state wide GHG reduction target of 40 percent below 1990 levels by 2030 as codified in Senate Bill 32. It identifies a key role for local governments by recommending that they establish GHG reduction goals for both their municipal operations and the community consistent with those of the state. The proposed project would be operational well before 2030. Therefore, guidance for reducing emissions to meet the state 2030 target is particularly relevant.

Construction GHG Emissions. The SMAQMD threshold of significance for construction emissions is 1,100 metric tons of GHG equivalent (MT CO_2e) per year. Construction emissions for the proposed project were quantified using CalEEMod as described in the technical memo *Caton Ranch Residential Subdivision – Criteria Air Pollutant and Greenhouse Gas (GHG) Emissions Modeling: Methodology, Assumptions, and Results* in

Appendix B. The technical memorandum also describes assumptions used in the modeling process. Section 2.1, Overall Construction, in the CalEEMod results in Appendix B, shows that over the two-year construction period from 2023 to 2024, the highest annual construction emissions volume is projected at 582.18 MT CO_2e in 2024. This is substantially below the threshold of significance. Construction GHG impacts would be less than significant.

Operational GHG Emissions. For operational emissions (emissions that would occur annually due to the long-term operation of a project), the significance determination is based on a multi-step process. First, operational emissions are to be quantified using CalEEMod. The technical memorandum in Appendix B identifies these results, which are replicated in Table 3, Net Annual Operational GHG Emissions. Refer to the technical memorandum for discussion of modeling assumptions, a description of carbon sequestration, and description of existing sources of GHG emissions within the site whose GHG volume is subtracted from the total annual project emissions volume.

Table 3 Net Annual Operational GHG Emissions

Operational Emissions[1]	Loss of Carbon Sequestration Potential	Total Project Emissions	Existing Emissions	Net Project Emissions
1,482.91	3.82	1,506.14	<37.11>	1,449.63

SOURCE: EMC Planning Group 2022

NOTE: All values are reported in MT CO2e

Independent of a project's annual operational emissions volume, to be consistent with GHG emissions targets described in the thresholds guidance document, are to incorporate the following two BMPs:

1. No natural gas: Projects shall be designed and constructed without natural gas infrastructure; and
2. Electric vehicle (EV) ready: Projects shall meet the current California Green Building Code (CALGreen) Tier 2 standards for single-family, townhome and duplex projects, except all EV spaces shall instead be EV ready.

If either or both of these BMPs cannot be implemented, alternatives may be proposed that demonstrate the same level of GHG reductions that would accrue from implementing each of the BMPs.

The SMAQMD has established a quantified threshold of significance for operational GHG emissions of 1,100 MT CO_2e. As stated in the assessment guide, if after subtracting the GHG reduction volumes from implementing BMPs 1 and 2 from a project's annual operations emissions volume, the volume drops below 1,100 MT CO_2e, the project can be found to have a less-than-significant impact and no further analysis is required. Section 5.2, Energy by Land Use – Natural Gas, in the proposed project CalEEMod results in Appendix B shows that annual emissions from natural gas would total 142.24 MT CO_2e. Total project emissions would drop to 1,307.39 MT CO_2e with BMP 1. The

emissions reduction from implementing BMP 2 would be nominal relative to the total mobile source emissions of 1,137.15 MT CO_2e as reported in Section 2.2, Overall Operational, of the proposed project CalEEMod results. Therefore, with BMPs 1 and 2, annual operational emissions would still exceed the threshold of significance.

Where the project GHG emissions volume exceeds 1,100 MT CO_2e per year after implementing BMPs 1 and 2, a third BMP is required:

3. Residential projects shall achieve a 15 percent reduction in vehicle miles traveled (VMT) per resident.

The *Caton Ranch Vehicle Miles Traveled Analysis* (VRPA Technologies 2022) was prepared to evaluate the project's VMT impacts. The methodology used and conclusions of the analysis are described in detail in Section 17, Transportation, in this initial study. The analysis concludes that the VMT impact of the project is less than significant; therefore, no mitigation to reduce VMT is required.

As stated in the threshold's guidance document, projects that incorporate BMPs 1 and 2 and meet the BMP 3 requirement regarding VMT can be found to be consistent with the GHG reduction targets identified in the threshold document and described in the assessment guide as the basis for determining the significance of project GHG impacts. The project has already been demonstrated to be consistent with BMP 3. Implementation of the following mitigation measure would ensure that project design features needed to implement BMPs 1 and 2 are integrated into the proposed project. With implementation of the mitigation measure, the proposed project would have a less-than-significant impact from generating GHG emissions.

Mitigation Measure

GHG-1 The proposed project shall be designed to: 1) include no natural gas infrastructure, and 2) include electric vehicle support improvements to make the project EV ready, with improvements made consistent with the latest adopted version the CALGreen Tier 2 standards, except that all EV capable spaces shall be instead EV ready. Inclusion of these design elements in the final project plans shall be verified by the City Building Official prior to issuance of a building permit.

b. Given that the City does not have an adopted plan for reducing GHG emissions, the SMAQMD's guidance for assessing GHG emissions is considered to be the applicable plan for reducing GHG emissions. The SMAQMD's guidance is based in significant part on demonstrating consistency with the 2017 Scoping Plan. The 2017 Scoping Plan identifies strategies for meeting the state's 2030 GHG emissions reduction target of 40 percent below 1990 levels by 2030 as codified in Senate Bill 32. Because the proposed project would be fully operational before 2030 and would implement the three BMPs identified in the SMAQMD guidance (with required implementation of mitigation measure GHG-1), it would be consistent with that guidance and by extension with the 2017 Scoping Plan. Consequently, the proposed project would have no impact from conflict with the applicable plan for reducing GHG emissions.

9. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b.	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?	☐	☐	☐	☒
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, create a significant hazard to the public or the environment?	☐	☐	☐	☒
e.	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 a public-use airport, result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g.	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Comments:

a. The proposed project is a residential subdivision that does not include the routine use storage, transport, ad disposal of hazardous materials; therefore, the project would not create significant hazard to the public or environment.

b. The project site is currently in agricultural use and given this history, potential concern is noted regarding the use of pesticides, herbicides, and fertilizers.

The potential of an accidental release of hazardous materials from the site soils into the environment would be most likely to occur during the site grading activities and site

remediation activities. This potential risk would be considered a significant environmental impact. The City general plan includes policy HS-4.4, which requires that a site assessment for hazardous and toxic soil contamination be prepared prior to approving development where it is deemed necessary based on the history of a property's land use. A *Phase I Environmental Site Assessment of 29101 and 29113 Prince Road Assessor Parcel Numbers 026-015-013 and -014 Stanislaus County in Newman, California* (Papineau Environmental Service 2003) (Phase I ESA) was prepared in 2003 for an earlier iteration of the residential development at this project site. The Phase I ESA tested soil samples on the project site and concluded that the property has not been impaired by residues left from broad application of persistent chlorinated pesticides.

Therefore, the proposed project complies with policy HS-4.4 and would not 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.

c. The project site is located within one-quarter of a mile from Von Renner Elementary School. However, development of the site with residential uses would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. Therefore, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. The project is not located on a site included on a list of hazardous materials sites that are compiled pursuant to Government Code section 65962.5 and, as a result, would not create a significant hazard to the public or the environment (California Department of Toxic Substances Control 2022).

e. The project site is not located within two miles of a public airport or public use airport; the nearest is the Gustine Airport located over four miles southeast of the site. Therefore, the project would not expose persons to a safety hazard related to airports.

f. The proposed project would comply with City general plan policies set in place to ensure that identified emergency routes are kept free of all traffic impediments resulting from new projects both during and after construction. Such policies include policy HS-5.4, which requires new neighborhoods in the City of Newman to have adequate emergency response times for new development. The proposed project would be required to comply with the City general plan policies and the City of Newman Fire and Building Departments shall review construction plans for roadway modifications and establish that the proposed road and driveways meet all ordinance and California Building Code requirements for emergency access.

Compliance with City general plan policies and the review and approval of project plans by the City of Newman Fire and Building Departments would ensure that the project does not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

g. The project site is surrounded by existing residential and agricultural uses and is not near any wildlands resulting in the danger of wildfires to be considered low (City of Newman 2006, p. 4.7-11). Therefore, it is not likely that the proposed project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

Refer also to Section 20, Wildfire.

10. HYDROLOGY AND WATER QUALITY

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒
b.	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c.	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:				
(1)	Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
(2)	Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
(3)	Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
(4)	Impede or redirect flood flows?	☐	☐	☒	☐
d.	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e.	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Comments:

a. Implementation of the proposed project would result in the demolition of the existing single-family residence and associated farming structures to 112 single-family residences. Stormwater from the proposed project would be collected in the onsite storm drainage facilities, flow towards the City of Newman storm drainage system located within Canyon Creek Drive where it is discharged to the Newman Wasteway to the south, and eventually connect to the San Joaquin River and adjoining wetlands east of the city.

The Newman Wasteway and San Joaquin River are listed as impaired water bodies under section 303(d) of the federal Clean Water Act and stormwater discharge from the development would be regulated. The City has adopted stormwater management and discharge control ordinances (Chapter 11.12 of the zoning code) and the City general plan includes policies NR-2.2 (stating that new developments shall be designed and constructed using best management practices), NR-2.5 (which requires developers to prepare and implement sediment control and soil erosion plans featuring mitigation of sediment runoff), and NR-2.6 (stating that the City shall comply with the requirements of the National Pollution Discharge Elimination System) that would all apply to the project.

Construction activities that would result in disturbance of one or more acres would be required to comply with the General Permit for Storm Water Discharges (General Construction Permit); the proposed project includes disturbance to more than 20 acres and, therefore, would be subject to the General Construction Permit. Under the General Construction Permit, the preparation of a Storm Water Pollution Prevention Plan for the project site would be required. The Storm Water Pollution Prevention Plan includes best management practices for erosion and sediment control, site management, and runoff controls.

During the operational phase of the proposed project, urban pollutants can mix with the stormwater runoff from the project site potentially affecting the receiving waters. If a project creates or replaces more than 2,500 square feet of impervious surfaces, the project would be subject to the requirements of the National Pollutant Discharge Elimination System Phase II Small MS4 General Stormwater Permit. These requirements include the use of low impact design, which address the capture and reuse of runoff from impervious services, methods of stormwater harvesting, and the prevention of hydromodification. The use of low impact design measures would ensure that pollutants in stormwater are treated before being discharged from the project site, and would ensure that peak runoff from the site does not exceed existing volumes.

Implementation of City policies and procedures presented above would ensure the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

b. The City of Newman relies entirely on groundwater and is located within the Delta-Mendota Subbasin. Groundwater storage under the City of Newman is positively impacted through recharge from the San Joaquin River Exchange Contractors Groundwater Sustainability Agency (Newman's groundwater sustainability agency) whose contribution of recharge helps maintain adequate groundwater storage to offset storage reductions caused by development within the City of Newman (San Joaquin River Exchange Contractors GSP Group 2019). The proposed project's 1.9-acre dual usage park located at the eastern side of the site would be used to support groundwater recharge. As discussed in Section 19.0, Utilities and Service Systems, anticipated supplies of groundwater are sufficient to meet all demands through the year 2040 even under drought conditions (City of Newman 2016, p. 58). Refer to checklist question "b" of Section 19.0 for more detail.

Development at the project site with residential uses has been evaluated in the City general plan EIR and anticipated in the City general plan. Further, the City's *2015 Urban Water Management Plan*, which concludes that there are sufficient groundwater supplies through 2040, was prepared using the information found within the City general plan, which anticipates residential uses at the site. Therefore, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge.

See also Section 19, Utilities and Services System, regarding sufficient water supplies regarding existing and proposed water use.

c. There are no streams or rivers located on the project site. However, the proposed project would increase the number of impervious surfaces due to construction of the single-family residences. Therefore, the project would alter the existing drainage pattern of the site. Potential impacts from the increase in impervious surfaces are discussed below:

Erosion. Development of the proposed project may lead to siltation and/or erosion on- or offsite, though not at substantial levels. The project would comply with general plan policies HS-1.1, HS-1.2, and HS-1.4, which serve to reduce the potential for erosion associated with soil conditions by requiring soils and geotechnical reports for new development and complying with the California Building Code. Compliance with these general plan policies would ensure this impact would remain less than significant.

Flooding. The proposed project is required to prepare and implement an Erosion Control Plan and Storm Water Pollution Prevention Plan outlining the control measures and drainage facility designs that would be incorporated into the project plans; refer to the responses under checklist question "b" in Section 7, Geology and Soils, and under checklist question "a" above, which would ensure this impact would remain less than significant.

Runoff. According to the project's subdivision map, the project would connect into the existing drainage system on Canyon Creek Drive. The Storm Water Pollution Prevention Plan required by the General Construction Permit would outline how stormwater created onsite would be treated and directed towards the City of Newman's existing storm drainage system. According to the City general plan, the City plans to upgrade 750 to 1,000 feet of a major pipe at Inyo Avenue to a 60-inch diameter to increase drainage capacity for runoff (p. 4.8-6). However, this upgrade has not occurred yet (Kathryn Reyes, email message, February 1, 2022). The Storm Water Pollution Prevention Plan would also illustrate how best management practices and low impact design measures would be implemented on the project site ensuring this impact would remain less than significant.

Flood Flows. As discussed under checklist question "d" below, the project site's eastern edge is located within a 100-year flood hazard zone and, therefore, flood flows may be of concern in relation to development of the project site. However, the City general plan EIR concludes that with implementation of City general plan policies, development

anticipated by the City general plan would have a less than significant impact with respect to flooding. See checklist question "d" below for City general plan policies and ordinances applicable to the project.

d. The project site is not located within a coastal area; therefore, tsunamis are not considered a significant hazard at the site. The project site is also not located within any dam inundation area as identified in the City general plan EIR Figure 4.8-2 and the potential risk of seiche is low in the City of Newman (City of Newman 2006, p. 4.18-15).

The eastern edge of the project site along Prince Street is located within the 100-year flood hazard zone while the remaining portion of the project site is not within a flood hazard area (FEMA 2022). The City has adopted a floodplain management ordinance (Chapter 4.11 of the zoning code) to regulate construction within mapped flood zones. The project would also be subject to City general plan policies HS-2.1 and HS-2.5, which require that new residential development be constructed so that the lowest floor is at least 12 inches above the 100-year flood level and ensuring that all regulations adopted by the Federal Emergency Management Agency are complied with.

The proposed project would comply with the City general plan policies and ordinances related to flood hazards in residential developments in order to reduce any potential impacts to a less-than-significant level.

e. The Sustainable Groundwater Management Act is a State law requiring groundwater basins to be sustainable. The act enables eligible local agencies to form groundwater sustainability agencies, develop groundwater sustainability plans for designated basins in their jurisdiction by 2020, and achieve groundwater sustainability within 20 years of plan implementation. The San Joaquin River Exchange Contractors is the groundwater sustainability agency for the City of Newman. In December 2019, the *Groundwater Sustainability Plan for the San Joaquin River Exchange Contractors GSP Group in the Delta-Mendota Subbasin* was adopted.

The proposed project would not conflict with this Plan because it is required via the General Construction Permit to prepare a Storm Water Pollution Prevention Plan that would illustrate the project's implementation of onsite treatment control measures that would detain storm water runoff onsite and ultimately drain to the San Joaquin River and adjoining wetlands, thereby allowing for groundwater recharge. The project would also implement the City general plan policies and ordinance discussed under checklist question "a" in order to reduce adverse impacts to groundwater recharge. As concluded in the discussion under checklist question "b," the proposed project would not contribute to a substantial depletion of groundwater supplies or interfere substantially with groundwater recharge, and, therefore, would not conflict with the sustainable groundwater management plan.

11. LAND USE AND PLANNING

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Physically divide an established community?	☐	☐	☐	☒
b.	Cause any 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?	☐	☒	☐	☐

Comments:

a. The proposed project is located adjacent to the Newman city limits and includes development of residential uses, similar to the uses found surrounding to the project site. The proposed project would not physically divide an established community.

b. The proposed project includes pre-zoning the site to be consistent with the City general plan designation of Medium Density Residential and also includes annexation into the City of Newman where the project would comply with the LAFCO process and policies. The project site is located within the City of Newman's Primary Sphere of Influence, which considers development at the site a priority over other land within the City of Newman's Sphere of Influence. With implementation of the proposed project (inclusive of annexation and pre-zoning into the City of Newman), the project would be consistent with the City's zoning of the site for residential uses.

The proposed project also includes a subdivision map. The project's subdivision map would meet all required regulations and designs pursuant to the City's zoning code Chapter 6.02, General Subdivision Regulations and Design.

As concluded in Section 10, Hydrology and Water Quality, the proposed project would not conflict with the adopted groundwater sustainability plan through its implementation of stormwater control measures and best management practices.

There are no critical habitat boundaries, habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans applicable to the proposed project site. The proposed project is also consistent with the City general plan and, therefore, would not result in a significant impact on the habitat conservation plan.

As discussed in Section 13.0, Noise, the proposed project, as mitigated, would not conflict with general plan policies or municipal code requirements for reducing exposures to unacceptable noise due to construction activities.

For these reasons, the proposed project would not result in significant physical environmental impacts due to conflicts with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.

12. MINERAL RESOURCES

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Result in loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated in a local general plan, specific plan, or other land-use plan?	☐	☐	☐	☒

Comments:

a-b. According to the City general plan EIR, the City of Newman does not have designated important mineral resources recovery areas around Newman (City of Newman 2006, p. 4.6-4). Development in accordance with the City general plan would not directly affect any designated Aggregate Resource Areas or areas classified as MRZ-2 for concrete-grade aggregate, since such areas are well outside the City of Newman Sphere of Influence where development of the project site would occur. Therefore, the proposed project would not result in the loss of availability of a known or locally important mineral resources.

13. NOISE

Would the project result in:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	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 in applicable standards of other agencies?	☐	☒	☐	☐
b.	Generation of excessive ground-borne vibration or ground borne noise levels?	☐	☐	☐	☒
c.	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, expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Comments:

a. The *Acoustical Analysis Caton Ranch Subdivision, Phase II Newman, California* (acoustical analysis) was prepared for the proposed project by WJV Acoustics, Inc. on October 21, 2022. The full acoustical analysis can be found in Appendix F.

Temporary Noise Levels – Construction. The proposed project would involve construction activities at various locations within and near the project site through the buildout period. Existing sensitive receptors could be located as close as 50 feet from construction activities. Construction noise is not considered to be a significant impact if construction is limited to the allowed hours and construction equipment is adequately maintained and muffled (WJV Acoustics 2022, p. 13).

The proposed project would be required to comply with the City's General Plan Policy HS-6.9, which is related to construction noise and timing and is outlined in Mitigation Measure N-1 presented below. Compliance with this mitigation would ensure that less than significant impacts occur in relation to temporary construction noise levels exceeding the City's established noise standards.

Mitigation Measure

N-1 The following shall be implemented by the project developer during construction of the project, pursuant to General Plan Policy HS-6.9:

- Construction activities shall normally be limited to the hours of 7AM to 7PM Monday through Friday, and 8AM to 7PM on Saturday. Construction Use

available noise suppression devices and properly maintain and muffle loud construction equipment.

- Avoid stating of construction equipment and unnecessary idling of equipment within 200 feet of noise-sensitive land uses.

Permanent Noise Levels – Traffic Impacts to Onsite Receptors. The City's General Plan Noise Element establishes an exterior noise level standard of 60 dB L_{dn} for outdoor activity areas of single-family residential uses, which generally include backyards of single-family residences. The noise element also requires that interior noise levels attributable to exterior noise sources not exceed 45 dB L_{dn}.

Exterior Noise Exposure - The proposed project includes sensitive receptors (i.e., residential land uses) that could be impacted by traffic noise exposure in the vicinity of Prince Road. A noise impact could occur if the outdoor activity areas of the proposed sensitive receptors are located within the cumulative conditions 60 dB L_{dn} traffic noise contours. The acoustical analysis concluded that based upon standard roadway widths and the project's site plan, no outdoor activity areas would be expected to be located within the 60 dB L_{dn} traffic noise contour. Therefore, mitigation (e.g., a sound wall) would not be required for compliance with the City's exterior noise level standard for residential land uses.

Interior Noise Exposure –The closest proposed lot to Prince Road is Lot 44 and although the exact location of residential construction within this lot is unknown, the worst-case scenario noise level calculated by the acoustical analysis for this lot is 52 dB L_{dn}. The City's interior noise level standard is 45 dB L_{dn}. In order to satisfy the City's interior noise level standard, the proposed residential construction must be capable of providing a minimum outdoor-to-indoor noise level reduction of 7 dB (52-45=7).

Compliance with current building code requirements for residential construction methods would reduce noise levels by 10 to 15 dB with windows open and up to 25 dB if windows are closed (Walter Van Groningen, email message, November 17, 2022). This would be sufficient for compliance with the City's standard of 45 dB L_{dn} and no adverse, significant environmental impacts would occur.

Permanent Noise Levels – Traffic Impacts to Offsite Sensitive Receptors. According to the acoustical analysis, a significant impact would occur if an increase in traffic noise associated with the project would result in noise levels exceeding the City's applicable noise level standards at the location(s) of the sensitive receptors. A significant impact would also occur if traffic noise levels were to increase by three dB at sensitive receptor locations where noise levels already exceed the City's applicable noise level standards (without the project), as three dB generally represents the threshold of perception in change for the human ear. The City's exterior noise level standard for residential land uses is 60 dB L_{dn} for single-family residences and 65 dB L_{dn} for multi-family residences.

The acoustical analysis modeled traffic noise at seven receptor locations along several roadway segments with adjacent sensitive receptors and calculated traffic noise exposure levels for year 2024 with project, the year 2024 without project, the year 2044 cumulative with project, and the year 2044 cumulative without project. The acoustical analysis concluded that the project's contribution to 2024 traffic conditions noise levels would not result in exceedance of the City's standard for residential land uses nor result in an increase in three dB in any sensitive receptor locations where noise levels already exceed the City's noise level standards without the project. The acoustical analysis also concluded that the project's contribution to 2044 cumulative traffic conditions noise levels would not exceed the City's noise level standard for residential land uses nor result in an increase of three dB in any sensitive receptor locations where noise levels already exceed the City's noise level standards without the project.

Therefore, the proposed project would not result in the generation of a substantial permanent increase in ambient noise levels to offsite sensitive receptors in excess of the City's standards.

b. According to the acoustical analysis, there are no state or federal standards that specifically address construction vibration. Some guidance is provided by the California Department of Transportation, which includes the criteria for determining annoyance potential and the damage potential threshold.

Vibration from construction activities could be detected at the closest sensitive land uses (located approximately 50 feet from the project site), especially during movements by heavy equipment or loaded trucks and during some paving activities. However, according to the acoustical analysis, the levels of vibration from construction of the proposed project felt by nearby sensitive receptors would not be expected to exceed any significant threshold levels for annoyance or damage (p.15). Therefore, the proposed project would not result in the generation of excessive ground-borne vibration or ground borne noise levels.

c. The project site is not located within two miles of a public airport or private airstrip. The Gustine Municipal Airport is located approximately four miles southeast of the project site (WJV Acoustics 2022, p. 17). The project site is also not located within the vicinity of an airport land use plan. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels.

14. POPULATION AND HOUSING

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☒	☐
b.	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Comments:

a. According to the US Census, the population of Newman was 12,351 in April 2020 (United States Census Bureau 2021).

The proposed project includes the demolition of one existing single-family home and associated farming structures (with one of the existing homes to remain) and the development of 111 new single-family homes. This would result in the addition of approximately 384 people to the City of Newman (110 net, additional single-family homes x 3.49 persons per household) (California Department of Finance 2021). However, the proposed project is designated by the City general plan as Medium Density Residential. The increase in 384 residents represent a minor increase in the City of Newman's overall population and is consistent with the growth analyzed in the City general plan. Therefore, the proposed project would not induce population growth that is not already planned for by the City of Newman.

b. The project site is currently developed with one house and associated farming structures, which would be demolished with the implementation of the proposed project. Therefore, the proposed project would not displace substantial numbers of existing people or housing and would not necessitate the construction of replacement housing elsewhere.

15. PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of or 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 following public services:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	☐	☒
b. Police protection?	☐	☐	☐	☒
c. Schools?	☐	☐	☒	☐
d. Parks?	☐	☐	☐	☒
e. Other public facilities?	☐	☐	☐	☒

Comments:

a. The project site consists of two existing residences and associated farming structures; however, the proposed project would only demolish one of the homes in addition to the associated farming structures. The proposed project consists of 112 single-family homes, but only 111 of these homes are new. Therefore, the proposed project would increase fire protection needs at the project site.

The West Stanislaus County Fire Protection District currently serves the project site but provides mutual aid with the Newman Fire Department for fire protection and emergency medical services within city limits. There is one shared station located at 1162 N Street from which both respond to calls. This shared station is located approximately 0.8 miles north of the project site. With annexation of the project site, the Newman Fire Department would serve the project with mutual aid from West Stanislaus County Fire Protection District. The Fire Department is a 20-member volunteer force (City of Newman 2022) and has an ISO rating of 04/4Y (Justin Hendrix, email message, April 20, 2022).

According to the Fire Chief, the City will need to start reviewing the need for a second fire station. However, the Fire Chief indicated that the current fire protection facilities can accommodate the anticipated growth by the proposed project (Justin Hendrix, email message, April 19, 2022).

The proposed project would be constructed in accordance with current building codes and would be required to be maintained in accordance with applicable City policies to promote public and property safety. Pursuant to the project's condition of approval #13, prior to the issuance of a building permit, the project is required to pay all development

impacts fees as specified and pursuant to the City's municipal code, ordinances and resolutions. The fee assessment shall include all applicable fees for fire protection. Fees shall be paid at the time of the issuance of each permit.

The proposed project would not significantly impact fire protection services requiring the construction of new or remodeled facilities.

b. The project site consists of two existing residences and associated farming structures; however, the proposed project would only demolish one of the homes in addition to the associated farming structures. The proposed project consists of 112 single-family homes, but only 111 of these homes are new. Therefore, the proposed project would increase police protection needs at the project site.

Police services are provided by the Newman Police Department within the city limits and by the Stanislaus County Sheriff's Department in unincorporated areas. As reported in the City general plan EIR, both the Newman Police Department and the Stanislaus County Sheriff's Department provide frequent mutual aid and back-up services to each other. The police department headquarters, the Newman Police Department, is located at 1200 Main Street approximately 0.78 miles north of the project site.

According to the Police Chief, the current police protection facilities can accommodate the anticipated growth by the proposed project (Justin Hendrix, email message, April 19, 2022).

The proposed project would be required to be maintained in accordance with applicable City policies to promote public and property safety. Pursuant to the project's condition of approval #13, prior to the issuance of a building permit, the project is required to pay all development impacts fees as specified and pursuant to the City's municipal code, ordinances and resolutions. The fee assessment shall include all applicable fees for police protection. Fees shall be paid at the time of the issuance of each permit.

The proposed project would not significantly impact police protection services requiring the construction of new or remodeled facilities

c. The Newman-Crows Landing Unified School District (school district) provides kindergarten through 12th grade education for students living in Newman and the surrounding communities and agricultural areas. The City of Newman has four elementary schools (the nearest being Von Renner Elementary located 0.17 miles north of the project site, which is the elementary school that the proposed project's students would attend), one middle school (Yolo Middle School located 0.6 miles northwest of the project site), and one high school (Orestimba High School located 1.2 miles northwest of the project site). The school district uses a student generation rate of 0.58 students per household for single-family units and 0.69 students per household for multi-family units (Caralyn Mendoza, email message, April 7, 2022). Therefore, the proposed development would generate approximately 64 new students (110 new single-family households x 0.58 students per household).

To accommodate the growth anticipated by the City general plan, construction of a new elementary school (Hurd Barrington Elementary School) occurred in 2011 with the capacity for approximately 600 students (transitional kindergarten to 5th grade). There was also construction of a new classroom building at Yolo Middle School that was completed in 2020 (Caralyn Mendoza, email message, January 25, 2022). There is a need for expanding the cafeteria and food distribution infrastructure, which the school district would be using developer fees and bond money to accomplish (plans are already underway in anticipation of this) (Caralyn Mendoza, email message, April 7, 2022).

According to the school district's Chief Business Official, in coordination with the Superintendent, the existing facilities can withstand a seven-student increase at each grade level K-8 (assuming the students come equally distributed in all grades K-8). However, that would put the school district at or near capacity at Von Renner Elementary, where the project's generated students would attend, in all General Education classrooms. Consequently, if the distribution of students does not come in equal distribution among grade K-8, the school district would need to hire additional teachers and find additional space to hold classes. The school district stated that it would need two additional classrooms to handle the growth caused by the new homes, "not because of the number of students, but because the of the hard cap capacity put forth in class size reduction regulations and the fact that students very rarely come equally distributed across all grade levels" (Caralyn Mendoza, email message, April 7, 2022).

However, the school district indicated that they do have the classroom capacity to handle the growth depending on what grades the generated students come in at. The school district is confident that the middle school and high school students generated can be accommodated in the existing facilities (Caralyn Mendoza, email message, April 7, 2022).

In accordance with Senate Bill 50, the project developer would be required to pay development impact fees to the school district at the time of the building permit issuance. The school district would use collected funds towards new facilities to offset any impacts associated with new development. Pursuant to California Government Code Section 65996, payment of these fees is deemed to fully mitigate cumulative CEQA impacts of new development on school facilities. Therefore, payment of state-mandated impact fees would reduce any potentially cumulatively considerable environmental impacts by the project on school facilities to a less-than-significant level.

d. Due to the proposed project's increase in population, an increase in the use of nearby parks may occur. The proposed project would be required to provide approximately two acres of parkland, according to the City general plan policy RC-1.1 (391 new residents x (5 acres/1,000 residents)).

The City general plan policy RC-1.2 requires new development to contribute towards meeting the City's parkland of 5 acres per 1,000 residents by dedicating land, dedicating improvements, or paying in-lieu fees, or a combination of these. The project proposes a 1.91-acre dual usage park site located on the eastern side of the project site, which meets the project's required parkland dedication. In addition, as required by the project's

condition of approval #13, prior to the issuance of a building permit, the project is required to pay all development impacts fees as specified and pursuant to the City's municipal code, ordinances and resolutions. The fee assessment shall include all applicable fees for parks. Fees shall be paid at the time of the issuance of each permit

Therefore, the proposed project would not have a significant impact on the City's parks and recreational facilities.

e. Due to the proposed project's increase in population, an increased demand for library services may occur. The City of Newman is a member of the Stanislaus County Library system, with its local branch (the Newman Public Library) located at 1305 Kern Street approximately 0.75 miles northwest of the project site.

The City general plan includes policies that address the provision of library services such as continuing to work with the Stanislaus County Library system to ensure that adequate funding is available to continue the level of service currently provided by the Newman Library (Policy PFS-11.1) and assisting the Stanislaus County Library with identifying new locations for additional library facilities if new facilities are needed as the City grows (Policy PFS-11.2).

Although the proposed project may result in the increase in use of the Newman Branch Library, this type of development was anticipated by the City general plan and evaluated in the City general plan EIR. The City general plan EIR does not identify any impacts in relation to library services in association with new construction with implementation of the City general plan. In addition, as specified in the project's condition of approval #13, prior to the issuance of a building permit, the project is required to pay all development impacts fees as specified and pursuant to the City's municipal code, ordinances and resolutions. The fee assessment shall include all applicable fees for public facilities. Fees shall be paid at the time of the issuance of each permit

Therefore, the proposed project is not anticipated to result in significant impacts to the City's existing library facilities.

16. RECREATION

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Would the project 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?	☐	☐	☐	☒
b.	Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Comments:

a-b. A variety of different parks lands and facilities are provided by the City of Newman to serve the diverse needs of the community. The City's parks include large community parks, mid-sized neighborhood parks, and small mini-parks/playgrounds. The nearest park to the project site is Alfred A. "Bush" Rose, Jr. Park located 0.43 miles west of the project site and Merced Street Park located 0.47 miles northwest of the project site.

Refer to Section 15, Public Services, checklist question "d" for more information on potential impacts the proposed project could have on the City's parks and recreational facilities.

17. TRANSPORTATION

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b.	Conflict or be inconsistent with CEQA guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c.	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d.	Result in inadequate emergency access?	☐	☐	☐	☒

Comments:

a. The proposed project is consistent with the City general plan and, therefore, would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Additionally, the proposed project would be subject to all applicable City guidelines, standards, and specifications related to transit, bicycle, or pedestrian facilities.

b. The response to this checklist question is based on the vehicle miles traveled (VMT) analysis (VRPA Technologies 2022) prepared for the proposed project and included in Appendix G.

Per the requirements of Senate Bill 743 (SB 743), VMT is the new performance measure used in CEQA transportation analysis. VMT became the required performance measure on July 1, 2020 replacing the previous performance measure which was level of service (LOS). The VMT generated by land development projects is compared to various screening criteria and significance thresholds to determine whether the level of VMT would be considered to be significant.

CEQA allows agencies to adopt formal methodologies and thresholds of significance that will be used for environmental evaluation or to use methodologies and thresholds of significance determined on a case-by-case basis. The City of Newman has not adopted methodologies and thresholds of significance for VMT analysis; therefore, the analysis conducted for this project was based statewide guidance, as well as regional guidance, provided by other agencies located in the San Joaquin Valley.

Methodology

VMT guidance provided by Fresno Council of Governments (COG) mentions the use of a screening process to determine whether projects can be screened out of requiring a detailed VMT analysis and be presumed to have a less than significant impact. The Fresno COG recommends that a project may be screened out of requiring a detailed VMT analysis due to proximity to transit, project type (retail, affordable housing, or government/public service, small project size, or location within a low VMT area. Of these, only small project size was considered to be applicable to the proposed project.

The Fresno COG screening guidelines reference a GHG emission threshold of 3,000 metric tons of carbon dioxide equivalent per year and uses a generalized assumption that 50 percent of the GHG emissions from a project result from vehicle emissions. This allows the relation of the threshold of 3,000 metric tons of carbon dioxide per year to project size expressed in terms of VMT generated per day and daily trip generation.

VMT Screening Analysis

A screening analysis was conducted to determine whether the project exceeded the maximum project size for which detailed VMT analysis is not required. A GHG emission threshold of significance of 3,000 was used as the starting point of the analysis. Modeling was conducted to determine VMT generation specific to the proposed project and resulted in an estimate that 1,137 metric tons of carbon dioxide would be produced by vehicle trips associated with the project and that this would account for 79 percent of total project GHG. The project GHG emissions produced by vehicles are 1,137 metric tons per year resulting in a project total GHG emissions of 1,439 metric tons per year. With an estimated annual total GHG emission of 1,439 metric tons per year, the proposed project falls below the threshold of 3,000 metric tons per year. Therefore, the project is screened out of requiring a detailed VMT analysis because the GHG emissions from vehicle trips plus trips from other sources fall below the threshold of 3,000 metric tons of carbon monoxide per year. Based on this determination, it is presumed that the proposed project would have a less than significant VMT impact.

c. The project site can be accessed from three locations; one access point from Canyon Creek Drive and two access points from Prince Street. The outer proposed roads within the site (A, B, C, and D Drives and Caton Drive) consist of widths ranging from 50 to 60 feet. The internal proposed roads within the site (E, F, and G Ways) are 32 feet in width, with two 20-foot width alleys. The City Engineer is recommending conditions of approval that would require the project construct full-width street improvements pursuant to Minor Collector and Local standards and as approved by the City Engineer. The roadway improvements are required to conform to the City's Improvement Standards. An additional condition would require that the street knuckles and curve lines' dimensions be constructed per the City of Newman Improvement Standards.

With implementation of the project's conditions of approval, the proposed project would not increase hazards to vehicle safety due to geometric design features (e.g., sharp curves or dangerous intersection).

d. As previously identified, the project site can be accessed by Caton Drive and two access points along Prince Street connecting to the proposed two-lane roadway within the project site. Future development on the site would be subject to general plan policy HS-3.6, which ensures that new development provides for adequate fire equipment access, and policy TC-1.6, which requires that street widths for new or improved arterials, collector and local streets be limited to the minimum width necessary to adequately carry the volume of anticipated traffic and meet the City's Level of Service Policy of C while allowing for adequate bicycle and pedestrian facilities and emergency access. With the proposed roadway connectivity and adherence to Newman roadway design standards and guidelines, and compliance with general plan policies, emergency vehicle access and circulation within the project site would be adequate. Therefore, the project would not result in inadequate emergency access.

18. TRIBAL CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. 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, or 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:				
(1) 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	☐	☐	☐	☒
(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 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.	☐	☐	☐	☒

Comments:

a. As of February 2022, no California Native American tribes traditionally and culturally affiliated with the project area have requested consultation pursuant to Public Resources Code section 21080.3.1 (Michael Holland, telephone conversation, February 2, 2022).

19. UTILITIES AND SERVICES SYSTEMS

Would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Require or result in the relocation or construction of new or expanded water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b.	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c.	Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d.	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?	☐	☐	☐	☒
e.	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Comments:

a. There is nothing in the project description that indicates the project would require or result in the relocation or construction of new or expanded water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities.

b. The City of Newman's source of potable water is groundwater. According to the project materials, the project would use a water demand factor of 500 gallons per day (gpd) per unit. Therefore, the project would demand 56,000 gpd (112 single-family units x 500 gpd) or approximately 62.7 acre-feet per year. Table 4, Existing and Proposed Water Use, below provides a breakdown comparison between existing residential and agricultural use water demand and with implementation of the proposed project.

Table 4 Existing and Proposed Water Use

Land Use		Dwelling Units	Agricultural Land	Water Factor	Water Demand
Existing	Residential	2	-	500 gpd/unit	1,000 gpd + 83,900 gpd[2]
	Agriculture	-	15.7 acres[1]	-	
Proposed - Residential		112	-	500 gpd/unit	56,000 gpd
				Decrease	<28,900> gpd

SOURCE: (Project Application Materials 2021), (Michael Holland, email message, November 8, 2022)

NOTES: (1) Acreage in the agricultural water data provided by the City.

(2) Approximate based on the agricultural water data providied by the City.

The historic agricultural water use on the project site was provided by the City for the past ten years (Michael Holland, email message, November 8, 2022). Table 4 illustrates that the proposed project would demand approximately 28,900 gpd (or approximately 32 acre-feet per year) less than the amount of water that is demanded by the existing uses at the site. The *2015 Urban Water Management Plan* (City of Newman 2016) states that the City's single-family residential uses are projected to use 452 acre-feet of water in 2025 (p. 17). The proposed project would make up approximately 14 percent of the single-family residential water use total projected for 2025 ([62.7 acre-feet per year / 452 acre-feet per year] x 100). Therefore, the proposed project's water use needs would be met without requiring the construction of new or expanded water facilities.

As discussed in the City's *2015 Urban Water Management Plan*, based on the resiliency of the groundwater basin and as long as potable groundwater can be extracted by the City wells, it is not anticipated that a single or multiple dry year period will reduce the availability of water supply to the City (p. 57). Further, anticipated supplies of groundwater are sufficient to meet all demands through the year 2040 even under drought conditions (p. 58). Therefore, the proposed project will have sufficient water supplies available to serve its needs, and no physical changes would be necessary. Therefore, sufficient water supplies would be available to serve the proposed project and reasonably foreseeable future development during normal, dry and multiple dry years.

c. The proposed project would connect to the existing six-inch sanitary sewer line on Prince Street. The City's wastewater treatment facility, located approximately one mile northeast of the City of Newman, has a capacity of 1.25 million gallons per day (mgd) until improvements are made to the facility, which are awaiting grant approvals from the State (Justin Hendrix, email message, April 19, 2022). Table 5, Wastewater Generation, provides a comparison of the wastewater generated at the project site as it exists today and with implementation of the proposed project.

Table 5 Wastewater Generation

	Dwelling Units	Factor	Wastewater Generation
Existing	2	214 gpd/unit	428 gpd
Proposed Project (New)	112		23,968 gpd
		Total	<24,396 gpd>

SOURCE: (Project Application Materials 2021), (City of Newman 2008, Table 4-1)

The proposed project would generate an increase of approximately 23,968 gpd of wastewater, for a total of 24,396 gpd of wastewater. The proposed project's wastewater generation would make up less than one percent of the capacity for the facility. In addition, the *City of Newman Wastewater Collection System - Sewer System Management Plan (SSMP)* (City of Newman 2009) prepared its document with modeling that included development at the project site with 181 dwelling units, identified as "Area 1." Therefore, residential development has been anticipated and wastewater generation at the project site has been evaluated by the City. The proposed project's wastewater generation would be adequately served by the City's wastewater treatment facility, and no physical changes would be required.

d-e. The Bertolotti Disposal Company serves as the waste hauler for the City of Newman and would collect the waste generated by the proposed project. According to the project application, the project would generate 1,344 pounds of solid waste per unit per day (112 units x 12 pounds of solid waste per unit per day) or approximately 0.7 tons per day.

Disposal would be collected and sent to the Fink Road Landfill located over 13 miles northwest of the project site. According to CalRecycle, the landfill has a permitted daily maximum of 2,400 tons of solid waste per day (CalRecycle 2022) and the proposed project's generation of 0.7 tons per day would make up a small amount of this total. In addition, the landfill has been recently approved to expand its design parameters, including capacity, to ensure accommodation of solid waste through its new estimated closure year of 2050 (CalRecycle 2020). Therefore, the proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure.

20. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b.	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 wildfire?	☐	☐	☐	☒
c.	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?	☐	☐	☐	☒
d.	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Comments:

a-d. The project site is not located in or near a state responsibility area or lands classified as very high fire hazard severity zones (CalFire 2022). Therefore, the proposed project would not expose people or structures to a significant risk involving wildfires nor exacerbate the risk of wildfire and analysis is not necessary.

21. MANDATORY FINDINGS OF SIGNIFICANCE

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a.	Does the project have the potential to substantially degrade the quality of the environment; 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; substantially reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b.	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	☐	☒	☐	☐
c.	Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Comments:

a. As discussed in Section 4, Biological Resources, special-status plant and wildlife species are recorded as occurring in the vicinity of the project site but are not likely to occur on the project site due to lack of suitable habitat. However, special-status wildlife species are expected to occur on the site and mitigation measures BIO-1 through BIO-6 would reduce impacts to a less-than-significant level.

b. As described in Section 3, Air Quality, the project's criteria air pollutant emissions and their effects to air quality during construction and operations are less than significant and the project's contribution to regional cumulative air quality impacts is less than cumulatively considerable.

The proposed development would result in temporary biological resource impacts during construction associated with special-status species. With implementation of Mitigation Measures BIO-1 through BIO-6, as described in Section 4, Biological Resources, construction impacts would be mitigated to a less-than-significant level. Because the nature of the identified impacts would be mitigated to a less-than-significant level, the proposed project would not have a cumulatively considerable impact on biological resources.

Section 5, Cultural Resources, concludes that earthmoving activities may result in the loss of unknown prehistoric or historic subsurface archaeological resources or disturbance of human remains onsite. Because the project would implement Mitigation Measures CR-1 and CR-2, the proposed project would not have a cumulatively considerable impact on cultural resources in the project area.

As discussed in Section 8, Greenhouse Gas Emissions, the proposed project will generate GHG emissions primarily from transportation, energy use, water and wastewater, and solid waste disposal sources. These emissions will contribute to the cumulative accumulation of GHG emissions is the atmosphere as its effects are not localized to areas where they are produced. Climate change is a global phenomenon resulting from the combined effects of GHG emissions produced worldwide. Consequently, the analysis of climate change impacts from production of GHGs is inherently cumulative in nature. (See *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 219.) Therefore, the project would result in less than cumulatively considerable GHG impacts.

c. The proposed project has the potential to expose sensitive receptors to construction TAC emissions that can lead to increased cancer risks that exceed the air district cancer risk thresholds. Implementation of Mitigation Measure AQ-1 would reduce this impact to less than significant.

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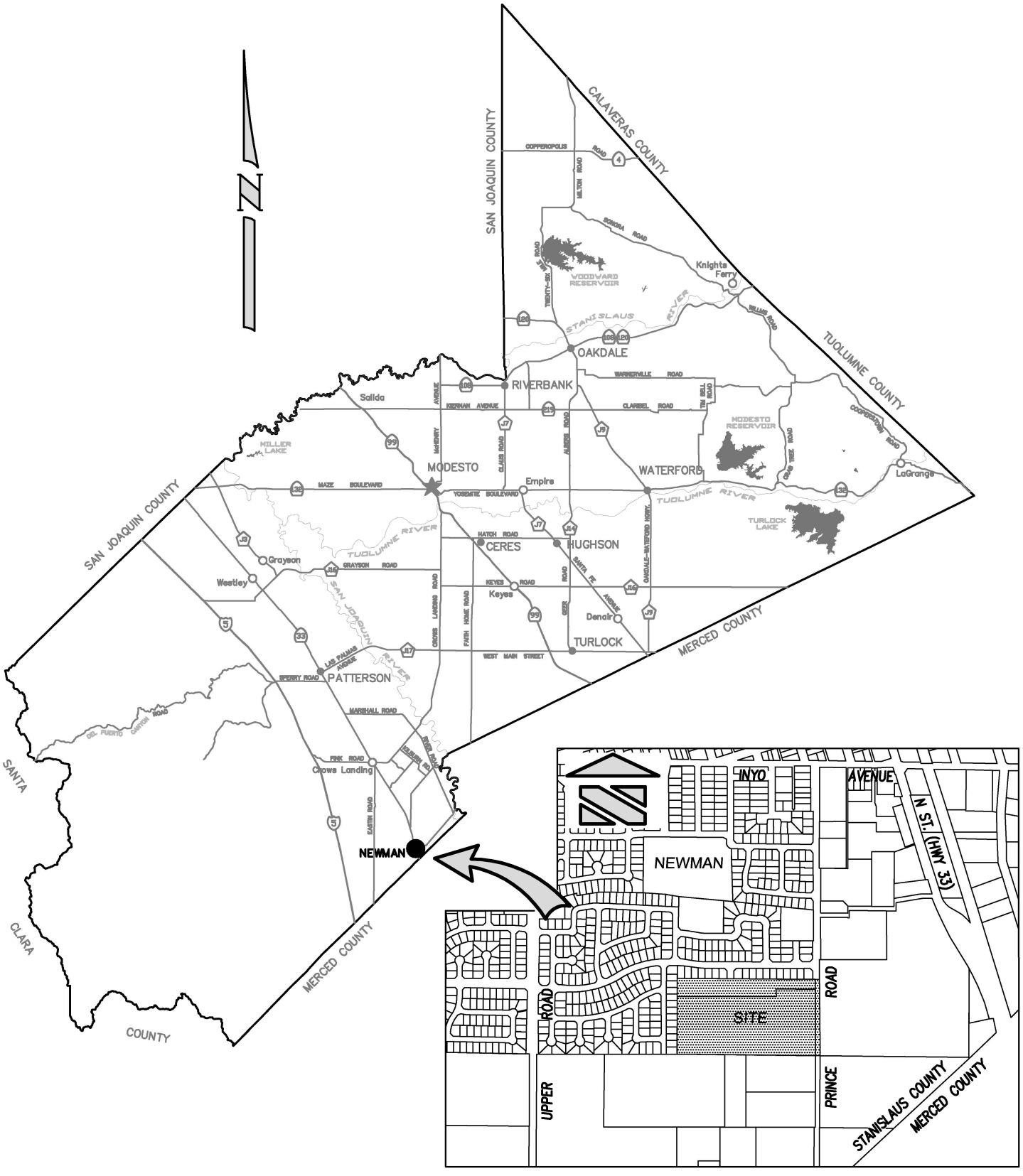
Project Plans

A

APPENDIX



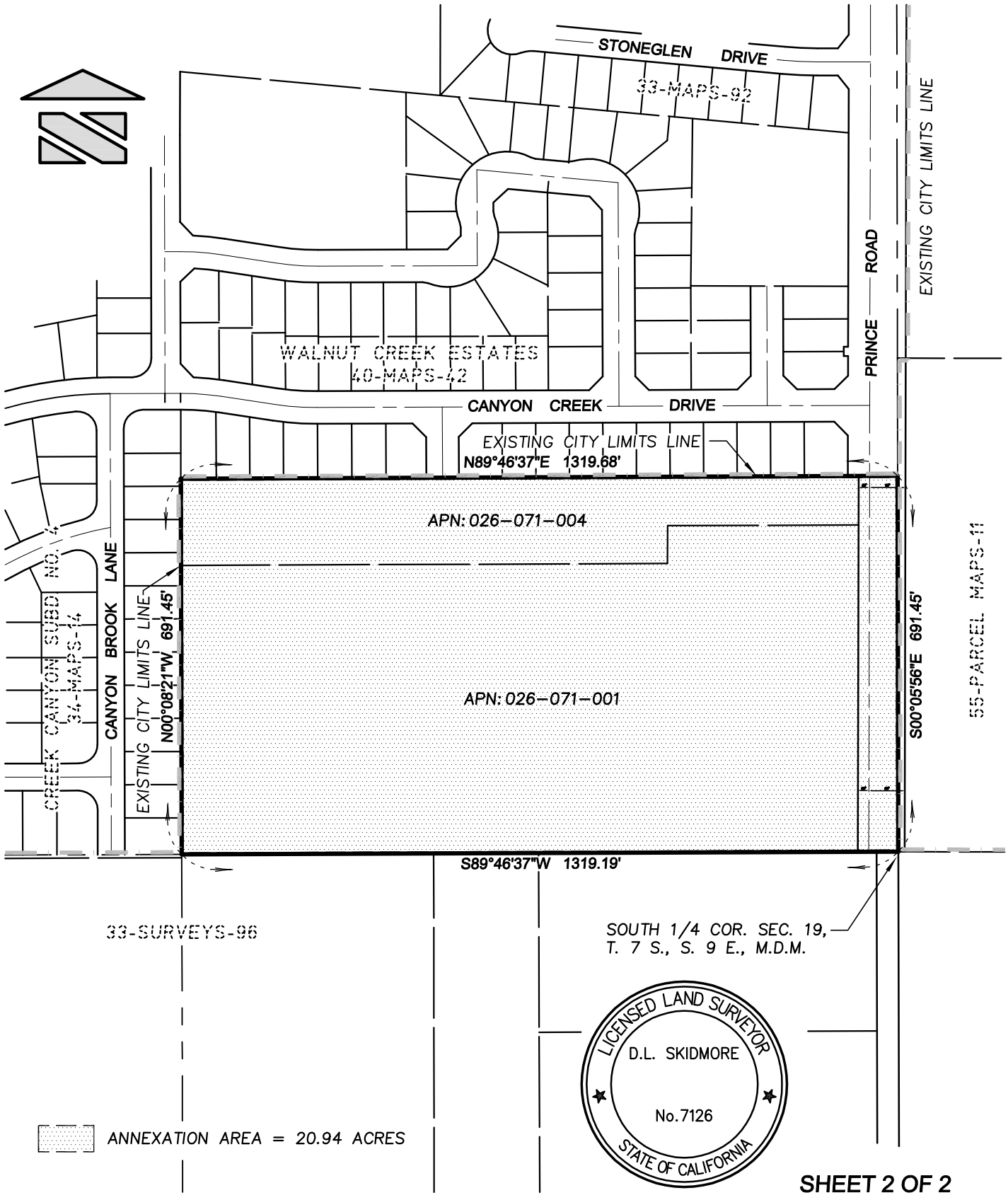
VICINITY MAP

DRAWN:	DLS
DATE:	20MAY21
SCALE:	NA
JOB #:	1386-20
DWG:	ANNEX

CATON RANCH ANNEXATION TO THE CITY OF NEWMAN

CITY OF NEWMAN,
COUNTY OF STANISLAUS, STATE OF CALIFORNIA

ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
PHONE: (209) 545-3390 FAX: (209) 545-3875 www.assoceng.com



SHEET 2 OF 2

DRAWN:	DLS
DATE:	20MAY21
SCALE:	1" = 250'
JOB #:	1386-20
DWG:	ANNEX

CATON RANCH ANNEXATION TO THE CITY OF NEWMAN

CITY OF NEWMAN,
COUNTY OF STANISLAUS, STATE OF CALIFORNIA

ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
PHONE: (209) 545-3390 FAX: (209) 545-3875 www.assoceng.com

CATON RANCH
ANNEXATION TO CITY OF NEWMAN
LEGAL DESCRIPTION

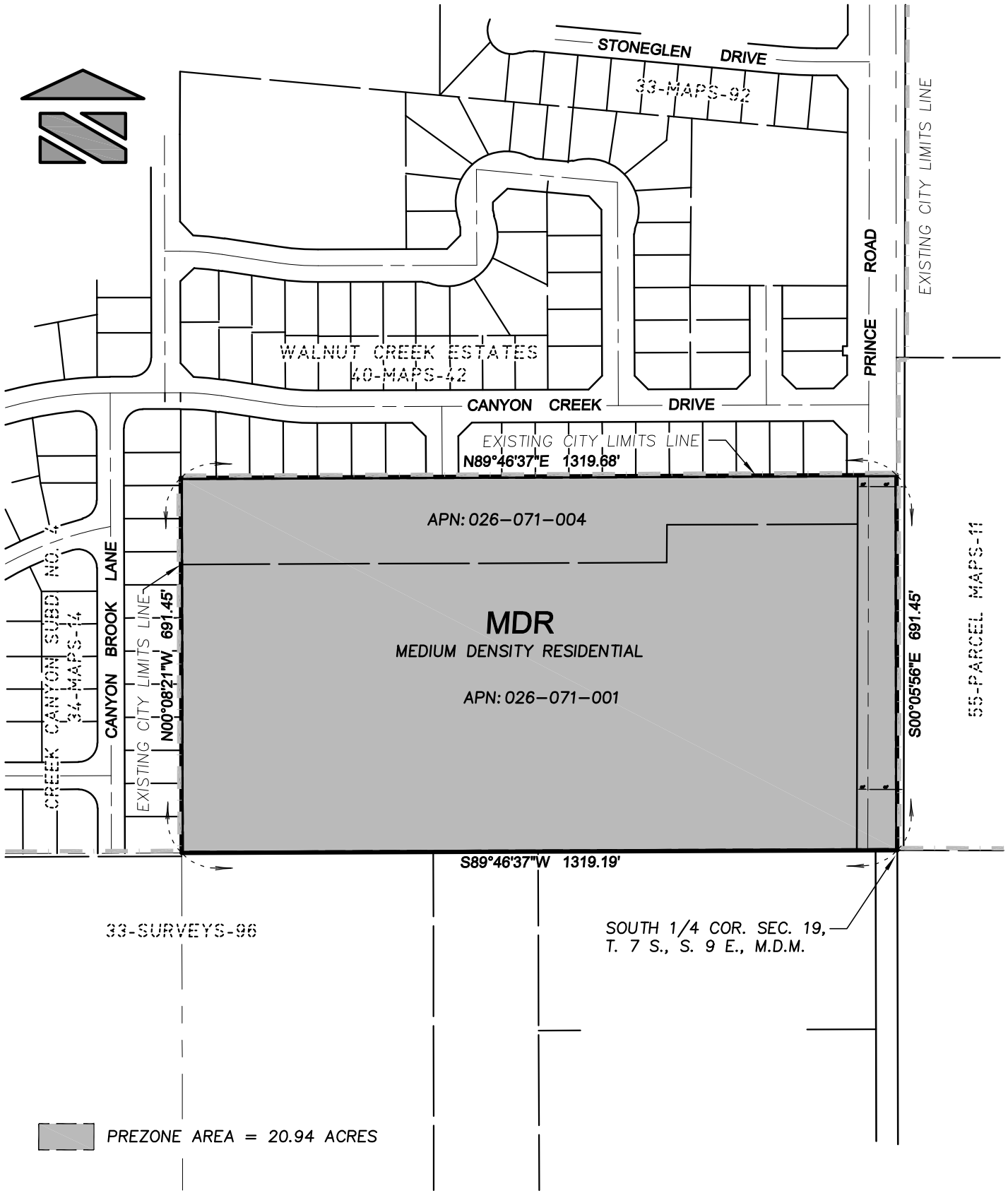
ALL that certain real property situate in the County of Stanislaus, State of California, lying within a portion of the southwest quarter of Section 19, Township 7 South, Range 9 East, Mount Diablo Meridian, being more particularly described as follows:

BEGINNING at the southwest corner of said southwest quarter of Section 19; thence 1) South 89°46'37" West along the south line of said Section 19, a distance of 1319.19 feet to the southeast corner of that certain tract of land entitled "Creek Canyon Subdivision No. 4" as shown in Book 34 of Maps at Page 14, Stanislaus County Records and being an angle point in the existing City of Newman limits line; thence North 00°08'21" West along said Tract line and city limits line, a distance of 691.45 feet to the southwest corner of that certain tract of land entitled "Walnut Creek Estates" as shown in Book 40 of Maps at Page 42, Stanislaus County Records and being an angle point in the existing City of Newman limits line; thence North 89°46'37" East along the south line of last said Tract and the easterly extension thereof and the city limits line, a distance of 1319.68 feet to a point on the north-south quarter section line through said Section 19; thence South 00°05'56" East along last said line, a distance of 691.45 feet to the point of beginning.

Containing 20.94 acres, more or less

(Being Stanislaus County APN's: 026-071-001 & 026-071-004).

_____
Dave L. Skidmore, L.S. 7126
05/20/21



DRAWN:	DLS/JF
DATE:	6/21/21
SCALE:	1" = 250'
JOB #:	1386-20
DWG:	PREZONE

CATON RANCH
PREZONE MAP
TO THE CITY OF NEWMAN

CITY OF NEWMAN,
COUNTY OF STANISLAUS, STATE OF CALIFORNIA

ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
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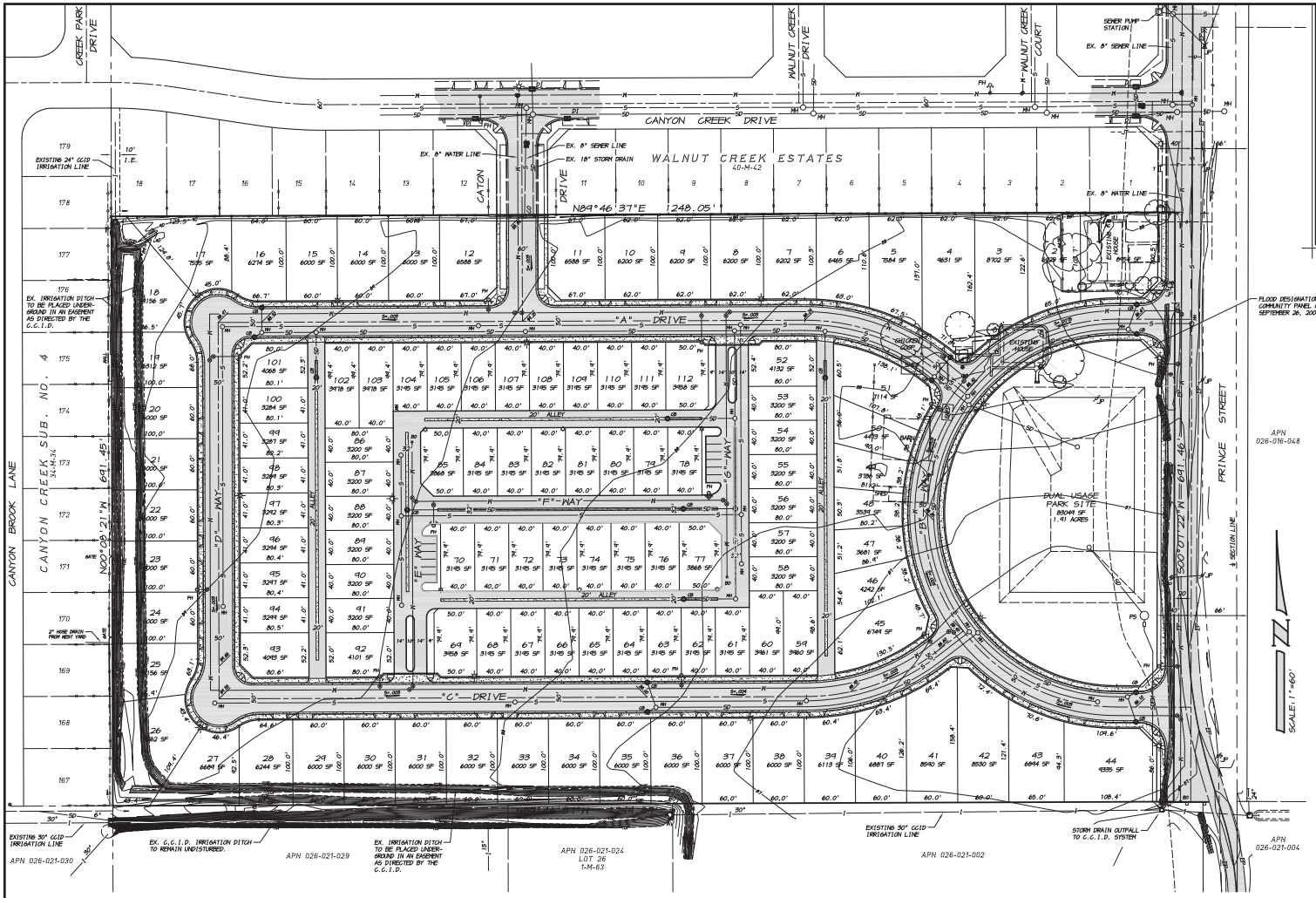
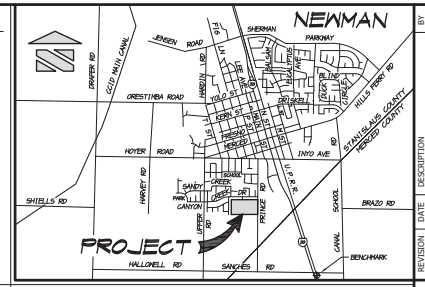




VICINITY MAP

NO SCALE

OWNER & SUBDIVIDER

DUNKLEY AND SIMON TRUSTS
239 MAIN STREET, SUITE E
PLEASANTON, CALIFORNIA 94566
C/O DAN DUNKLEY
REDWOOD PARK PROPERTIES
PH.: (925) 400-7277
DAN@REDWOODPROPERTIES.COM

CIVIL ENGINEER

ASSOCIATED ENGINEERING GROUP, INC.
4206 TECHNOLOGY DRIVE, SUITE 4
MODESTO, CALIFORNIA 95356
RYAN CARREL
PH.: (209) 545-3390

LEGEND

- EX. CURB AND GUTTER
- EX. EDGE OF PAVEMENT
- EX. SANITARY SEWER LINE
- EX. MANHOLE
- EX. CLEAN-OUT
- EX. STORM DRAIN LINE
- EX. CATCH BASIN
- EX. CATCH BASIN DROP INLET
- EX. WATER LINE
- EX. FIRE HYDRANT
- EX. GATE VALVE
- EX. JOINT POLE
- EX. POLE WITH GUY ANCHOR
- EX. IRRIGATION LINE
- EX. IRRIGATION LINE AIR VENT
- EX. JOINT UTILITY TRENCH
- EX. GAS LINE
- EX. ELECTRICAL CONDUIT
- EX. TELEPHONE CONDUIT
- EX. UTILITY LINE, TYPE UNKNOWN
- EX. TELEPHONE BOX
- EX. ELECTRICAL BOX
- EX. ELECTROLIER
- EX. FENCE
- EX. TREE, SPREAD DRAWN TO SCALE
- PROP. SEWER LINE, 8" DIA.
- PROP. STORM DRAIN LINE
- PROP. MANHOLE
- PROP. CATCH BASIN
- PROP. STORM DRAIN PUMP STATION
- PROP. STORM DRAIN FORCE MAIN
- PROP. WATER LINE
- PROP. FIRE HYDRANT
- PROP. GATE VALVE
- PROP. ELECTROLIER OR SITE LIGHT
- PROP. SLOPE AND DIRECTION OF FLOW
- PROP. AREA OF CONCRETE
- PROP. AREA OF STREET PAVEMENT
- PROP. CURB, GUTTER AND SIDEWALK AS PER THE NEWMAN CITY STANDARD DETAILS.

BENCHMARK

NGS BENCHMARK PID HS2414 (U793), BRASS DISK IN CULVERT HEADWALL, EAST SIDE OF HIGHWAY 33 AND SOUTHEAST OF THE SANCHES ROAD CROSSING. ELEV.= 91.50 NAVD88

STORM DRAIN CALCULATIONS

C = 0.50
A = 20.11 ACRES
MAP = 10.25"
R50 = 3.32" PER CITY STDS. DETAIL 7-B.
R100 = 3.63" PER CITY STDS. DETAIL 7-B.

VOL50 = 0.50 x 20.11 x 3.32 / 12 = 2.78 AC. FT.
VOL50 = 2.78 x 43560 = 121,174 CU. FT.
PUMP = 121,174 x 7.48 / (48 x 60) = 315 G.P.M.

VOL100 = 0.50 x 20.11 x 3.63 / 12 = 3.04 AC. FT.
VOL100 = 3.04 x 43560 = 132,444 CU. FT. STORAGE

STATEMENT OF SUBDIVIDER

A. ALL IMPROVEMENTS TO BE INSTALLED SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF NEWMAN IMPROVEMENT STANDARDS.

B. STORM DRAINAGE: BY POSITIVE DRAINAGE TO THE EXISTING CITY OF NEWMAN STORM DRAINAGE SYSTEM.

C. SANITARY SEWER: SEWER WILL CONNECT TO THE EXISTING CITY OF NEWMAN SYSTEM.

D. WATER SUPPLY: DOMESTIC WATER WILL CONNECT TO THE EXISTING CITY OF NEWMAN SYSTEM.

E. A DUAL USAGE PARK AND STORM DRAINAGE PUBLIC AREA WILL BE CONSTRUCTED WITH THIS DEVELOPMENT.

F. STREET LIGHTING: STREET LIGHTING SHALL BE IN ACCORDANCE WITH THE CITY OF NEWMAN STANDARDS.

G. PUBLIC UTILITIES WILL BE INSTALLED UNDERGROUND IN EASEMENTS.

GENERAL NOTES

1. ASSESSOR'S PARCEL NUMBERS: BOOK 026, PAGE 071, PARCELS 001 AND 004.
2. PRESENT ZONING: STANISLAUS COUNTY A2-40, AGRICULTURAL.
3. SITE SUMMARY: TOTAL SITE = 19.71 GROSS ACRES BEING DIVIDED INTO 112 MEDIUM DENSITY RESIDENTIAL LOTS AND A DUAL USE PARK SITE, THE SITE WILL BE PRE-ZONED MEDIUM DENSITY RESIDENTIAL (MDR) WITH THE PROPOSED ANNEXATION. PARK SITE = 2.57 GROSS ACRES OR 1.91 NET ACRES.
4. 10 FOOT WIDE PUBLIC UTILITY EASEMENTS WILL BE PROVIDED ALONG ALL PUBLIC STREET FRONTAGES.
5. ALL EXISTING STRUCTURES AND TREES ARE TO BE REMOVED, ALL SEPTIC TANKS, LEACH FIELDS, AND WELLS WILL BE REMOVED OR ABANDONED IN ACCORDANCE WITH THE CITY OF NEWMAN REQUIREMENTS.
6. PURSUANT TO SECTION 66463.1 OF THE SUBDIVISION MAP ACT, THE OWNER-SUBDIVIDER HEREBY RESERVES THE RIGHT TO FILE MULTIPLE SUBDIVISION MAPS.
7. THIS PROJECT SITE IS IN FLOOD ZONE AH AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM FLOOD INSURANCE RATE MAP FOR THE CITY OF NEWMAN, COMMUNITY PANEL NO. 060906C0045E, DATED SEPTEMBER 26, 2008, AND MAY BE SUBJECT TO FLOODING BELOW THE BASE ELEVATION OF 84, NAVD 88 DATUM.
8. ELEVATION CONTOURS ARE SHOWN AS ONE FOOT AND ONE-HALF FOOT INTERVALS.

TENTATIVE SUBDIVISION MAP

BEING A SUBDIVISION OF A PORTION OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 7 SOUTH, RANGE 8 EAST, MOUNT DIABLO MERIDIAN

CATON RANCH

NEWMAN CALIFORNIA

ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA. 95356
PHONE: (209) 545-3390 FAX: (209) 545-3479 www.aegmodesto.com

RYAN CARREL, R.C.E. 61619
DAVE SKIDMORE, L.S. 7126

BY	DESCRIPTION	DATE	REVISION

DRAWN BY: KEVIN
DATE: 4/12/21 8:32
SCALE: 1"=60'
DWG: 1386-TSM
CHECKED: J.F.
JOB #: 1386-20

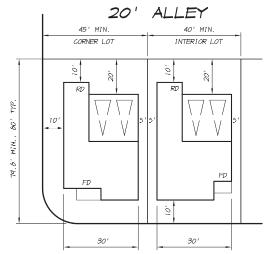
SHEET 1 OF 2

MDR LOTS 45 THRU 112
TYPICAL LOT SIZE

INTERIOR LOT: 40'x80'±
CORNER LOT: 45'x80'±

PROPOSED SETBACKS

FRONT: 10' MIN.
SIDE (INTERIOR): 5' MIN.
SIDE (CORNER): 10' MIN.
REAR: 10' MIN.
REAR (GARAGE): 20' MIN.

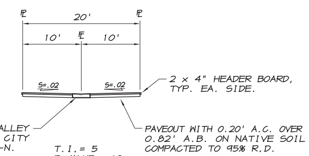


TYPICAL LOT LAYOUT

NO SCALE

NOTE:
LOTS 1 THRU 44 MINIMUM YARD SETBACKS FOR FRONT, SIDE AND REAR YARDS WILL BE THE SETBACKS AS PER THE NEWMAN ZONING ORDINANCE, TITLE 5, CHAPTER 5.03 FOR R-1-6000 SINGLE FAMILY HOMES:

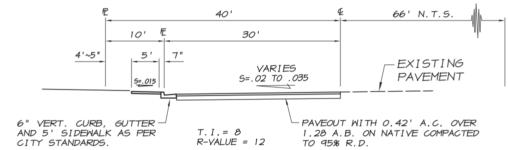
FRONT: 20' MIN.
SIDE (INTERIOR): 5' MIN.
SIDE (CORNER): 10' MIN.
REAR: 10' MIN.



TYPICAL RESIDENTIAL

20' ALLEY

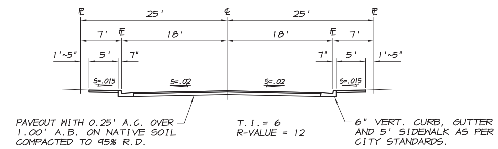
SCALE: 1"=10'



TYPICAL HALF STREET SECTION

PRINCE ROAD

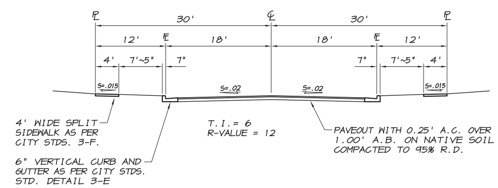
SCALE: 1"=10'



TYPICAL 50' RESIDENTIAL STREET SECTION

"A" DRIVE, "B" WAY, "C" DRIVE AND "D" WAY

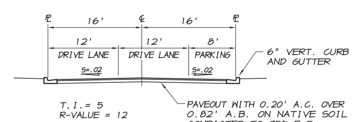
SCALE: 1"=10'



60' RESIDENTIAL MINOR COLLECTOR

CATON DRIVE

SCALE: 1"=10'



TYPICAL 32' STREET SECTION

"E" WAY, "F" WAY AND "G" WAY

SCALE: 1"=10'

NOTE
R-VALUES USED FOR FUTURE STREET SECTIONS ARE TAKEN FROM ADJACENT DEVELOPMENTS. R-VALUES WILL BE OBTAINED WITH THE DEVELOPMENT OF IMPROVEMENT PLANS AND THE PAVEMENT SECTIONS WILL BE ADJUSTED ACCORDINGLY.

REVISION	DATE	DESCRIPTION	BY

ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
PHONE: (209) 545-3390 FAX: (209) 545-3875 www.assoceng.com

TENTATIVE SUBDIVISION MAP
CATON RANCH
NEWMAN CALIFORNIA

RYAN CARREL, R.C.E. 61619
DAVE SKIDMORE, L.S. 7126

DRAWN BY: KEVIN
DATE: 4/13/21 1:12
SCALE: 1"=60'
DWG: 1386-TSM
CHECKED: J.F.
JOB #: 1386-20

SHEET 2 OF 2

CalEEMod Results

APPENDIX B

EMC PLANNING GROUP INC.
A LAND USE PLANNING & DESIGN FIRM

301 Lighthouse Avenue Suite C Monterey California 93940
Tel 831·649·1799 Fax 831·649·8399 www.emcplanning.com

To: **Teri Wissler Adam, Principal-in-Charge**

From: **Sally Rideout, Principal Planner**

Cc: **Shoshana Lutz, File**

Date: **June 25, 2022**

Re: **Caton Ranch Residential Subdivision – Criteria Air Pollutant and Greenhouse Gas (GHG) Emissions Modeling: Methodology, Assumptions, and Results**

PROJECT DESCRIPTION

The proposed 20.94-acre Caton Ranch Subdivision project (proposed project) is located west of Prince Road, near the City of Newman, Stanislaus County. The city and site are located within the San Joaquin Valley Air Basin, which is within the jurisdiction of the San Joaquin Valley Air Pollution Control District ("air district"). An initial study is being prepared to evaluate the environmental impacts of the proposed project.

The site is currently used for agricultural crop production. There are two single-family homes on the site and other structures ancillary to the agricultural use of the site. Several trees are present near the homes and structures. The proposed project consists of annexation to the City of Newman and subdivision of the property into 112 residential lots, a 1.91-acre dual use storm water basin lot and street and utility infrastructure (proposed project).

SCOPE OF ASSESSMENT

This assessment quantifies criteria air pollutant and greenhouse gas (GHG) emissions from demolition of existing improvements and construction and operations of the uses identified

in the tentative map (Associated Engineering Group 2021). The proposed project's operational criteria air pollutants and construction and operational GHG emissions are estimated using the California Emissions Estimator Model (CalEEMod) version 2020.4 software, a modeling platform recommended by the California Air Resources Board (CARB) and accepted by the air district. The model results will inform the initial study discussion of GHG emissions. Model results are attached to this assessment.

METHODOLOGY

Data inputs to the model are based on a comparison of proposed land uses with CalEEMod default land uses while utilizing the size metrics provided by the applicant.

Emissions Model

The CalEEMod platform allows calculations of both construction and operational criteria air pollutants and GHG emissions from land use projects. The model also calculates indirect emissions from processes "downstream" of the proposed project such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies.

CalEEMod is capable of estimating changes in the carbon sequestration potential of a site based on changes in natural vegetation communities and the net number of new trees that would be planted as part of the project. The model calculates a one-time only loss in the carbon sequestration potential of the site that would result from changes in land use such as converting vegetation to built or paved surfaces, and can provide an estimate of the change in the carbon sequestration potential that would result from planting new trees in an amount that is greater than the number of trees to be removed (net number of new trees).

Project Characteristics

For modeling purposes, data inputs to the model take into account the type and size of proposed uses utilizing CalEEMod default land uses based on the size metrics shown on the project plans and trip generation provided by the project traffic engineer. The size and type existing and proposed sources of criteria air pollutant and GHG emissions and their

respective CalEEMod land use default categories used in the model are presented in Table 1, Project Characteristics.

Table 1 Project Characteristics

Project Components	CalEEMod Default Land Use[1]	Existing	Proposed
Single-family Residential	Single-family Housing	2 units	112 units
Agricultural Outbuildings	-	4,500 square feet[2]	-
Street Infrastructure	Other Asphalt Surfaces	-	4.1 acres[3]
Storm Water Basin	Other Non-asphalt Surfaces	-	1.91 acres
Cropland	Cropland	18.5 acres	0

SOURCE: Breeze Software 2020, Associated Engineering Group 2021, VRPA Technologies, Inc. 2022.
NOTES:
1. CalEEMod default land use subtype. Descriptions of the model default land use categories and subtypes are found in the User's Guide for CalEEMod Version 2020.4 available online at: http://www.aqmd.gov/caleemod/user's-guide.
2. Existing buildings to be demolished (Google Earth 2022).
3. Approximate. Assumed to be 20 percent of the project site.

Operational criteria air pollutant and operational GHG emissions estimates are quantified based on the project characteristics information presented in Table 1. Construction GHG emissions estimates are quantified using CalEEMod construction defaults for equipment and phasing. Criteria air pollutant emissions generated by demolition and construction activities are analyzed in a separate health risk assessment prepared by others.

Modeling Scenario

Two modeling scenarios were prepared to estimate existing and proposed unmitigated GHG emissions and proposed criteria air pollutant emissions.

Existing Emissions Scenario

Existing operational GHG emissions are quantified based on the model's default emissions factors for the two single-family residences for the present year. The results of this scenario will be used to estimate a net change in GHG emissions between existing and proposed sources.

Unmitigated Emissions Scenario

The "unmitigated" emissions scenario provides estimates of operational criteria air pollutant and construction and operational GHG emissions that would be generated during the proposed project's demolition, construction, and operational activities. This model scenario also accounts for uniformly applied existing regulatory measures that reduce emissions. California Pollution Control Officers Association (CAPCOA) emissions reduction measures found in the *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* (CARB 2021), which are covered under this scenario are parenthetically referenced below.

Compliance with the following regulations during operations is assumed:

- Current Title 24 Residential Building Energy Efficiency Standards (BEES) (2019) require 100 percent of electrical energy demand from renewable sources for certain low-rise residential uses including single-family and multi-family residential uses. The model's operational energy emission factors for electrical energy demand Title 24 and non-Title 24 (plug ins) are adjusted to reflect the BEES for modeled Single-Family Housing uses;
- State Model Water Efficient Landscape Ordinance (MWELO) (CAPCOA WUW-4);
- Landscaping equipment is set to electric only to reflect phasing out of gas-powered landscaping tools potentially by 2024 (AB 1346). It is assumed that these or similar requirements will be in effect at buildout of the site (CAPCOA A-1); and
- Solid waste diversion of 75 percent is applied consistent with waste diversion targets identified in AB 341. It is assumed that these or similar requirements will be in effect at buildout of the site (CAPCOA SW-1).

Assumptions

Unless otherwise noted, data inputs for the model scenarios are based on the following primary assumptions:

1. Construction start date is assumed to be January 2023.
2. For modeling purposes operational emissions are estimated in 2025.

3. The proposed project would connect to the municipal domestic water and sanitary sewer systems.

Operational Emissions Data Input

The following adjustments were made to the model inputs:

- Each air district (or county) assigns trip lengths for urban and rural settings, which are incorporated into the CalEEMod defaults. The model's defaults were set to "urban" and the jurisdictional authority parameters are based on the model defaults for Stanislaus County.
- As noted previously, the model default trip generation rate is adjusted based on the information provided by the project traffic engineer (VRPA Technologies 2022).

Construction Emissions Data Inputs

CalEEMod default construction parameters allow estimates of short-term construction GHG emissions based upon empirical data collected and analyzed by the CARB.

Carbon Sequestration Potential Data Inputs

Changes in sequestration potential are reported in metric tons of carbon dioxide equivalent (MT CO_2e). The proposed project would remove approximately 18.5 acres of cropland. Cropland is identified in the model as a natural community with carbon sequestration value; therefore, an estimate of the one-time loss in carbon sequestration value attributable to the loss of cropland is included in this assessment. A landscape plan is not included in the tentative map and therefore, an estimate of potential carbon sequestration from new trees is not included in this assessment.

RESULTS

Model results for operational criteria pollutant emissions are reported in tons per year. The model results for construction and operational GHG emissions are reported on an annual basis in metric tons of carbon dioxide equivalents (MT CO_2e).

Criteria Pollutant Emissions

The proposed project would generate emissions during operations. Unmitigated emissions are presented in Table 2, Unmitigated Criteria Air Pollutant Emissions.

Table 2 Unmitigated Operational Criteria Air Pollutant Emissions

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO_X)[1,2]	Sulfur Oxides (SO_2)[1,2]	Particulate Matter (PM_{10})[1,2]	Fine Particulate Matter ($PM_{2.5}$)[1,2]	Carbon Monoxide (CO)[1,2]
Annual[1,2]	1.91	1.11	0.02	1.71	0.81	8.77

SOURCE: EMC Planning Group 2020
NOTES:
1. Results may vary due to rounding.
2. Expressed in tons per year.

Greenhouse Gas Emissions

Detailed model results for GHG emissions are attached to this memorandum.

Existing Emissions

According to the CalEEMod results the two existing single-family residences on the project site generate approximately 37.11 MT CO_2e per year.

Unmitigated Emissions

Construction GHG Emissions

From the CalEEMod results, demolition and construction activity is estimated to generate a maximum annual volume of 582.19 MT CO_2e of unmitigated GHG emissions in any one year of construction.

Operational GHG Emissions

The model results indicate that the proposed project would generate annual unmitigated operational GHG emissions of 1,482.91 MT CO_2e. Unmitigated annual GHG emissions volume estimates are summarized in Table 3, Unmitigated Operational GHG Emissions.

Table 3 Unmitigated Operational GHG Emissions

Emissions Sources	CO_2e[1,2]
Area	117.61
Energy[3]	159.08
Mobile	1,137.15
Waste	57.93
Water[4]	11.14
Buildout	1,482.91

SOURCE: EMC Planning Group 2022
NOTES:
1. Results may vary due to rounding.
2. Expressed in MT CO_2e per year.

Carbon Sequestration Potential

The estimated change in carbon sequestration potential on the project site is shown in Section 2.3 of the model results for the proposed project. The model results show that development of the site would result in a one-time loss of 114.70 MT CO_2e sequestration potential when the cropland is removed. The annualized average of the one-time loss in carbon sequestration potential associated with the proposed project (30-year lifetime) would equate to 3.82 MT CO_2e per year. This amount is added to the project's annual operational GHG emissions.

Net Unmitigated GHG Emissions at Buildout

Projected GHG emissions at buildout consist of the sum of operational emissions plus lost carbon sequestration potential, minus the existing site emissions as presented in Table 4, Net Unmitigated Annual GHG Emissions Attributable to the Project.

Table 4 Net Unmitigated Annual GHG Emissions Attributable to the Project

Operational Emissions	Carbon Sequestration Potential	Project Emissions	Existing Emissions	Net Project Emissions
1,482.91	3.82	1,486.73	<37.11>	1,449.63

SOURCE: EMC Planning Group 2020
NOTE: Results may vary due to rounding.

SOURCES

1. Breeze Software, a division of Trinity Consultants. 2022. *California Emissions Estimator (CalEEMod) Version 2020.40*. http://www.aqmd.gov/caleemod/home
2. -----. May 2021. *CalEEMod User's Guide (Version 2020.40)*. http://www.aqmd.gov/caleemod/user's-guide
3. Bay Area Air Quality Management District. May 2017. *California Environmental Quality Act Air Quality Guidelines.* http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en
4. VRPA Technologies Inc. March 2022. Technical Memorandum: *Caton Ranch Transportation Analysis Scoping Document*. March 1, 2022.
5. Associated Engineering Group.2021. Tentative Subdivision Map Caton Ranch. April 12,2021.

Caton Ranch Subdivision Existing Land Use - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Caton Ranch Subdivision Existing Land Use

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	2.00	Dwelling Unit	0.65	3,600.00	6

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

Caton Ranch Subdivision Existing Land Use - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

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	0.0312	2.8800e-003	0.1355	4.0000e-004		0.0198	0.0198		0.0198	0.0198	2.6278	0.8907	3.5184	0.0123	2.0000e-005	3.8313
Energy	2.6000e-004	2.2200e-003	9.4000e-004	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	4.0410	4.0410	2.9000e-004	8.0000e-005	4.0709
Mobile	0.0133	0.0248	0.1346	3.0000e-004	0.0273	3.2000e-004	0.0277	7.3200e-003	3.0000e-004	7.6200e-003	0.0000	27.3834	27.3834	1.5200e-003	1.4400e-003	27.8508
Waste						0.0000	0.0000		0.0000	0.0000	0.4385	0.0000	0.4385	0.0259	0.0000	1.0863
Water						0.0000	0.0000		0.0000	0.0000	0.0413	0.0918	0.1332	4.2600e-003	1.0000e-004	0.2701
Total	**0.0447**	**0.0299**	**0.2710**	**7.1000e-004**	**0.0273**	**0.0203**	**0.0476**	**7.3200e-003**	**0.0203**	**0.0276**	**3.1076**	**32.4070**	**35.5145**	**0.0443**	**1.6400e-003**	**37.1093**

4.0 Operational Detail - 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					
Unmitigated	0.0133	0.0248	0.1346	3.0000e-004	0.0273	3.2000e-004	0.0277	7.3200e-003	3.0000e-004	7.6200e-003	0.0000	27.3834	27.3834	1.5200e-003	1.4400e-003	27.8508

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	18.88	19.08	17.10	72,917	72,917
Total	18.88	19.08	17.10	72,917	72,917

Caton Ranch Subdivision Existing Land Use - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	16.80	7.10	7.90	48.40	13.90	37.70	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	0.506680	0.052144	0.166391	0.169333	0.035347	0.008400	0.013414	0.015650	0.000886	0.000306	0.025724	0.001426	0.00

5.0 Energy Detail

Historical Energy Use: N

	ROG	NOx	CO	SO2	Fugitive 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 Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.4756	1.4756	2.4000e-004	3.0000e-005	1.4902
NaturalGas Unmitigated	2.6000e-004	2.2200e-003	9.4000e-004	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5655	2.5655	5.0000e-005	5.0000e-005	2.5807

6.0 Area Detail

	ROG	NOx	CO	SO2	Fugitive 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					
Unmitigated	0.0312	2.8800e-003	0.1355	4.0000e-004		0.0198	0.0198		0.0198	0.0198	2.6278	0.8907	3.5184	0.0123	2.0000e-005	3.8313

Caton Ranch Subdivision Existing Land Use - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	0.1332	4.2600e-003	1.0000e-004	0.2701

8.0 Waste Detail

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	0.4385	0.0259	0.0000	1.0863

Caton Ranch Residential Subdivision, Newman CA - Proposed - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Caton Ranch Residential Subdivision, Newman CA - Proposed

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	4.10	Acre	4.10	178,596.00	0
Other Non-Asphalt Surfaces	1.91	Acre	1.91	83,199.60	0
Single Family Housing	112.00	Dwelling Unit	14.93	201,600.00	320

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Storm basin and street infrastructure from TM

Demolition - SFDs and Ancillary Structures

Vehicle Trips - Trip Rate from VRPA Tech 2022

Woodstoves - .

Energy Use - Comliance with 2019 Title 24 BEES
100% Elec demand from renewable sources

Water And Wastewater - Project will connect to municipal sewer

Land Use Change -

Mobile Land Use Mitigation -

Area Mitigation - Compliance with AB 1346

Energy Mitigation -

Water Mitigation - Compliance with State MWELO

Caton Ranch Residential Subdivision, Newman CA - Proposed - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Waste Mitigation - Compliance with AB 341

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	250.00
tblEnergyUse	NT24E	6,155.97	0.00
tblEnergyUse	T24E	142.58	0.00
tblLandUse	LotAcreage	36.36	14.93
tblVehicleTrips	ST_TR	9.54	10.00
tblVehicleTrips	SU_TR	8.55	10.00
tblVehicleTrips	WD_TR	9.44	10.00
tblWater	AerobicPercent	87.46	97.79
tblWater	AerobicPercent	87.46	97.79
tblWater	AerobicPercent	87.46	97.79
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	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					
2023	0.3032	2.6302	2.8301	6.4400e-003	0.4209	0.1117	0.5326	0.1578	0.1043	0.2621	0.0000	574.0587	574.0587	0.1032	0.0186	582.1879
2024	3.4002	1.5213	1.9671	4.4800e-003	0.1403	0.0609	0.2012	0.0380	0.0572	0.0953	0.0000	400.7160	400.7160	0.0576	0.0161	406.9553
Maximum	**3.4002**	**2.6302**	**2.8301**	**6.4400e-003**	**0.4209**	**0.1117**	**0.5326**	**0.1578**	**0.1043**	**0.2621**	**0.0000**	**574.0587**	**574.0587**	**0.1032**	**0.0186**	**582.1879**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2023	3-31-2023	1.0479	1.0479
2	4-1-2023	6-30-2023	0.6239	0.6239
3	7-1-2023	9-30-2023	0.6308	0.6308
4	10-1-2023	12-31-2023	0.6360	0.6360
5	1-1-2024	3-31-2024	0.5925	0.5925
6	4-1-2024	6-30-2024	0.5874	0.5874
7	7-1-2024	9-30-2024	0.8504	0.8504
		Highest	1.0479	1.0479

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	1.3214	0.0946	3.4125	9.3100e-003		0.4576	0.4576		0.4576	0.4576	60.3579	49.4699	109.8277	0.2838	8.9000e-004	117.1871
Energy	0.0143	0.1221	0.0520	7.8000e-004		9.8700e-003	9.8700e-003		9.8700e-003	9.8700e-003	0.0000	158.0746	158.0746	5.4100e-003	2.9200e-003	159.0797
Mobile	0.5734	0.8941	5.3073	0.0121	1.2293	0.0109	1.2402	0.3289	0.0103	0.3392	0.0000	1,118.0164	1,118.0164	0.0635	0.0589	1,137.1495
Waste						0.0000	0.0000		0.0000	0.0000	5.8461	0.0000	5.8461	0.3455	0.0000	14.4836
Water						0.0000	0.0000		0.0000	0.0000	2.5818	5.0522	7.6340	0.0683	5.7100e-003	11.0444
Total	**1.9091**	**1.1108**	**8.7717**	**0.0222**	**1.2293**	**0.4784**	**1.7077**	**0.3289**	**0.4777**	**0.8066**	**68.7858**	**1,330.6131**	**1,399.3988**	**0.7665**	**0.0684**	**1,438.9443**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.61**	**0.18**	**2.22**	**0.09**	**0.00**	**0.24**	**0.07**	**0.00**	**0.24**	**0.14**	**20.32**	**0.04**	**1.27**	**57.50**	**0.01**	**2.96**

2.3 Vegetation

Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	CO2e
Category	MT
Vegetation Land Change	-114.7000
Total	**-114.7000**

4.0 Operational Detail - 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					
Unmitigated	0.5734	0.8941	5.3073	0.0121	1.2293	0.0109	1.2402	0.3289	0.0103	0.3392	0.0000	1,118.0164	1,118.0164	0.0635	0.0589	1,137.1495

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,120.00	1,120.00	1120.00	3,282,677	3,282,677
Total	1,120.00	1,120.00	1,120.00	3,282,677	3,282,677

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	48.40	13.90	37.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.530702	0.051956	0.166139	0.152700	0.030655	0.007634	0.013363	0.016357	0.000829	0.000302	0.024359	0.001347	0.003656

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Other Non-Asphalt Surfaces	0.530702	0.051956	0.166139	0.152700	0.030655	0.007634	0.013363	0.016357	0.000829	0.000302	0.024359	0.001347	0.003656
Single Family Housing	0.530702	0.051956	0.166139	0.152700	0.030655	0.007634	0.013363	0.016357	0.000829	0.000302	0.024359	0.001347	0.003656

5.0 Energy Detail

Historical Energy Use: N

	ROG	NOx	CO	SO2	Fugitive 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 Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	16.6719	16.6719	2.7000e-003	3.3000e-004	16.8367
NaturalGas Unmitigated	0.0143	0.1221	0.0520	7.8000e-004		9.8700e-003	9.8700e-003		9.8700e-003	9.8700e-003	0.0000	141.4027	141.4027	2.7100e-003	2.5900e-003	142.2430

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					
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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
Single Family Housing	2.64979e+006	0.0143	0.1221	0.0520	7.8000e-004		9.8700e-003	9.8700e-003		9.8700e-003	9.8700e-003	0.0000	141.4027	141.4027	2.7100e-003	2.5900e-003	142.2430
Total		**0.0143**	**0.1221**	**0.0520**	**7.8000e-004**		**9.8700e-003**	**9.8700e-003**		**9.8700e-003**	**9.8700e-003**	**0.0000**	**141.4027**	**141.4027**	**2.7100e-003**	**2.5900e-003**	**142.2430**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	180190	16.6719	2.7000e-003	3.3000e-004	16.8367

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total		**16.6719**	**2.7000e-003**	**3.3000e-004**	**16.8367**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

	ROG	NOx	CO	SO2	Fugitive 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					
Unmitigated	1.3214	0.0946	3.4125	9.3100e-003		0.4576	0.4576		0.4576	0.4576	60.3579	49.4699	109.8277	0.2838	8.9000e-004	117.1871

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	0.1947					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8043					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.3092	0.0870	2.7810	9.2800e-003		0.4542	0.4542		0.4542	0.4542	60.3579	48.5192	108.8771	0.2831	8.9000e-004	116.2194
Landscaping	0.0132	7.6000e-003	0.6314	3.0000e-005		3.4400e-003	3.4400e-003		3.4400e-003	3.4400e-003	0.0000	0.9506	0.9506	6.8000e-004	0.0000	0.9677
Total	**1.3214**	**0.0946**	**3.4125**	**9.3100e-003**		**0.4576**	**0.4576**		**0.4576**	**0.4576**	**60.3579**	**49.4699**	**109.8277**	**0.2838**	**8.9000e-004**	**117.1871**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Water Efficient Irrigation System

Caton Ranch Residential Subdivision, Newman CA - Proposed - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	7.6340	0.0683	5.7100e-003	11.0444

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.29725 / 4.31981	7.6340	0.0683	5.7100e-003	11.0444
Total		**7.6340**	**0.0683**	**5.7100e-003**	**11.0444**

8.0 Waste Detail

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	5.8461	0.3455	0.0000	14.4836

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

Caton Ranch Residential Subdivision, Newman CA - Proposed - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Single Family Housing	28.8	5.8461	0.3455	0.0000	14.4836
Total		**5.8461**	**0.3455**	**0.0000**	**14.4836**

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-114.7000	0.0000	0.0000	-114.7000

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	18.5 / 0	-114.7000	0.0000	0.0000	-114.7000
Total		**-114.7000**	**0.0000**	**0.0000**	**-114.7000**

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Caton Ranch Subdivision

Fuel Demand

2025 Fuel Demand

Vehicle Class	Fuel	Process	Kgal/day	Fuel Type	Demand
All Other Buses	Dsl	IDLEX	3.91E-06	**Diesel**	
All Other Buses	Dsl	RUNEX	0.000366	Kgal/day	**0.107683182**
LDA	Dsl	RUNEX	0.000167	KGal/yr	**39.30436146**
LDT1	Dsl	RUNEX	2.32E-06		
LDT2	Dsl	RUNEX	0.000157	**Gas**	
LHD1	Dsl	IDLEX	6.32E-05	Kgal/day	**0.30638642**
LHD1	Dsl	RUNEX	0.010363	KGal/yr	**111.8310433**
LHD2	Dsl	IDLEX	3.60E-05		
LHD2	Dsl	RUNEX	0.004743	**Hybrid**	
MDV	Dsl	RUNEX	0.000924	kgal/day	**0.002813072**
MH	Dsl	RUNEX	0.000275	Kgal/yr	**1.026771338**
Motor Coach	Dsl	IDLEX	1.42E-05		
Motor Coach	Dsl	RUNEX	0.000324	**TOTAL**	
PTO	Dsl	RUNEX	0.001204	KGal/yr	**152.1621761**
SBUS	Dsl	IDLEX	5.87E-05	Gal/yr	**152162.1761**
SBUS	Dsl	RUNEX	0.000673		
T6 CAIRP Class 4	Dsl	IDLEX	2.45E-07		
T6 CAIRP Class 4	Dsl	RUNEX	3.09E-05		
T6 CAIRP Class 5	Dsl	IDLEX	3.27E-07	Mileage	
T6 CAIRP Class 5	Dsl	RUNEX	4.25E-05	Check:	
T6 CAIRP Class 6	Dsl	IDLEX	1.07E-06		
T6 CAIRP Class 6	Dsl	RUNEX	0.000108	VMT/yr	3,282,677.00
T6 CAIRP Class 7	Dsl	IDLEX	1.78E-06	mpg	21.57354136
T6 CAIRP Class 7	Dsl	RUNEX	0.000643		
T6 Instate Delivery Class 4	Dsl	IDLEX	1.47E-05		
T6 Instate Delivery Class 4	Dsl	RUNEX	0.000281		
T6 Instate Delivery Class 5	Dsl	IDLEX	1.56E-05		
T6 Instate Delivery Class 5	Dsl	RUNEX	0.000302		
T6 Instate Delivery Class 6	Dsl	IDLEX	4.79E-05		
T6 Instate Delivery Class 6	Dsl	RUNEX	0.000934		
T6 Instate Delivery Class 7	Dsl	IDLEX	1.68E-05		
T6 Instate Delivery Class 7	Dsl	RUNEX	0.000511		
T6 Instate Other Class 4	Dsl	IDLEX	6.05E-05		
T6 Instate Other Class 4	Dsl	RUNEX	0.001289		
T6 Instate Other Class 5	Dsl	IDLEX	0.000123		
T6 Instate Other Class 5	Dsl	RUNEX	0.002765		
T6 Instate Other Class 6	Dsl	IDLEX	8.02E-05		
T6 Instate Other Class 6	Dsl	RUNEX	0.001734		
T6 Instate Other Class 7	Dsl	IDLEX	6.39E-05		
T6 Instate Other Class 7	Dsl	RUNEX	0.001324		
T6 Instate Tractor Class 6	Dsl	IDLEX	1.76E-06		
T6 Instate Tractor Class 6	Dsl	RUNEX	4.08E-05		
T6 Instate Tractor Class 7	Dsl	IDLEX	6.91E-05		
T6 Instate Tractor Class 7	Dsl	RUNEX	0.001963		

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Caton Ranch Subdivision

Fuel Demand

T6 OOS Class 4	Dsl	IDLEX	1.42E-07
T6 OOS Class 4	Dsl	RUNEX	1.77E-05
T6 OOS Class 5	Dsl	IDLEX	1.89E-07
T6 OOS Class 5	Dsl	RUNEX	2.43E-05
T6 OOS Class 6	Dsl	IDLEX	6.17E-07
T6 OOS Class 6	Dsl	RUNEX	6.21E-05
T6 OOS Class 7	Dsl	IDLEX	9.51E-07
T6 OOS Class 7	Dsl	RUNEX	0.000426
T6 Public Class 4	Dsl	IDLEX	7.10E-06
T6 Public Class 4	Dsl	RUNEX	8.73E-05
T6 Public Class 5	Dsl	IDLEX	2.06E-05
T6 Public Class 5	Dsl	RUNEX	0.000258
T6 Public Class 6	Dsl	IDLEX	1.87E-05
T6 Public Class 6	Dsl	RUNEX	0.000232
T6 Public Class 7	Dsl	IDLEX	2.79E-05
T6 Public Class 7	Dsl	RUNEX	0.000449
T6 Utility Class 5	Dsl	IDLEX	2.00E-06
T6 Utility Class 5	Dsl	RUNEX	5.55E-05
T6 Utility Class 6	Dsl	IDLEX	3.79E-07
T6 Utility Class 6	Dsl	RUNEX	1.04E-05
T6 Utility Class 7	Dsl	IDLEX	4.29E-07
T6 Utility Class 7	Dsl	RUNEX	1.45E-05
T7 CAIRP Class 8	Dsl	IDLEX	0.001387
T7 CAIRP Class 8	Dsl	RUNEX	0.017974
T7 NNOOS Class 8	Dsl	IDLEX	0.001499
T7 NNOOS Class 8	Dsl	RUNEX	0.02101
T7 NOOS Class 8	Dsl	IDLEX	0.000647
T7 NOOS Class 8	Dsl	RUNEX	0.007729
T7 Other Port Class 8	Dsl	IDLEX	9.73E-06
T7 Other Port Class 8	Dsl	RUNEX	0.000361
T7 POAK Class 8	Dsl	IDLEX	4.26E-05
T7 POAK Class 8	Dsl	RUNEX	0.000855
T7 POLA Class 8	Dsl	IDLEX	4.94E-05
T7 POLA Class 8	Dsl	RUNEX	0.001244
T7 Public Class 8	Dsl	IDLEX	6.20E-05
T7 Public Class 8	Dsl	RUNEX	0.001506
T7 Single Concrete/Transit Mix	Dsl	IDLEX	2.44E-05
T7 Single Concrete/Transit Mix	Dsl	RUNEX	0.000627
T7 Single Dump Class 8	Dsl	IDLEX	4.64E-05
T7 Single Dump Class 8	Dsl	RUNEX	0.000922
T7 Single Other Class 8	Dsl	IDLEX	0.000159
T7 Single Other Class 8	Dsl	RUNEX	0.003116
T7 SWCV Class 8	Dsl	IDLEX	2.02E-05
T7 SWCV Class 8	Dsl	RUNEX	0.001405
T7 Tractor Class 8	Dsl	IDLEX	0.000876
T7 Tractor Class 8	Dsl	RUNEX	0.012086
T7 Utility Class 8	Dsl	IDLEX	1.43E-06
T7 Utility Class 8	Dsl	RUNEX	6.86E-05

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Caton Ranch Subdivision

Fuel Demand

UBUS	Dsl	RUNEX	0.0004
LDA	Gas	RUNEX	0.12448
LDA	Gas	STREX	0.003721
LDT1	Gas	RUNEX	0.011306
LDT1	Gas	STREX	0.00042
LDT2	Gas	RUNEX	0.065666
LDT2	Gas	STREX	0.002064
LHD1	Gas	IDLEX	6.53E-05
LHD1	Gas	RUNEX	0.017453
LHD1	Gas	STREX	0.000208
LHD2	Gas	IDLEX	1.27E-05
LHD2	Gas	RUNEX	0.003322
LHD2	Gas	STREX	3.48E-05
MCY	Gas	RUNEX	0.000639
MCY	Gas	STREX	6.97E-05
MDV	Gas	RUNEX	0.068999
MDV	Gas	STREX	0.002397
MH	Gas	RUNEX	0.001245
MH	Gas	STREX	2.32E-07
OBUS	Gas	IDLEX	3.29E-06
OBUS	Gas	RUNEX	0.000633
OBUS	Gas	STREX	5.65E-06
SBUS	Gas	IDLEX	3.38E-05
SBUS	Gas	RUNEX	0.000543
SBUS	Gas	STREX	2.90E-06
T6TS	Gas	IDLEX	1.78E-05
T6TS	Gas	RUNEX	0.002888
T6TS	Gas	STREX	3.05E-05
T7IS	Gas	RUNEX	8.12E-06
T7IS	Gas	STREX	1.16E-07
UBUS	Gas	RUNEX	0.000114
UBUS	Gas	STREX	5.20E-07
LDA	Phe	RUNEX	0.002222
LDA	Phe	STREX	8.63E-05
LDT1	Phe	RUNEX	9.88E-06
LDT1	Phe	STREX	4.28E-07
LDT2	Phe	RUNEX	0.000267
LDT2	Phe	STREX	1.26E-05
MDV	Phe	RUNEX	0.000203
MDV	Phe	STREX	1.19E-05

Health Risk Assessment

C

APPENDIX

PRINCE ROAD SUBDIVISION
AIR QUALITY AND GHG ASSESSMENT
NEWMAN, CALIFORNIA

November 10, 2015

♦ ♦ ♦

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JOB NO: 15-003

INTRODUCTION

This report assesses the air quality and greenhouse gas (GHG) emission impacts associated with the Prince Road Residential Subdivision project located in unincorporated Newman, California. The project proposes to construct and operate 117 new residential dwelling units (63 single-family and 54 condominiums). The project site borders the southern edge of Newman on land that is primarily an agricultural field used for row crops. To the north and west of the project site are additional residential subdivisions.

The project's potential impacts on the local and regional air quality during construction and operation are assessed in this report. Potential cancer risk and hazard impacts resulting from project construction are also assessed. Finally, GHG impacts were evaluated. The San Joaquin Valley Air Pollution Control District (SJVAPCD) has published the Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) that was used to conduct this air quality analysis.[1] This report describes existing air quality conditions, construction period air quality impacts, operational air quality impacts (at both a local and regional scale), and identifies mitigation measures necessary to reduce or eliminate air quality impacts identified as significant.

SETTING

TOPOGRAPHIC CONSIDERATIONS

The project site is located in Stanislaus County in the northern portion of the San Joaquin Valley Air Basin. The California Air Resources Board (CARB) defines the boundaries of the basin by the San Joaquin Valley within the Sierra Nevada Mountains to the east, the Coast Ranges in the west, and the Tehachapi mountains in the south. The valley is basically flat with a slight downward gradient to the northwest. The valley opens to the ocean at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. The San Joaquin Valley, thus, could be considered a "bowl" with the primary opening to the north. The surrounding topographic features restrict air movement through and out of the basin and, as a result, impede the dispersion of air pollutants from the basin. Wind flow is usually down the valley from the north, but the Tehachapi Mountains block or restrict the southward progression of airflow. The Sierra Nevada is a substantial barrier from the usual winds that have a general westerly flow. The topographical features result in weak airflow. The flow is further restricted vertically by inversion layers that are common in the San Joaquin Valley air basin throughout the year. An inversion layer is created when a mass of warm dry air sits over cooler air near the ground, preventing vertical dispersion of pollutants from the air mass below. During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 1,500 to 3,000 feet above the valley floor. Airflow is considerably restricted since mountain ranges surrounding the valley are generally above the inversion. These inversions lead to a buildup of ozone and ozone precursor pollutants. During the fall and winter months, strong surface-based inversions occur from 500 to 1,000 feet above the valley floor (SJVAPCD 1998). Wintertime inversions trap very stable air near the surface and lead primarily to a buildup of

[1] SJVAPCD. 2015. Guide for Assessing and Mitigating Air Quality Impacts. March.

particulate matter air pollutants. Very light winds are also characteristic with these wintertime surface-based inversions.

AIR BASIN CHARACTERISTICS

The climate of the project area is characterized by hot dry summers and cool, mild winters. Clear days are common from spring through fall. Daytime temperatures in the summer often approach or exceed 100 degrees Fahrenheit, with lows in the 60s. In the winter, daytime temperatures are usually in the 50s, with lows around 35 degrees Fahrenheit. Radiation fog is common in the winter, and may persist for days. Partly to mostly cloudy days are common in winter, as most precipitation received in the Valley falls from November through April.

Superimposed on this seasonal regime is the diurnal wind cycle. In the San Joaquin Valley, this cycle takes the form of a combination of a modified sea breeze-land breeze and mountain-valley regimes. The sea breeze-land breeze regime typically has a modified sea breeze flowing into the Valley from the north during the late day and evening and then a land breeze flowing out of the Valley late at night and early in the morning. The mountain-valley regime has an upslope (mountain) flow during the day and a down slope (valley) flow at night. These effects create a complexity of regional wind flow and pollutant transport within the Valley.

The pollution potential of the San Joaquin Valley is very high. The San Joaquin Valley has one of the most severe air pollution problems in the State and the Country. Surrounding elevated terrain in conjunction with temperature inversions frequently restrict lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in late spring, summer, and early fall are ideal conditions for the formation of ozone, where the Valley frequently experiences unhealthy air pollution days. Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high respirable particulate matter (PM_{10}) concentrations.

REGULATORY SETTING

The Federal and California Clean Air Acts have established ambient air quality standards for different pollutants. National ambient air quality standards (NAAQS) were established by the Federal Clean Air Act of 1970 (amended in 1977 and 1990) for six "criteria" pollutants. These criteria pollutants now include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), respirable particulate matter with a diameter less than 10 microns (PM_{10}), sulfur dioxide ($S0_2$), and lead (Pb). In 1997, The United States Environmental Protection Agency (US EPA) added fine particulate matter ($PM_{2.5}$) as a criteria pollutant. The air pollutants for which standards have been established are considered the most prevalent air pollutants that are known to be hazardous to human health. California ambient air quality standards (CAAQS) include the NAAQS pollutants and also hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. These additional CAAQS pollutants tend to have unique sources and are not typically examined in environmental air quality assessments. In addition, lead concentrations have decreased dramatically since it was removed from motor vehicle fuels.

Federal Regulations

At the federal level, the US EPA administers and enforces air quality regulations. Federal air

quality regulations were developed primarily from implementation of the Federal Clean Air Act. If an area does not meet NAAQS over a set period (three years), EPA designates it as a "nonattainment" area for that particular pollutant. EPA requires States that have areas that do not comply with the national standards to prepare and submit air quality plans showing how the standards would be met. If the States cannot show how the standards would be met, then they must show progress toward meeting the standards. These plans are referred to as the State Implementation Plan (SIP). Under severe cases, EPA may impose a federal plan to make progress in meeting the federal standards.

EPA also has programs for identifying and regulating hazardous air pollutants. The Clean Air Act requires EPA to set standards for these pollutants and sharply reduce emissions of controlled chemicals. Industries were classified as major sources if they emitted certain amounts of hazardous air pollutants. The US EPA also sets standards to control emissions of hazardous air pollutants through mobile source control programs. These include programs that reformulated gasoline, national low emissions vehicle standards, Tier 2 motor vehicle emission standards, gasoline sulfur control requirements, and heavy-duty engine standards.

The San Joaquin Valley Air Basin is subject to major air quality planning programs required by the Federal Clean Air Act (CAA) (1977, last amended in 1990, 42 United States Code [USC] 7401 *et seq.*) to address ozone, particulate matter air pollution, and carbon monoxide. The CAA requires that regional planning and air pollution control agencies prepare a regional Air Quality Plan to outline the measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve all standards within the deadlines specified in the Clean Air Act. These plans are submitted to the State, which after approval, submits them to US EPA as the SIP.

State Regulations

The California Clean Air Act (CCAA) of 1988, amended in 1992, outlines a program for areas in the State to attain the CAAQS by the earliest practical date. CARB is the State air pollution control agency and is a part of the California EPA. The California Clean Air Act sets more stringent air quality standards for all of the pollutants covered under national standards, and additionally regulates levels of vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. If an area does not meet CAAQS, CARB designates the area as a nonattainment area. The San Joaquin Valley Air Basin does not meet the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. CARB requires regions that do not meet CAAQS for ozone to submit clean air plans that describe plans to attain the standard or show progress toward attainment.

In addition to the US EPA, CARB further regulates the amount of air pollutants that can be emitted by new motor vehicles sold in California. Motor vehicle emissions standards have always been more stringent than federal standards since they were first imposed in 1961. CARB has also developed Inspection and Maintenance (I/M) and "Smog Check" programs with the California Bureau of Automotive Repair. Inspection programs for trucks and buses have also been implemented. CARB also sets standards for motor vehicle fuels sold in California.

San Joaquin Valley

The SJVAPCD is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings Tulare, and the San Joaquin Valley portion of Kern. The primary role of the SJVAPCD is to develop plans and implement control measures in the San Joaquin Valley to control air pollution. These controls primarily affect stationary sources such as industry and power plants. Rules and regulations have been developed by SJVAPCD to control air pollution from a wide range of air pollution sources. In March 2007, an Indirect Source Review (ISR) rule was adopted that controls air pollution from new land developments. SJVAPCD also conducts public education and outreach efforts such as the Spare the Air, Wood Burning, and Smoking Vehicle voluntary programs.

NATIONAL AND STATE AMBIENT AIR QUALITY STANDARDS

The CAA and CCAA promulgate, respectively, national and State ambient air quality standards. Air quality standards have been established by US EPA (i.e., NAAQS) and California (i.e., CAAQS) for specific air pollutants most pervasive in urban environments. The NAAQS and CAAQS are shown in Table 1. Ambient standards specify the concentration of pollutants to which the public may be exposed without adverse health effects. Individuals vary widely in their sensitivity to air pollutants, and standards are set to protect more pollution-sensitive populations (e.g., children and the elderly). National and State standards are reviewed and updated periodically based on new health studies. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent. For planning purposes, regions like the San Joaquin Valley Air Basin are given an air quality status designation by the federal and State regulatory agencies. Areas with monitored pollutant concentrations that are lower than ambient air quality standards are designated "attainment" on a pollutant-by-pollutant basis. When monitored concentrations exceed ambient standards within an air basin, it is designated "nonattainment" for that pollutant. US EPA designates areas as "unclassified" when insufficient data are available to determine the attainment status; however, these areas are typically considered to be in attainment of the standard.

TABLE 1 Ambient Air Quality Standards[2]

Pollutant	Averaging Time	California Standards Concentration	National Standards Concentration
Ozone	1-hour	0.09 ppm (180 $\mu g/m^3$)	—
	8-hour	0.070 ppm (137 $\mu g/m^3$)	0.075 ppm (147 $\mu g/m^3$) (3-year average of annual 4th highest daily maxima)
Carbon Monoxide	8-hour	9.0 ppm (10,000 $\mu g/m^3$)	9 ppm (10,000 $\mu g/m^3$)
	1-hour	20 ppm (23,000 $\mu g/m^3$)	35 ppm (40,000 $\mu g/m^3$)
Nitrogen dioxide	Annual Average	0.030 ppm (57 $\mu g/m^3$)	0.053 ppm (100 $\mu g/m^3$)
	1-hour	0.18 ppm (339 $\mu g/m^3$)	0.100 ppm (188 $\mu g/m^3$) (3-year average of annual 98th percentile daily maxima)
Sulfur dioxide			
	24-hour	0.04 ppm (105 $\mu g/m^3$)	—
	3-hour	—	0.5 ppm (1,300 $\mu g/m^3$)
	1-hour	0.25 ppm (655 $\mu g/m^3$)	0.075 ppm (196 $\mu g/m^3$) (3-year average of annual 99th percentile daily maxima)
Respirable particulate matter (10 micron)	24-hour	50 $\mu g/m^3$	150 $\mu g/m^3$
	Annual Arithmetic Mean	20 $\mu g/m^3$	—
Fine particulate matter (2.5 micron)	Annual Arithmetic Mean	12 $\mu g/m^3$	12.0 $\mu g/m^3$ (3-year average)
	24-hour	—	35 $\mu g/m^3$ (3-year average of annual 98th percentile daily concentrations)
Sulfates	24-hour	25 $\mu g/m^3$	—
Lead	30-day	1.5 $\mu g/m^3$	—
	3 Month Rolling Average	—	0.15 $\mu g/m^3$

Source: CARB website, 6/4/13.
SO_2 Federal 24 hour and annual standards are not applicable in the SJVAPCD.
$\mu g/m^3$ = micrograms per cubic meter
ppm = parts per million

CRITERIA AIR POLLUTANTS AND THEIR HEALTH EFFECTS

The primary criteria air pollutants emitted by the proposed project would include ozone (O_3) precursors (NO_x and ROG), carbon monoxide (CO), and suspended particulate matter (PM_{10} and

[2] Source: California Air Resources Board (http://www.arb.ca.gov)

$PM_{2.5}$). Other criteria pollutants, such as lead (Pb) and sulfur dioxide (SO_2), would not be substantially emitted by the proposed project or project traffic, and air quality standards for them are being met throughout the San Joaquin Valley Air Basin.

Ozone (O_3)

While O_3 serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation potentially harmful to humans, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human respiratory system and to sensitive species of plants. O_3 concentrations build to peak levels during periods of light winds, bright sunshine, and high temperatures. Research has shown that exposure to ozone damages the alveoli (the individual air sacs in the lung where the exchange of oxygen and carbon dioxide between the air and blood takes place). Ozone is a strong irritant that attacks the respiratory system, leading to the damage of lung tissue. Short-term O_3 exposure can reduce lung function in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis. A healthy person exposed to high concentrations may become nauseated or dizzy, may develop headache or cough, or may experience a burning sensation in the chest. Sensitivity to O_3 varies among individuals, but about 20 percent of the population is sensitive to O_3, with exercising children being particularly vulnerable.

O_3 is formed in the atmosphere by a complex series of photochemical reactions that involve "ozone precursors" that are two families of pollutants: oxides of nitrogen (NO_x) and reactive organic gases (ROG). NO_x and ROG are emitted from a variety of stationary and mobile sources. While NO_2, an oxide of nitrogen, is another criteria pollutant itself, ROGs are not in that category, but are included in this discussion as O_3 precursors. Recently, CARB adopted an 8-hour health based standard for O_3 of 0.070 parts per million (ppm). More recently, US EPA revised the 8-hour NAAQS for O_3 from 0.08 ppm to 0.075 ppm.

Carbon Monoxide (CO)

CO is a colorless, odorless, poisonous gas. Carbon monoxide's health effects are related to its affinity for hemoglobin in the blood. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause dizziness and fatigue, and causes reduced lung capacity, impaired mental abilities and central nervous system function, and induces angina in persons with serious heart disease. Primary sources of CO in ambient air are passenger cars, light-duty trucks, and residential wood burning. The monitored CO levels in the Valley during the last 10 years have been well below ambient air quality standards.

Nitrogen Dioxide (NO_2)

The major health effect from exposure to high levels of NO_2 is the risk of acute and chronic respiratory disease. NO_2 is a combustion by-product, but it can also form in the atmosphere by chemical reaction. NO_2 is a reddish-brown colored gas often observed during the same conditions that produce high levels of O_3 and can affect regional visibility. NO_2 is one compound in a group of compounds consisting of NO_x. As described above, NO_x is an O_3

precursor compound. Monitored levels of NO_2 in the Valley are below ambient air quality standards.

Particulate Matter (PM)

Respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled and cause adverse health effects. PM_{10} and $PM_{2.5}$ are a health concern, particularly at levels above the federal and State ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health because minute particles are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of $PM_{2.5}$ because their immune and respiratory systems are still developing. These fine particulates have been demonstrated to decrease lung function in children. Certain components of particulate matter are linked to higher rates of lung cancer. Very small particles of certain substances (e.g., sulfates and nitrates) can also directly cause lung damage or can contain absorbed gases (e.g., chlorides or ammonium) that may be injurious to health.

Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as mining and demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. In addition to health effects, particulates also can damage materials and reduce visibility. Dust comprised of large particles (diameter greater than 10 microns) settles out rapidly and is more easily filtered by human breathing passages. This type of dust is considered more of a soiling nuisance rather than a health hazard.

In 1983, CARB replaced the standard for "suspended particulate matter" with a standard for suspended PM_{10} or "respirable particulate matter." This standard was set at 50 micrograms per cubic meter ($\mu g/m^3$) for a 24-hour average and 30 $\mu g/m^3$ for an annual average. CARB revised the annual PM_{10} standard in 2002, pursuant to the Children's Environmental Health Protection Act. The revised PM_{10} standard is 20 $\mu g/m^3$ for an annual average. $PM_{2.5}$ standards were first promulgated by the EPA in 1997 and were recently revised in late 2006 to lower the 24-hour $PM_{2.5}$ standard to 35 $\mu g/m^3$ for 24-hour exposures. That same action by EPA and revoked the annual PM_{10} standard due to lack of scientific evidence correlating long-term exposures of ambient PM_{10} with health effects. CARB has only adopted an annual average $PM_{2.5}$ standard, which is set at 12 $\mu g/m^3$. This is equal to the NAAQS of 12 $\mu g/m^3$.

ATTAINMENT STATUS

Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The San Joaquin Valley as a whole does not meet State or federal ambient air quality standards for ground level O_3 and State standards for PM_{10} and $PM_{2.5}$.

The attainment status for the Valley with respect to various pollutants of concern is described in Table 2.

TABLE 2 Project Area Attainment Status

Pollutant	Federal Status	State Status
Ozone (O_3) – 1-Hour Standard	No Designation	Severe Nonattainment
Ozone (O_3) – 8-Hour Standard	Extreme Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Attainment-Maintenance	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment-Maintenance	Attainment
Nitrogen Dioxide (NO2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Sulfates and Lead	No Designation	Attainment
Hydrogen Sulfide	No Designation	Unclassified
Visibility Reducing Particles	No Designation	Unclassified

Under the Federal Clean Air Act, the US EPA has classified the region as *serious nonattainment* for the 8-hour O_3 standard. On March 19, 2008, the US EPA posted a final rule in the Federal Register affirming the agency's October 30, 2006 determination that the Valley has attained the NAAQS for PM_{10}. The Valley is designated *nonattainment* for the older 1997 $PM_{2.5}$ NAAQS. SJVAPCD has determined, based on the 2004-06 $PM_{2.5}$ data, that the Valley has attained the 1997 24-Hour $PM_{2.5}$ standard; however, US EPA recently designated the Valley as nonattainment for the newer 2006 24-hour $PM_{2.5}$ standard. The US EPA classifies the region as *attainment* or *unclassified* for all other air pollutants, which include CO and NO_2.

At the State level, the region is considered *serious non-attainment* for ground level O_3 and *non-attainment* for PM_{10} and $PM_{2.5}$. California ambient air quality standards are more stringent than the national ambient air quality standards. The region is required to adopt plans on a triennial basis that show progress towards meeting the State O_3 standard. The area is considered attainment or unclassified for all other pollutants.

TOXIC AIR CONTAMINANTS

Besides the "criteria" air pollutants, there is another group of substances found in ambient air referred to as Hazardous Air Pollutants (HAPs) under the Federal Clean Air Act and Toxic Air Contaminants (TACs) under the California Clean Air Act. These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. They are regulated at the local, State, and federal level.

HAPs are the air contaminants identified by US EPA as known or suspected to cancer, serious illness, birth defects, or death. Many of these contaminants originate from human activities, such as fuel combustion and solvent use. Mobile source air toxics (MSATs) are a subset of the 188 HAPS. Of the 21 HAPs identified by EPA as MSATs, a priority list of six priority HAPs were identified that include: diesel exhaust, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. While vehicle miles traveled in the United States is expected to increase by 64 percent over the period 2000 to 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to control mobile source emissions (by 57 percent to 67 percent depending on the contaminant).[3]

California developed a program under the Tanner Toxics Act (Assembly Bill [AB] 1807) to identify, characterize and control TACs. Subsequently, AB 2728 incorporated all 188 HAPs into the AB 1807 process. TACs include all HAPs plus other containments identified by CARB. These are a broad class of compounds known to cause morbidity or mortality (cancer risk). TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level.

Particulate matter from diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to CARB, diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by ARB, and are listed as carcinogens either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB reports that recent air pollution studies have shown an association that diesel exhaust and other cancer-causing toxic air contaminants emitted from vehicles are responsible for much of the overall cancer risk from TACs in California. Particulate matter emitted from diesel-fueled engines (DPM) was found to comprise much of that risk. In August 1998, CARB formally identified DPM as a TAC. DPM is of particular concern since it can be distributed over large regions, thus leading to widespread public exposure. The particles emitted by diesel engines are coated with chemicals, many of which have been identified by EPA as HAPs, and by CARB as TACs. Diesel engines emit particulate matter at a rate about 20 times greater than comparable gasoline engines. The vast majority of diesel exhaust particles (over 90 percent) consist of $PM_{2.5}$, which are the particles that can be inhaled deep into the lung. Like other particles of this size, a portion will eventually become trapped within the lung possibly leading to adverse health effects. While the gaseous portion of diesel exhaust also contains TACs, CARB's 1998 action was specific to DPM, which accounts for much of the cancer-causing potential from diesel exhaust. California has adopted a comprehensive diesel risk reduction program to reduce DPM emissions 85 percent by 2020. The US EPA and CARB adopted low sulfur diesel fuel standards in 2006 that reduce diesel particulate matter substantially.

[3] Federal Highway Administration, 2006. Interim Guidance on Air Toxic Analysis in NEPA Documents.

Smoke from residential wood combustion can be a source of TACs. Wood smoke is typically emitted during wintertime when dispersion conditions are poor. Localized high TAC concentrations can result when cold stagnant air traps smoke near the ground and, with no wind; the pollution can persist for many hours, especially in sheltered valleys during winter. Wood smoke also contains a significant amount of PM_{10} and $PM_{2.5}$. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

REGIONAL AIR QUALITY PLANS

In response to not meeting the NAAQS, the region is required to submit attainment plans to US EPA through the State, which are referred to as SIP.

CARB submitted the 2004 Extreme Ozone Attainment Demonstration Plan to EPA in 2004, which addressed the old 1-hour NAAQS. The region's 2007 Ozone Plan, addressing the 8-hour ozone NAAQS, was submitted to US EPA and approved in March 2012. That plan predicts attainment of the standard throughout 90 percent of the district by 2020 and the entire district by 2024. To accomplish these goals, the plan would reduce NO_x emissions further by 75 percent and ROG emissions by 25 percent. A wide variety of control measures are included in these plans, such as reducing or offsetting emissions from construction and traffic associated with land use developments. The air basin was recently designated as an extreme ozone nonattainment area for the more stringent 2008 8-hour ozone NAAQS. The plan to address this standard is expected to be due to EPA in 2016. Addressing the 2008 8-hour ozone standard will pose a tremendous challenge for the Valley, given the naturally high background ozone levels and ozone transport into the Valley.

On April 25, 2008, US EPA proposed to approve the 2007 PM_{10} Maintenance Plan and Request for Redesignation. The region now meets the NAAQS for PM_{10}. The SJVAPCD adopted the 2008 $PM_{2.5}$ Plan on April 30, 2008. US EPA has designated the basin as Attainment.

The SJVAPCD adopted the 2012 $PM_{2.5}$ Plan on December 20, 2012. This plan was approved by CARB on January 24, 2013. This plan will assure that the Valley will attain the 2006 $PM_{2.5}$ NAAQS by the 2019 deadline. The plan uses control measures to reduce NO_x, which also leads to fine particulate formation in the atmosphere. The plan incorporates measures to reduce direct emissions of $PM_{2.5}$, including a strengthening of regulations for various San Joaquin Valley Air Basin industries and the general public through new rules and amendments.

Both the ozone and $PM_{2.5}$ plans include all measures (i.e., federal, State, and local) that would be implemented through rule making or program funding to reduce air pollutant emissions. Transportation Control Measures (TCMs) are part of these plans. The plans described above addressing ozone also meet the state planning requirements.

SJVAPCD RULES AND REGULATIONS

The SJVAPCD has adopted rules and regulations that apply to land use projects, such as the proposed project. These are described below.

SJVAPCD Indirect Source Review Rule

On December 15, 2005, the SJVAPCD adopted the Indirect Source Review Rule (ISR or Rule 9510) to reduce ozone precursor (i.e., ROG and NO_x) and PM_{10} emissions from new land use development projects. The rule is the result of state requirements outlined in the regions' portion of the SIP. The SJVAPCD's SIP commitments are contained in the 2004 Extreme Ozone Attainment Demonstration Plan and the 2003 PM_{10} Plan. These plans identified the need to reduce PM_{10} and NO_x substantially in order to attain and maintain the ambient air-pollution standards on schedule. New projects that would generate substantial air pollutant emissions, for which final discretionary approval was granted after March 1, 2006 are subject to this rule. The rule requires projects to mitigate both construction and operational period emissions by applying the SJVAPCD-approved mitigation measures and paying fees to support programs that reduce emissions. Fees apply to the unmitigated portion of the emissions and are based on estimated costs to reduce the emissions from other sources plus expected costs to cover administration of the program. The proposed project has submitted and received Air Impact Assessment (AIA) in support of the ISR.

Regulation VIII – Fugitive PM_{10}

SJVAPCD controls fugitive PM_{10} through Regulation VIII (Fugitive PM_{10} Prohibitions). The purpose of this regulation is to reduce ambient concentrations of PM_{10} by requiring actions to prevent, reduce or mitigate anthropogenic (human caused) fugitive dust emissions. This applies to activities such as construction, bulk materials, open areas, paved and unpaved roads, material transport, and agricultural areas. Sources regulated are required to provide dust control plans that meet the regulation requirements. Fees are collected by SJVAPCD to cover costs for reviewing plans and conducting field inspections.

SENSITIVE RECEPTORS

"Sensitive receptors" are defined as facilities where sensitive population groups, such as children, the elderly, the acutely ill, and the chronically ill, are likely to be located. These land uses include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. There are no sensitive receptors within 2.5 miles of the project boundaries. The closest sensitive receptors to the project are single family residences adjacent to the northern and western project property boundaries.

BUFFERS FROM SOURCES OF AIR POLLUTION

The SJVAPCD and CARB recommend that communities include buffers between sensitive receptors and sources of air toxic contaminant emissions and odors. In April 2005, CARB released the final version of the Air Quality and Land Use Handbook, which is intended to encourage local land use agencies to consider the risks from air pollution prior to making decisions that approve the siting of new sensitive receptors near sources of air pollution. CARB made recommendations regarding the siting of new sensitive land uses near highways, truck distribution centers, dry cleaners, gasoline dispensing stations, and other air pollution sources. The proposed project is located over 1,000 feet from State Route 33 (SR 33).

GREENHOUSE GASES

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2 and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger with a GWP of 23,900. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of equivalent CO_2 (CO_2e).

An expanding body of scientific research supports the theory that global warming is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California could be adversely affected by the global warming trend. Increased precipitation and sea level rise could increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

IMPACT ANALYSIS

STANDARDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines (Environmental Checklist) contains a list of project effects that may be considered significant. The project would result in a significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people;
- Generate GHG emissions either directly or indirectly that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The SJVAPCD has developed the Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015), also known as the GAMAQI. The following thresholds of significance, obtained from the SJVAPCD's GAMAQI, are used to determine whether a proposed project would result in a significant air quality impact:

1) Criteria Air Pollutants. SJVAPCD has published screening tools for determining projects that would have less-than-significant air quality impacts due to their size, or the Small Project Analysis Level (SPAL).
2) Toxic Air Contaminants or Hazardous Air Pollutants. Exposure to HAPs or TACs would be considered significant if the probability of contracting cancer for the Maximally Exposed Individual would exceed 20 in 1 million or would result in a Hazard Index greater than 1 for non-cancer health effects.
3) Odors. Odor impacts associated with the proposed project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors through development of a new odor source or placement of receptors near an existing odor source.
4) GHGs. In SJVAPCD's *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects Under CEQA*, the District establishes a requirement that land use development projects demonstrate a 29 percent reduction in GHG emissions from Business-As-Usual (BAU).

SJVAPCD CEQA guidance does not require quantitative analysis of construction emissions. The Air District's GAMAQI states: "PM_{10} emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult" (p. 29). The SJVAPCD's approach to CEQA analyses of construction PM_{10} impacts is to require implementation of effective and comprehensive control measures rather than to require detailed quantification of emissions. The SJVAPCD significance threshold for construction dust impacts is based on the appropriateness of construction dust controls. The SJVAPCD guidelines provide feasible control measures for construction emission of PM_{10} as specified in its Regulation VIII. The SJVAPCD has determined that implementation of the measures specified in Regulation VIII, along with additional or enhanced measures which may be appropriate for particular

projects, will constitute sufficient mitigation to reduce PM_{10} impacts to a level considered less-than-significant.

With respect to cumulative air quality impacts, the GAMAQI provides that any proposed project that would individually have a significant air quality impact (i.e., exceed significance thresholds for ROG, NO_x, or PM_{10}) would also be considered to have a significant cumulative impact. Although the GAMAQI does not provide guidance for evaluating cumulative air quality impacts in instances where project-specific emissions of criteria pollutants do not exceed the Air District's significance thresholds, it does state: "[a]ll but the largest individual sources emit ROG and NO_x in amounts too small to have a measurable effect on ambient ozone concentrations by themselves." In addition, the CEQA guidance provided by the Bay Area Air Quality Management District (BAAQMD) does address this condition, in both the District's previous guidance document and in its recently updated guidance document. In the absence of guidance on this matter from the SJVAPCD, the BAAQMD 2011 guidance document was therefore considered in establishing a threshold of significance for cumulative ozone emissions for purposes of this analysis, as follows. The BAAQMD CEQA Guideline state: "[n]o single project would be sufficient in size, by itself, to result in non-attainment of regional air quality standards. Consequently, the thresholds of significance discussed above (for individual project impacts) are the amount of pollution that is deemed cumulatively considerable and, therefore, a significant adverse impact." Based on the above, for purposes of this analysis, the project is considered to result in a cumulatively considerable air quality impact if the project emissions exceed the SJVAPCD significance thresholds for criteria pollutants/ozone precursors (ROG, NO_x, or PM_{10}), or the project is not consistent with the regional clean air plan.

AIR QUALITY IMPACTS

Project-related air quality impacts fall into two categories: short-term impacts due to construction, and long-term impacts due to the proposed Project operation. During construction, the proposed project would affect local particulate concentrations primarily due to fugitive dust sources and contribute to ozone and $PM_{10}/PM_{2.5}$ levels due to exhaust emissions. Over the long-term, the proposed project would result in an increase in emissions of ozone precursors such as ROG and NO_x, primarily due to increased motor vehicle trips.

Impact 1: Construction Dust. Construction activity involves a high potential for the emission of fugitive particulate matter emissions that would affect local air quality. This would be a ***less-than-significant*** with mitigation.

Construction activities would temporarily affect local air quality, causing a temporary increase in particulate dust and other pollutants. Dust emission during periods of construction would increase particulate concentrations at neighboring properties. This impact is potentially significant, but normally it can be mitigated.

Project construction is anticipated to begin in summer 2016. The site would be balanced with no substantial export or import of soil or fill. Demolition of existing residences and structures is expected to be 572 cubic yards, which would be hauled off-site.

Grading and site disturbance (e.g., vehicle travel on exposed areas) would likely result in the greatest emissions of dust and $PM_{10}/PM_{2.5}$. Windy conditions during construction could cause substantial emissions of $PM_{10}/PM_{2.5}$.

The SJVAPCD's GAMAQI emphasizes implementation of effective and comprehensive control measures rather than requiring a detailed quantification of construction emissions. SJVAPCD adopted a set of PM_{10} fugitive dust rules collectively called Regulation VIII. This regulation essentially prohibits the emissions of visible dust (limited to 20 percent opacity) and requires that disturbed areas or soils be stabilized. Compliance with Regulation VIII during the construction phase of the proposed project would be required. Prior to construction of each project phase, the applicant would be required to submit a dust control plan that meets the regulation requirements. These plans are reviewed by SJVAPCD and construction cannot begin until District approval is obtained. The provisions of Regulation VIII and its constituent rules pertaining to construction activities generally require:

- Effective dust suppression (e.g., watering) for land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill and demolition activities.
- Effective stabilization of all disturbed areas of a construction site, including storage piles, not used for seven or more days.
- Control of fugitive dust from on-site unpaved roads and off-site unpaved access roads.
- Removal of accumulations of mud or dirt at the end of the workday or once every 24 hours from public paved roads, shoulders and access ways adjacent to the site.
- Cease outdoor construction activities that disturb soils during periods with high winds.
- Record keeping for each day dust control measures are implemented.
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Landscape or replant vegetation in disturbed areas as quickly as possible.
- Prevent the tracking of dirt on public roadways. Limit access to the construction sites, so tracking of mud or dirt on to public roadways can be prevented. If necessary, use wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
- Suspend grading activity when winds (instantaneous gusts) exceed 25 mph or dust clouds cannot be prevented from extending beyond the site.

Anyone who prepares or implements a Dust Control Plan must attend a training course conducted by the District. Construction sites are subject to SJVAPCD inspections under this regulation.

Compliance with Regulation VIII, including the effective implementation of a Dust Control Plan that has been reviewed and approved by the SJVAPCD, would reduce dust and PM_{10} emissions to a less than significant level.

Impact 2: Construction Exhaust Emissions. Equipment and vehicle trips associated with construction would emit ozone precursor air pollutants on a temporary basis.

However, emissions would be below the GAMAQI significance thresholds and would be considered a ***less-than-significant*** impact.

Construction equipment exhaust effects air quality both locally and regionally. Emissions of DPM, a TAC, can affect local air quality. This impact is discussed under Impact 5.

SJVAPCD has published screening tools for determining projects that would have less-than-significant air quality impacts due to their size, or the SPAL. The screening size for single family land use development projects is 152 dwelling units and the screening size for condominium projects is 270 dwelling units. Because the project proposes to construct and operate 117 new residential units, which is below the lowest screening size for residential projects (152 dwelling units), this impact is considered less than significant.

The SJVAPCD Indirect Source Review Rule (Rule 9510) applies to construction of the proposed project since the project would exceed 50 dwelling units. Although the project's construction emissions of regional pollutants would not exceed the Air District's significance thresholds per the project screening size, the project is still required to comply with Rule 9510, to ensure that the project contributes its share of emission reductions in order to achieve the basin-wide reduction targets established in the Air District's ozone and particulate matter attainment plans. Rule 9510 would require that the project reduce construction exhaust emissions by 20 percent for NO_x and 45 percent for PM_{10}. SJVAPCD encourages reductions through on-site mitigation measures. (Note: The use of the term "mitigation" under Rule 9510 does not refer to mitigation of impacts under CEQA. Since the project would not exceed the CEQA significance thresholds, no mitigation under CEQA would be required). A combination of on-site and off-site (fee based) measures can be implemented to meet the overall emission reduction requirements. Because the project size is below the screening sizes developed by SJVAPCD, the overall impact from criteria pollutant emissions would be considered *less than significant*.

Mitigation Measure for Impact 2: None required. However, the project would be subject to SJVAPCD Rule 9510 that would require reduction of construction emissions of 20 percent for NO_x and 45 percent for PM_{10}. These reductions can be implemented through the use of newer or retrofitted construction fleets, a reduction of construction traffic, use of electrical powered stationary equipment, and idling restrictions for equipment and trucks.

Impact 3: Ozone Precursors and Particulate Matter. Proposed Project operational emissions, generated primarily by traffic, would increase emissions, but they would be below GAMAQI significance thresholds. These increases would be ***less-than-significant***.

As discussed above, the project would be below the SPAL screening size for residential projects, and operational criteria pollutant impacts would be considered less than significant.

As previously mentioned, the project is subject to SJVAPCD's Indirect Source Review or Rule 9510 (ISR) to reduce NO_x and PM_{10} emissions. Although the project's operational emissions of regional pollutants would not exceed the Air District's significance thresholds for each pollutant, as shown in Table 5, the project is still required to comply with Rule 9510, to ensure that the

project contributes its share of emissions reductions in order to achieve the basin-wide reduction targets established in the Air District's ozone and PM_{10} attainment plans. Under Rule 9510, the project would be required to reduce operational NO_x emissions by 33 percent and operational PM_{10} emissions by 50 percent over 10 years. Due to the nature of the project as a residential subdivision project, it is not feasible to implement on-site reduction measures such as incentives for ridesharing or carpooling, as in mixed-use projects. Increasing transit access may be possible through cooperative action between the project applicant and the regional transit agency StaRT. Likely, off-site mitigation fees will need to be paid by the applicant to achieve the required reductions under Rule 9510. These operational fees will provide the full reduction in operational emissions required under Rule 9510. Because the project size is below the SPAL screening sizes developed by SJVAPCD, the overall impact from criteria pollutant emissions would be considered *less than significant.*

Mitigation Measure for Impact 3: None Required. However, the project would be subject to SJVAPCD Rule 9510 that would require reductions of construction emissions by 33 percent for NO_x and 50 percent for PM_{10}. These reductions would take the form of an offsite mitigation fee payable to SJVAPCD to obtain off-site reductions.

Impact 4: Carbon monoxide concentrations from traffic. Mobile emissions generated by Project traffic would increase carbon monoxide concentrations at intersections in the Project vicinity. However, resulting concentrations would be below ambient air quality standards, and therefore, considered a ***less-than-significant*** impact.

Project traffic would increase concentrations of carbon monoxide along roadways providing access to the project. Carbon monoxide is a localized air pollutant, where highest concentrations are found very near sources. The major source of carbon monoxide is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volume and congestion. The GAMAQI recommends air quality modeling of CO concentrations following the Project-Level Carbon Monoxide Protocol developed by UC Davis.[4]

Emissions and ambient concentrations of CO have decreased greatly in recent years. These improvements are due largely to the introduction of cleaner burning motor vehicles and reformulated motor vehicle fuels. No exceedances of the State or federal CO standards have been recorded at any of San Joaquin Valley's monitoring stations in the past 15 years. The San Joaquin Valley Air Basin has attained the State and National CO standards.

However, despite this progress, localized CO concentrations are still a concern in the San Joaquin Valley and are addressed through the SJVAPCD screening method that can be used to determine with fair certainty that the effect a project has on any given intersection would not cause a potential CO hotspot. A project can be said to have a potential to create a CO violation or create a localized hotspot if either of the following conditions are met: level of service (LOS) on one or more streets or intersections would be reduced to LOS E or F; or the project would substantially worsen an already LOS F street or intersection within the project vicinity. As the

[4] UC Davis. 1998. Project-Level Carbon Monoxide Protocol. Institute of Transportation Studies.

proposed project will not do either of these, the potential impact on CO would be considered *less than significant*.

Other local pollutants, such as lead (Pb) and sulfur dioxide (SO_2) would not be substantially emitted by the project, and air quality standards for them are being met throughout the San Joaquin Valley Air Basin. Since it is evident that the project would not result in impacts involving these or other local pollutants, these pollutants are not evaluated in this report.

Mitigation Measure for Impact 4: None Required

Impact 5: Exposure of Sensitive Receptors to Toxic Air Contaminants. Construction activity, delivery trucks, employee traffic, and emissions from onsite vehicles used in maintenance activities would expose nearby receptors to toxic air contaminants. A screening health risk assessment to assess the potential cancer risk was conducted and the impacts would be ***less than significant with mitigation***.

Operation of this residential project is not considered a source of TAC emissions. As a result, the project operation would not cause emissions that expose sensitive receptors to unhealthy air pollutant levels. Because the project would not be a source of TACs, it would not contribute cumulatively to unhealthy exposure to TACs.

The project would include new sensitive receptors. Substantial sources of air pollution can adversely affect sensitive receptors proposed as part of new projects. A review of the area indicates that the nearest highway, SR 33, is located over 1,000 feet from the project site and, therefore, would not be expected to have a significant impact on the project. Health risk impacts from project construction activity affecting nearby sensitive receptors are discussed below.

Project Construction Activity

Project construction is anticipated to begin in summer 2016. The site would be balanced with no substantial export or import of soil or fill. Demolition of existing residences and structures is expected to be 572 cubic yards, which would be hauled off-site. The California Emissions Estimator Model (CalEEMod) Version 2013.2.2 was used to predict annual emissions from construction. CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The proposed project land uses were input into CalEEMod, which included 63 residences entered as "Single Family Housing" and 54 and residential units entered as "Condo/Townhouse" on a 19.45-acre site. A construction build-out scenario was based on the anticipated start date and default equipment list for a project of this type and size. *Attachment 1* includes the CalEEMod input and output values for construction emissions.

Construction activities, particularly during demolition, site preparation and grading would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which

could be an additional source of airborne dust after it dries. The SJVAPCD considers these impacts to be less than significant if Regulation VIII measures are employed to reduce these emissions.

Construction equipment and associated heavy-duty truck traffic generate diesel exhaust, which is a known TAC. Diesel exhaust poses both potential health and nuisance impacts to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to sensitive receptors at nearby residences from construction emissions of DPM.[5] A dispersion model was used to predict the off-site DPM concentrations resulting from project construction so that lifetime cancer risks could be predicted. Figure 1 shows the project site and sensitive receptor locations used in the air quality dispersion modeling analysis where potential health impacts were evaluated.

Construction Emissions

CalEEMod provided emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, truck hauling, and vendor traffic. The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and exhaust emissions from on-road vehicles (haul trucks, vendor trucks, and worker vehicles). Over the entire construction period, the total DPM emissions from off-road construction equipment and from exhaust emissions from on-road vehicles were calculated as of 0.381 tons (762 pounds). The on-road emissions are a result of haul truck travel, worker travel, and vendor deliveries during construction activities. A trip length of 0.5 miles was used to represent vehicle travel while at or near the construction site. For modeling purposes, it was assumed that these emissions from on-road vehicles would occur at the construction site. The project construction emission calculations are provided in *Attachment 1*.

Dispersion Modeling

The US EPA AERMOD dispersion model was used to predict DPM concentrations at existing sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a SJVAPCD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[6] The dispersion modeling utilized an area source to represent emissions from the different construction activities occurring at the construction site. In modeling the exhaust emissions from construction equipment, an emission release height of six meters was used for the area sources. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. An initial vertical plume dimension of 2.8 meters (6 meters/2.15) was also used for the area source. Emissions from vehicle travel around the project site were included in the modeled area sources. Construction emissions were modeled as occurring daily from 7:00 a.m. to 4:00 p.m., when the majority of construction activity involving equipment usage would occur.

[5] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

[6] San Joaquin Valley Air Pollution Control District, Guidance for Air Dispersion Modeling, Draft 01/07 Rev 2.0

The modeling used a five-year data set (2004 - 2008) of hourly meteorological data for Los Banos prepared by the SJVAPCD for use with the AERMOD model. The location for the Los Banos meteorological data is about 20 miles south-southeast of the project site. Average annual DPM concentrations from construction activities during the 2016 – 2017 period were calculated using the model. DPM concentrations were calculated at nearby sensitive receptors using a receptor height of 1.5 meters (4.9 feet). Since the receptors being modeled are close to the emission area, and there is negligible elevation difference between the source and receptors, flat terrain was used for the modeling.

The maximum modeled DPM concentration from construction activities occurred at a residence adjacent to the western project site boundary. The location of this receptor is shown in Figure 1.

Cancer Risk and Hazards

A health risk assessment for exposure to TACs requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and CARB develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[7] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by state law, compared to previous published risk assessment guidelines. The SJVAPCD has recently revised Risk Management Policy to incorporate OEHHA's new guidelines.[8]

This health risk assessment used the recent 2015 OEHHA risk assessment guidelines and SJVAPCD recommended procedures for applying the OEHHA guidelines.[9]

Potential increased cancer risk from inhalation of TACs are calculated based on the average annual TAC concentration, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration over a 70-year lifetime period. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location, at a workplace, or at a school.

The current OEHHA guidance used by SJVAPCD recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, for a

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[7] OEHHA 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February 2015.

[8] San Joaquin Valley Air Pollution Control District,. 2015. *APR – 196Framework for Performing Health Risk Assessments*. June30, 2015.

[9] San Joaquin Valley Air Pollution Control District. 2015. *Final Draft Staff Report, Update to District's Risk Management Policy to Address OEHHA's Revised Risk Assessment Guidance Document*. May 28, 2015

70-year residential exposure period they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the SJVAPCD, 95th percentile breathing rates are used for the third trimester, infant and child exposures, and an 80th percentile breathing rate for adults.

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 10^6

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized in Table 3.

TABLE 3 Health Risk Parameters used for Cancer Risk Calculations

Parameter	*Exposure Type* / *Age Range*	Infant		Child	Adult
		3rd Trimester	0<2	2 < 16	16 - 70
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	745	233
Inhalation Absorption Factor		1	1	1	1
Averaging Time ((years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	54
Exposure Frequency (days/year)		350	350	350	350
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home		0.85	0.85	0.72	0.73

* 95th percentile breathing rates for infants and children and 80th percentile for adults

Based on the maximum average annual modeled DPM concentration, the maximum increased cancer risk was calculated. Due to the short duration of project construction activities, less than two years, infant exposures were assumed in calculating all cancer risks. Because an infant breathing rate is greater than for the 3rd trimester, the contribution to total cancer risk from an

infant exposure is greater than if the initial exposure assumed a 3rd trimester exposure. Additionally, the OEHHA recommended values for the fraction of time spent at home were used. Results of this assessment for an infant and adult exposure are summarized in the Table 4 below. The maximum increased cancer risks for an infant exposure would be above the SJVAPCD significance threshold of a cancer risk of 20 in one million or greater, while the cancer risk for an adult exposure would be below the significance threshold. Since the maximum increased infant cancer risk would be above the significance threshold, this would be considered a *significant impact.*

TABLE 4 Maximum Increased Cancer Risk (per million) for Residents in the vicinity of the Project Construction Area

Exposure Type	Maximum Increased Cancer Risk (per million)
Residential Infant	27.9
Residential Adult	0.5
Significance Threshold	20
Exceed Significance Threshold	***Yes***

Potential non-cancer health effects due to chronic exposure to DPM were also evaluated. Non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The chronic inhalation REL for DPM is 5 $\mu g/m^3$. The maximum modeled annual DPM concentration was 0.104 $\mu g/m^3$, which is much lower than the REL. The maximum computed hazard index based on this DPM concentration is 0.02 which is much lower than the SJVAPCD significance criterion of 1. This would be considered a *less-than-significant impact.*

Attachment 1 includes the emission calculations used for the area source modeling and the cancer risk calculations.

The proposed project would have a *less than significant impact* with respect to cancer risks and health hazards caused by construction activities.

Mitigation Measure for Impact 5: Selection of equipment during construction to minimize emissions. Such equipment selection would include the following:

> All mobile diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days continuously shall meet, at a minimum, US EPA particulate matter emissions standards for Tier 2 engines or equivalent.

Note that the construction contractor could use other measures to minimize construction period DPM emissions to reduce the predicted cancer risk below the thresholds. Such measures may be the use of alternative powered equipment (e.g., LPG-powered lifts), alternative fuels (e.g., biofuels), added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.

Implementation of *Mitigation Measure 5* would reduce on-site diesel exhaust emissions by about 48 percent. With mitigation, the computed maximum increased residential infant cancer risk for construction would be 13.3 in one million. This cancer risk would be below the SJVAPCD threshold of 20 per one million for cancer risk. Therefore, *after implementation of the recommended measures, the project would have a less-than-significant impact with respect to health risk caused by construction activities.*

Figure 1 Project Site, Modeled Sensitive Receptors (Residences), and Location of Maximum Impact

Impact 6: Odors. The project would result in temporary odors during construction. This impact would be ***less-than-significant***.

During construction, the various diesel powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and would dissipate relatively quickly and thus would not likely to be noticeable for extended periods of time much beyond the project's site boundaries. Most if not all diesel odors carried off-site would disperse into the atmosphere before reaching the nearest sensitive receptors, located 2.5 to 3 miles away. The potential for diesel odor impacts is therefore less than significant.

During project operations, the project is not expected to generate any objectionable odors. Therefore, the odor impacts associated with operations would be *less than significant*.

Mitigation Measure for Impact 6: None required.

Impact 7: Consistency with Clean Air Planning Efforts. The project would not conflict with the current clean air plan or obstruct its implementation. This would be a ***less-than-significant impact***.

The GAMAQI does not include methodologies for assessing the effect of a project on consistency with clean air plans developed by the SJVAPCD. Regional clean air plans developed by SJVAPCD rely on local land use designations to develop population and travel projections that are the basis of future emissions inventories. Air pollution control plans are aimed at reducing these projected future emissions. The project land use would be consistent with surrounding land uses, and would not conflict with achievement of the control plans aimed at reducing these projected emissions. Therefore, the project would not conflict with or obstruct implementation of efforts outlined in the region's air pollution control plans to attain or maintain ambient air quality standards. This would be a *less-than-significant impact*.

Mitigation Measure for Impact 7: None required.

Impact 8: Greenhouse Gas Emissions. The project would not meet performance standards for GHG emissions. This would be ***significant impact***.

SJVAPCD's *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects Under CEQA* establishes a requirement that land use development projects demonstrate a 29 percent reduction in GHG emissions from Business-As-Usual (BAU). BAU is defined as operation of the proposed project with emission factors from the 2002-2004 baseline period established by the AB 32 Scoping Plan. Land use projects not achieving the necessary reductions would be considered to have a significant impact.

CalEEMod Modeling

CalEEMod was also used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model. The use of this model for evaluating emissions from land use projects is recommended by SJVAPCD. Unless otherwise noted below, the CalEEMod model defaults for Stanislaus County were used. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport. CalEEMod output worksheets are included in *Attachment 1*.

Land Use Descriptions
The project land use types and size, and trip generation rate were input to CalEEMod. The proposed project land uses included 63 residences entered as "Single Family Housing" and 54 and residential units entered as "Condo/Townhouse" on a 19.45-acre site.

Trip Generation Rates
CalEEMod allows the user to enter specific trip generation rates, which were input to the model using the daily trip numbers provided in the project traffic report. The default trip lengths and trip types specified by CalEEMod were used.

Model Year
The model uses mobile emission factors from CARB's EMFAC2011 model. This model is sensitive to the year selected, since vehicle emissions have and continue to be reduced due to fuel efficiency standards and low carbon fuels. The year 2020 was analyzed to provide a comparison with BAU emissions.

Energy
Energy usage emissions include those from natural gas combustion and electricity usage. CalEEMod model default energy usage inputs were used in the modeling. CalEEMod has a default rate of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. The derived 2020 rate for PG&E was estimated at 289.84 pounds of CO_2 per megawatt of electricity delivered and is based on the California Public Utilities Commission (CPUC) GHG Calculator.[10]

The 2013 Title 24 Building Standards recently became effective July 1, 2014 and are predicted to use 25 percent less energy for lighting, heating, cooling, ventilation, and water heating than the 2008 standards that CalEEMod is based on.[11] Therefore, the CalEEMod run was adjusted to account for the greater energy efficiency.

Other Inputs
Default model assumptions for GHG emissions associated with area sources, solid waste generation and water/wastewater use were applied to the project. No new wood-burning fireplaces are allowed in SJVAPCD, but it was assumed that new residences could include gas-powered fireplaces.

BAU
Business-As-Usual GHG emissions were also computed using CalEEMod. A separate model run for the year 2005 (CalEEMod choices are 2000 or 2005 for that time period) using "historical" energy use data and mobile emission factors. The same land uses as described above were input to the model.

[10] California Public Utilities Commissions GHG Calculator version 3c, October 7, 2010. Available on-line at: http://ethree.com/public_projects/cpuc2.php. Accessed: August 4, 2015.

[11] California Energy Commission, 2012. *2013 Building Energy Efficiency Standards FAQ*. May.

Construction Emissions

GHG emissions associated with construction were computed to be 679 metric tons (MT) of CO_2e, anticipated to occur over the entire construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor SJVAPCD have an adopted Threshold of Significance for construction-related GHG emissions.

Operational Emissions

The CalEEMod model predicted annual emissions associated with operation of the fully-developed site under the proposed project. In 2020, annual emissions resulting from operation of the proposed project are predicted to be 2,219 MT of CO_2e, as shown in Table 5. BAU emissions were calculated to be 2,985 MT of CO_2e, which would represent a 26 percent reduction. These emissions would therefore, exceed the SJVAPCD requirement of a 29 percent reduction above BAU emissions and *this would be considered a significant impact.*

TABLE 5 Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	BAU Emissions	2020 Project Emissions
Area	94	94
Energy Consumption	393	215
Mobile	2,431	1,852
Solid Waste Generation	41	41
Water Usage	26	17
Total	2,985	2,219
Percent Reduction		26 percent
SJVAPCD Requirement		**29 percent**

Mitigation Measure for Impact 8: The SJVAPCD has published measures that land use development projects may implement to mitigate significant GHG impacts and their estimated percentage CO_2e reduction. The proposed project shall implement the following measures:

1. Pedestrian Network – The project provides a pedestrian access network that internally links all uses and connects to existing external streets and pedestrian facilities. Existing facilities are defined as those facilities that are physically constructed and ready for use prior to the first 20 percent of the projects occupancy permits being granted (Estimated reduction: 1);
2. Neighborhood Electric Vehicle Access – Make physical development consistent with requirements for neighborhood electric vehicles (NEV). Current studies show that for most trips, NEVs do not replace gas-fueled vehicles as the primary vehicle. For 0.5 percent reduction, a neighborhood has internal connections only (Estimated reduction: 0.5);
3. Energy Star Roof – Install Energy Star labeled roof materials. Energy Star qualified roof products reflect more of the sun's rays, decreasing the amount of heat transferred into a building (Estimated reduction: 0.5); and

4. Onsite Renewable Energy System – Project provides onsite renewable energy system(s) (Estimated reduction: 1) OR Exceed Title 24 – Project exceeds Title 24 requirements by 20 percent (Estimated reduction: 1).

Implementation of the above measures would ensure that the project meets the 29 percent reduction above BAU required by SJVAPCD.

CUMULATIVE AIR QUALITY IMPACTS

Methodology

The SJVAPCD has developed criteria to determine if a development Project could result in potentially significant regional emissions. According to Section 4.3.2 of the GAMAQI (Thresholds of Significance for Impacts from Project Operations), any proposed project that would individually have a significant air quality impact (i.e., exceed significance thresholds for ROG or NO_x) would also be considered to have a significant cumulative air quality impact. Impacts of local pollutants (CO and TACs) are cumulatively significant when modeling shows that the combined emissions from the project and other existing and planned projects will exceed air quality standards. For local impacts of PM_{10} from unrelated construction projects, the GAMAQI recommends a qualitative approach where construction activities from unrelated projects in the area should be examined to determine if enhanced dust suppression measures are necessary.

Regional Air Pollutants

As discussed under 'Significance Criteria" above, cumulative ozone impacts would be considered significant only if the project-specific emissions exceed the SJVAPCD significance thresholds for ozone precursors ROG or NO_x, or the project is not consistent with the regional clean air plan. As discussed in Impact 3 above, project-specific emissions of ozone precursor pollutants (ROG and NO_x) and PM_{10} were found to be less-than-significant. As discussed under Impact 7 above, the project would be consistent with clean air planning efforts and would not conflict with or obstruct their implementation. Therefore, the project contribution to cumulative regional air quality impacts would be less than significant.

In summary, the cumulative project impacts to localized air quality impacts from criteria pollutants for which the region is in non-attainment would be less-than-significant.

Summary of Cumulative Contribution to Air Quality Impacts

The project would not contribute to local cumulative air quality impacts with respect to any standard or significance criteria. In addition, the project's contribution to cumulative regional air quality impacts would be less than considerable. In conclusion, the project would not have a cumulatively significant impact on air quality.

Cumulative GHG Impacts

Pursuant to CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHGs) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located. The significance thresholds applicable to the project represent the levels at which a project's individual emissions of GHGs would result in a cumulatively considerable contribution to overall GHG emissions in the Bay Area as determined by BAAQMD. This approach recognizes the GHG emissions worldwide are cumulatively significant. Therefore, this GHG analysis considers cumulative impacts as part of the analysis. Therefore, no additional cumulative impacts have been identified and no mitigation measures would be required.

Attachment 1: CalEEMod Worksheets, Construction Emissions, and Risk Modeling Calculations

Prince Road, Newman, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM* (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2016	Construction	0.1830	CON_DPM	366.0	0.11142	1.40E-02	79,257	1.77E-07
2017	Construction	0.1978	CON_DPM	395.6	0.12043	1.52E-02	79,257	1.91E-07
Total		***0.3808***		***762***	***0.2318***	***0.0292***		

* Diesel exhaust PM10 emissions

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM* (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2016	Construction	0.0788	CON_DPM	157.6	0.04798	6.04E-03	79,257	7.63E-08
2017	Construction	0.1038	CON_DPM	207.6	0.06320	7.96E-03	79,257	1.00E-07
Total		***0.1826***		***365***	***0.1112***	***0.0140***		

* Diesel exhaust PM10 emissions

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

Prince Road, Newman, CA - Construction Impacts - Unmitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Off-Site Residential Receptor Locations - 1.5 meters

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 70
Parameter				
CPF =	1.10E+00	1.10E+00	1.1	1.10E+00
DBR* =	361	1090	745	233
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	0.85	0.85	0.72	0.73

* 95th percentile breathing rates for infants/children and 80th percentile for adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information			
							Modeled			
Exposure Year	Exposure Duration (years)	Child Age	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-
1	1	0 - 1	2016	0.0960	10	13.40	2016	0.0960	1	0.25
2	1	1 - 2	2017	0.1036	10	14.46	2017	0.1036	1	0.27
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00
17	1			0.0000	-	-		0.0000	1	0.00
.*	.*		.*	.*	.*	.*	.*	.*	.*	.*
.*	.*		.*	.*	.*	.*	.*	.*	.*	.*
.*	.*		.*	.*	.*	.*	.*	.*	.*	.*
65	1			0.0000	-	-		0.0000	1	0.00
66	1			0.0000	-	-		0.0000	1	0.00
67	1			0.0000	-	-		0.0000	1	0.00
68	1			0.0000	-	-		0.0000	1	0.00
69	1			0.0000	-	-		0.0000	1	0.00
70	1			0.0000	-	-		0.0000	1	0.00
Total Increased Cancer Risk						**27.9**				**0.5**

* Third trimester of pregnancy

Prince Road, Newman, CA - Construction Impacts - Mitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Off-Site Residential Receptor Locations - 1.5 meters

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 70
Parameter				
CPF =	1.10E+00	1.10E+00	1.1	1.10E+00
DBR* =	361	1090	745	233
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	0.85	0.85	0.72	0.73

* 95th percentile breathing rates for infants/children and 80th percentile for adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information			
				DPM Conc (ug/m3)				Modeled DPM Conc (ug/m3)		
Exposure Year	Exposure Duration (years)	Child Age	Year	Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	Year	Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-
1	1	0 - 1	2016	0.0414	10	5.78	2016	0.0414	1	0.11
2	1	1 - 2	2017	0.0542	10	7.57	2017	0.0542	1	0.14
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00
53	1			0.0000	1	0.00		0.0000	1	0.00
54	1			0.0000	1	0.00		0.0000	1	0.00
55	1			0.0000	1	0.00		0.0000	1	0.00
.*	.*		.*	.*	.*	.*	.*	.*	.*	.*
.*	.*		.*	.*	.*	.*	.*	.*	.*	.*
60	1			0.0000	1	0.00		0.0000	1	0.00
61	1			0.0000	1	0.00		0.0000	1	0.00
62	1			0.0000	1	0.00		0.0000	1	0.00
63	1			0.0000	1	0.00		0.0000	1	0.00
64	1			0.0000	1	0.00		0.0000	1	0.00
65	1			0.0000	-	-		0.0000	1	0.00
66	1			0.0000	-	-		0.0000	1	0.00
67	1			0.0000	-	-		0.0000	1	0.00
68	1			0.0000	-	-		0.0000	1	0.00
69	1			0.0000	-	-		0.0000	1	0.00
70	1			0.0000	-	-		0.0000	1	0.00
Total Increased Cancer Risk						**13.3**				**0.2**

* Third trimester of pregnancy

Prince Road Subdivision, Newman - Construction TAC

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	54.00	Dwelling Unit	0.00	54,000.00	154
Single Family Housing	63.00	Dwelling Unit	19.45	113,400.00	180

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	445	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Lot acreage from PD

Construction Phase - Default schedule with Summer 2016 start date

Trips and VMT - Demo: 572 cy @ 16cy/truck = 72 one-way trips. 0.5 mile trip lengths to calculate risk from on- and near-site vehicle travel.

Construction Off-road Equipment Mitigation - Tier 2 engines for equip > 50hp. BMPs for fugitive dust control.

Table Name	Column Name	Default Value	New Value
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	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblLandUse	LotAcreage	3.38	0.00
tblLandUse	LotAcreage	20.45	19.45
tblProjectCharacteristics	CO2IntensityFactor	641.35	445
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50

tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripNumber	0.00	72.00
tblTripsAndVMT	VendorTripLength	6.60	0.50
tblTripsAndVMT	VendorTripLength	6.60	0.50
tblTripsAndVMT	VendorTripLength	6.60	0.50
tblTripsAndVMT	VendorTripLength	6.60	0.50
tblTripsAndVMT	VendorTripLength	6.60	0.50
tblTripsAndVMT	VendorTripLength	6.60	0.50
tblTripsAndVMT	WorkerTripLength	16.80	0.50
tblTripsAndVMT	WorkerTripLength	16.80	0.50
tblTripsAndVMT	WorkerTripLength	16.80	0.50
tblTripsAndVMT	WorkerTripLength	16.80	0.50
tblTripsAndVMT	WorkerTripLength	16.80	0.50
tblTripsAndVMT	WorkerTripLength	16.80	0.50

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					
2016	0.3391	3.1964	2.2623	2.8100e-003	0.2220	0.1830	0.4051	0.1040	0.1705	0.2745	0.0000	259.1324	259.1324	0.0701	0.0000	260.6048
2017	1.9413	2.9938	2.2420	3.1200e-003	3.1700e-003	0.1978	0.2010	8.7000e-004	0.1856	0.1865	0.0000	278.3785	278.3785	0.0680	0.0000	279.8060
Total	**2.2803**	**6.1901**	**4.5043**	**5.9300e-003**	**0.2252**	**0.3808**	**0.6060**	**0.1049**	**0.3561**	**0.4610**	**0.0000**	**537.5109**	**537.5109**	**0.1381**	**0.0000**	**540.4108**

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					
2016	0.1340	2.3860	1.8981	2.8100e-003	0.1008	0.0788	0.1796	0.0238	0.0788	0.1025	0.0000	259.1321	259.1321	0.0701	0.0000	260.6045
2017	1.7605	2.6900	2.2742	3.1200e-003	3.1700e-003	0.1038	0.1069	8.7000e-004	0.1037	0.1046	0.0000	278.3782	278.3782	0.0680	0.0000	279.8057
Total	**1.8945**	**5.0760**	**4.1723**	**5.9300e-003**	**0.1040**	**0.1825**	**0.2865**	**0.0246**	**0.1825**	**0.2071**	**0.0000**	**537.5103**	**537.5103**	**0.1381**	**0.0000**	**540.4101**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**16.92**	**18.00**	**7.37**	**0.00**	**53.84**	**52.07**	**52.73**	**76.53**	**48.75**	**55.08**	**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	6/1/2016	6/28/2016	5	20	
2	Site Preparation	Site Preparation	6/29/2016	7/12/2016	5	10	
3	Grading	Grading	7/13/2016	8/23/2016	5	30	
4	Building Construction	Building Construction	8/24/2016	10/17/2017	5	300	
5	Paving	Paving	10/18/2017	11/14/2017	5	20	
6	Architectural Coating	Architectural Coating	11/15/2017	12/12/2017	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 338,985; Residential Outdoor: 112,995; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating

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	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
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	6	15.00	0.00	72.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Building Construction	9	62.00	13.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT

Architectural Coating	1	12.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2016

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0429	0.4566	0.3503	4.0000e-004		0.0229	0.0229		0.0214	0.0214	0.0000	37.0974	37.0974	0.0101	0.0000	37.3092
Total	**0.0429**	**0.4566**	**0.3503**	**4.0000e-004**	**0.0000**	**0.0229**	**0.0229**	**0.0000**	**0.0214**	**0.0214**	**0.0000**	**37.0974**	**37.0974**	**0.0101**	**0.0000**	**37.3092**

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	3.4000e-004	9.5000e-004	6.1300e-003	0.0000	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	1.0000e-005	1.0000e-005	0.0000	0.1171	0.1171	0.0000	0.0000	0.1171

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	4.4000e-004	1.1000e-004	1.4900e-003	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0793	0.0793	1.0000e-005	0.0000	0.0795
Total	**7.8000e-004**	**1.0600e-003**	**7.6200e-003**	**0.0000**	**8.0000e-005**	**1.0000e-005**	**8.0000e-005**	**2.0000e-005**	**1.0000e-005**	**3.0000e-005**	**0.0000**	**0.1964**	**0.1964**	**1.0000e-005**	**0.0000**	**0.1966**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.3347	0.2527	4.0000e-004		9.3400e-003	9.3400e-003		9.3400e-003	9.3400e-003	0.0000	37.0973	37.0973	0.0101	0.0000	37.3092
Total	**0.0129**	**0.3347**	**0.2527**	**4.0000e-004**	**0.0000**	**9.3400e-003**	**9.3400e-003**	**0.0000**	**9.3400e-003**	**9.3400e-003**	**0.0000**	**37.0973**	**37.0973**	**0.0101**	**0.0000**	**37.3092**

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	3.4000e-004	9.5000e-004	6.1300e-003	0.0000	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	1.0000e-005	1.0000e-005	0.0000	0.1171	0.1171	0.0000	0.0000	0.1171
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	4.4000e-004	1.1000e-004	1.4900e-003	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0793	0.0793	1.0000e-005	0.0000	0.0795
Total	**7.8000e-004**	**1.0600e-003**	**7.6200e-003**	**0.0000**	**8.0000e-005**	**1.0000e-005**	**8.0000e-005**	**2.0000e-005**	**1.0000e-005**	**3.0000e-005**	**0.0000**	**0.1964**	**0.1964**	**1.0000e-005**	**0.0000**	**0.1966**

3.3 Site Preparation - 2016

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0254	0.2732	0.2055	2.0000e-004		0.0147	0.0147		0.0135	0.0135	0.0000	18.4386	18.4386	5.5600e-003	0.0000	18.5554
Total	**0.0254**	**0.2732**	**0.2055**	**2.0000e-004**	**0.0903**	**0.0147**	**0.1050**	**0.0497**	**0.0135**	**0.0632**	**0.0000**	**18.4386**	**18.4386**	**5.5600e-003**	**0.0000**	**18.5554**

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	2.6000e-004	7.0000e-005	8.9000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0476	0.0476	0.0000	0.0000	0.0477
Total	**2.6000e-004**	**7.0000e-005**	**8.9000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0476**	**0.0476**	**0.0000**	**0.0000**	**0.0477**

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					0.0407	0.0000	0.0407	0.0112	0.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1500e-003	0.1721	0.1170	2.0000e-004		4.8100e-003	4.8100e-003		4.8100e-003	4.8100e-003	0.0000	18.4385	18.4385	5.5600e-003	0.0000	18.5553
Total	**6.1500e-003**	**0.1721**	**0.1170**	**2.0000e-004**	**0.0407**	**4.8100e-003**	**0.0455**	**0.0112**	**4.8100e-003**	**0.0160**	**0.0000**	**18.4385**	**18.4385**	**5.5600e-003**	**0.0000**	**18.5553**

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	2.6000e-004	7.0000e-005	8.9000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0476	0.0476	0.0000	0.0000	0.0477
Total	**2.6000e-004**	**7.0000e-005**	**8.9000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0476**	**0.0476**	**0.0000**	**0.0000**	**0.0477**

3.4 Grading - 2016

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0972	1.1222	0.7371	9.3000e-004		0.0538	0.0538		0.0495	0.0495	0.0000	87.2936	87.2936	0.0263	0.0000	87.8465

Total	**0.0972**	**1.1222**	**0.7371**	**9.3000e-004**	**0.1301**	**0.0538**	**0.1839**	**0.0540**	**0.0495**	**0.1034**	**0.0000**	**87.2936**	**87.2936**	**0.0263**	**0.0000**	**87.8465**

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	8.7000e-004	2.2000e-004	2.9800e-003	0.0000	1.1000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1586	0.1586	2.0000e-005	0.0000	0.1590
Total	**8.7000e-004**	**2.2000e-004**	**2.9800e-003**	**0.0000**	**1.1000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1586**	**0.1586**	**2.0000e-005**	**0.0000**	**0.1590**

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					0.0586	0.0000	0.0586	0.0121	0.0000	0.0121	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0284	0.7642	0.5692	9.3000e-004		0.0207	0.0207		0.0207	0.0207	0.0000	87.2935	87.2935	0.0263	0.0000	87.8464
Total	**0.0284**	**0.7642**	**0.5692**	**9.3000e-004**	**0.0586**	**0.0207**	**0.0792**	**0.0121**	**0.0207**	**0.0328**	**0.0000**	**87.2935**	**87.2935**	**0.0263**	**0.0000**	**87.8464**

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	8.7000e-004	2.2000e-004	2.9800e-003	0.0000	1.1000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1586	0.1586	2.0000e-005	0.0000	0.1590
Total	**8.7000e-004**	**2.2000e-004**	**2.9800e-003**	**0.0000**	**1.1000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1586**	**0.1586**	**2.0000e-005**	**0.0000**	**0.1590**

3.5 Building Construction - 2016

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	0.1584	1.3255	0.8606	1.2500e-003		0.0915	0.0915		0.0860	0.0860	0.0000	112.6014	112.6014	0.0279	0.0000	113.1879
Total	**0.1584**	**1.3255**	**0.8606**	**1.2500e-003**		**0.0915**	**0.0915**		**0.0860**	**0.0860**	**0.0000**	**112.6014**	**112.6014**	**0.0279**	**0.0000**	**113.1879**

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	4.8900e-003	0.0154	0.0688	2.0000e-005	2.8000e-004	1.3000e-004	4.1000e-004	8.0000e-005	1.2000e-004	2.0000e-004	0.0000	1.7745	1.7745	3.0000e-005	0.0000	1.7751
Worker	8.4100e-003	2.1300e-003	0.0286	2.0000e-005	1.0900e-003	3.0000e-005	1.1300e-003	2.9000e-004	3.0000e-005	3.2000e-004	0.0000	1.5244	1.5244	1.5000e-004	0.0000	1.5275
Total	**0.0133**	**0.0175**	**0.0974**	**4.0000e-005**	**1.3700e-003**	**1.6000e-004**	**1.5400e-003**	**3.7000e-004**	**1.5000e-004**	**5.2000e-004**	**0.0000**	**3.2989**	**3.2989**	**1.8000e-004**	**0.0000**	**3.3026**

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	0.0714	1.0962	0.8504	1.2500e-003		0.0438	0.0438		0.0438	0.0438	0.0000	112.6013	112.6013	0.0279	0.0000	113.1878
Total	**0.0714**	**1.0962**	**0.8504**	**1.2500e-003**		**0.0438**	**0.0438**		**0.0438**	**0.0438**	**0.0000**	**112.6013**	**112.6013**	**0.0279**	**0.0000**	**113.1878**

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	4.8900e-003	0.0154	0.0688	2.0000e-005	2.8000e-004	1.3000e-004	4.1000e-004	8.0000e-005	1.2000e-004	2.0000e-004	0.0000	1.7745	1.7745	3.0000e-005	0.0000	1.7751
Worker	8.4100e-003	2.1300e-003	0.0286	2.0000e-005	1.0900e-003	3.0000e-005	1.1300e-003	2.9000e-004	3.0000e-005	3.2000e-004	0.0000	1.5244	1.5244	1.5000e-004	0.0000	1.5275
Total	**0.0133**	**0.0175**	**0.0974**	**4.0000e-005**	**1.3700e-003**	**1.6000e-004**	**1.5400e-003**	**3.7000e-004**	**1.5000e-004**	**5.2000e-004**	**0.0000**	**3.2989**	**3.2989**	**1.8000e-004**	**0.0000**	**3.3026**

3.5 Building Construction - 2017

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	0.3211	2.7330	1.8764	2.7700e-003		0.1844	0.1844		0.1732	0.1732	0.0000	247.8609	247.8609	0.0610	0.0000	249.1419
Total	**0.3211**	**2.7330**	**1.8764**	**2.7700e-003**		**0.1844**	**0.1844**		**0.1732**	**0.1732**	**0.0000**	**247.8609**	**247.8609**	**0.0610**	**0.0000**	**249.1419**

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	9.0500e-003	0.0316	0.1411	5.0000e-005	6.3000e-004	2.3000e-004	8.6000e-004	1.8000e-004	2.1000e-004	4.0000e-004	0.0000	3.8795	3.8795	6.0000e-005	0.0000	3.8808
Worker	0.0168	4.1700e-003	0.0563	5.0000e-005	2.4300e-003	7.0000e-005	2.5100e-003	6.5000e-004	7.0000e-005	7.2000e-004	0.0000	3.2545	3.2545	2.9000e-004	0.0000	3.2606
Total	**0.0259**	**0.0358**	**0.1973**	**1.0000e-004**	**3.0600e-003**	**3.0000e-004**	**3.3700e-003**	**8.3000e-004**	**2.8000e-004**	**1.1200e-003**	**0.0000**	**7.1340**	**7.1340**	**3.5000e-004**	**0.0000**	**7.1414**

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	0.1525	2.4335	1.8870	2.7700e-003		0.0960	0.0960		0.0960	0.0960	0.0000	247.8606	247.8606	0.0610	0.0000	249.1416
Total	**0.1525**	**2.4335**	**1.8870**	**2.7700e-003**		**0.0960**	**0.0960**		**0.0960**	**0.0960**	**0.0000**	**247.8606**	**247.8606**	**0.0610**	**0.0000**	**249.1416**

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	9.0500e-003	0.0316	0.1411	5.0000e-005	6.3000e-004	2.3000e-004	8.6000e-004	1.8000e-004	2.1000e-004	4.0000e-004	0.0000	3.8795	3.8795	6.0000e-005	0.0000	3.8808
Worker	0.0168	4.1700e-003	0.0563	5.0000e-005	2.4300e-003	7.0000e-005	2.5100e-003	6.5000e-004	7.0000e-005	7.2000e-004	0.0000	3.2545	3.2545	2.9000e-004	0.0000	3.2606
Total	**0.0259**	**0.0358**	**0.1973**	**1.0000e-004**	**3.0600e-003**	**3.0000e-004**	**3.3700e-003**	**8.3000e-004**	**2.8000e-004**	**1.1200e-003**	**0.0000**	**7.1340**	**7.1340**	**3.5000e-004**	**0.0000**	**7.1414**

3.6 Paving - 2017

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	0.0191	0.2030	0.1473	2.2000e-004		0.0114	0.0114		0.0105	0.0105	0.0000	20.6934	20.6934	6.3400e-003	0.0000	20.8266

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0191**	**0.2030**	**0.1473**	**2.2000e-004**		**0.0114**	**0.0114**		**0.0105**	**0.0105**	**0.0000**	**20.6934**	**20.6934**	**6.3400e-003**	**0.0000**	**20.8266**

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	3.9000e-004	1.0000e-004	1.3200e-003	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0761	0.0761	1.0000e-005	0.0000	0.0762
Total	**3.9000e-004**	**1.0000e-004**	**1.3200e-003**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0761**	**0.0761**	**1.0000e-005**	**0.0000**	**0.0762**

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	9.1200e-003	0.1970	0.1693	2.2000e-004		6.5400e-003	6.5400e-003		6.5400e-003	6.5400e-003	0.0000	20.6934	20.6934	6.3400e-003	0.0000	20.8265
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.1200e-003**	**0.1970**	**0.1693**	**2.2000e-004**		**6.5400e-003**	**6.5400e-003**		**6.5400e-003**	**6.5400e-003**	**0.0000**	**20.6934**	**20.6934**	**6.3400e-003**	**0.0000**	**20.8265**

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	3.9000e-004	1.0000e-004	1.3200e-003	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0761	0.0761	1.0000e-005	0.0000	0.0762
Total	**3.9000e-004**	**1.0000e-004**	**1.3200e-003**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0761**	**0.0761**	**1.0000e-005**	**0.0000**	**0.0762**

3.7 Architectural Coating - 2017

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	1.5712					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3200e-003	0.0219	0.0187	3.0000e-005		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	2.5533	2.5533	2.7000e-004	0.0000	2.5589
Total	**1.5745**	**0.0219**	**0.0187**	**3.0000e-005**		**1.7300e-003**	**1.7300e-003**		**1.7300e-003**	**1.7300e-003**	**0.0000**	**2.5533**	**2.5533**	**2.7000e-004**	**0.0000**	**2.5589**

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	3.1000e-004	8.0000e-005	1.0500e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0609	0.0609	1.0000e-005	0.0000	0.0610
Total	**3.1000e-004**	**8.0000e-005**	**1.0500e-003**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0609**	**0.0609**	**1.0000e-005**	**0.0000**	**0.0610**

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	1.5712					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1400e-003	0.0235	0.0183	3.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	2.5533	2.5533	2.7000e-004	0.0000	2.5589
Total	**1.5723**	**0.0235**	**0.0183**	**3.0000e-005**		**9.5000e-004**	**9.5000e-004**		**9.5000e-004**	**9.5000e-004**	**0.0000**	**2.5533**	**2.5533**	**2.7000e-004**	**0.0000**	**2.5589**

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	3.1000e-004	8.0000e-005	1.0500e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0609	0.0609	1.0000e-005	0.0000	0.0610
Total	**3.1000e-004**	**8.0000e-005**	**1.0500e-003**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0609**	**0.0609**	**1.0000e-005**	**0.0000**	**0.0610**

Prince Road Subdivision, Newman - BAU

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	54.00	Dwelling Unit	0.00	54,000.00	154
Single Family Housing	63.00	Dwelling Unit	19.45	113,400.00	180

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Lot acreage from PD

Vehicle Trips - Trip rates from project traffic report

Woodstoves - No woodstoves, possible gas-powered fireplaces.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	150
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	150
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	150
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00

tblFireplaces	NumberGas	29.70	54.00
tblFireplaces	NumberGas	34.65	63.00
tblFireplaces	NumberNoFireplace	5.40	0.00
tblFireplaces	NumberNoFireplace	28.35	0.00
tblFireplaces	NumberWood	18.90	0.00
tblLandUse	LotAcreage	3.38	0.00
tblLandUse	LotAcreage	20.45	19.45
tblProjectCharacteristics	OperationalYear	2014	2005
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	72.00
tblVehicleTrips	ST_TR	7.16	7.59
tblVehicleTrips	ST_TR	10.08	11.49
tblVehicleTrips	SU_TR	6.07	6.43
tblVehicleTrips	SU_TR	8.77	10.00
tblVehicleTrips	WD_TR	6.59	6.97
tblVehicleTrips	WD_TR	9.57	10.90
tblWoodstoves	NumberCatalytic	19.45	0.00
tblWoodstoves	NumberNoncatalytic	19.45	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

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	0.9686	0.0137	1.0080	5.0000e-005		0.0107	0.0107		0.0106	0.0106	0.0000	93.5741	93.5741	4.0400e-003	1.6900e-003	94.1827
Energy	0.0172	0.1469	0.0625	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	391.1769	391.1769	0.0133	5.1900e-003	393.0633
Mobile	2.8053	11.7494	30.6505	0.0925	1.4208	0.3839	1.8047	0.4191	0.3839	0.8030	0.0000	2,426.6836	2,426.6836	0.2141	0.0000	2,431.1806
Waste						0.0000	0.0000		0.0000	0.0000	18.1961	0.0000	18.1961	1.0754	0.0000	40.7787
Water						0.0000	0.0000		0.0000	0.0000	2.4184	16.8928	19.3112	0.2492	6.0200e-003	26.4108
Total	**3.7910**	**11.9100**	**31.7211**	**0.0935**	**1.4208**	**0.4065**	**1.8272**	**0.4191**	**0.4064**	**0.8255**	**20.6145**	**2,928.3274**	**2,948.9419**	**1.5560**	**0.0129**	**2,985.6160**

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					
Unmitigated	2.8053	11.7494	30.6505	0.0925	1.4208	0.3839	1.8047	0.4191	0.3839	0.8030	0.0000	2,426.6836	2,426.6836	0.2141	0.0000	2,431.1806

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	376.38	409.86	347.22	1,473,619	1,473,619
Single Family Housing	686.70	723.87	630.00	2,673,291	2,673,291
Total	1,063.08	1,133.73	977.22	4,146,910	4,146,910

4.3 Trip Type Information

	Miles	Trip %	Trip Purpose %

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	16.80	7.10	7.90	48.40	13.90	37.70	86	11	3
Single Family Housing	16.80	7.10	7.90	48.40	13.90	37.70	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.405180	0.118575	0.203603	0.124404	0.030048	0.009386	0.018681	0.073367	0.001357	0.000965	0.009739	0.001230	0.003465

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: Y

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	tons/yr										MT/yr					
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	221.0123	221.0123	9.9900e-003	2.0700e-003	221.8631
NaturalGas Unmitigated	0.0172	0.1469	0.0625	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	170.1646	170.1646	3.2600e-003	3.1200e-003	171.2002

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					
Condo/Townhouse	1.0371e+006	5.5900e-003	0.0478	0.0203	3.1000e-004		3.8600e-003	3.8600e-003		3.8600e-003	3.8600e-003	0.0000	55.3439	55.3439	1.0600e-003	1.0100e-003	55.6807

Single Family Housing	2.15166e+006	0.0116	0.0992	0.0422	6.3000e-004		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.0000	114.8208	114.8208	2.2000e-003	2.1100e-003	115.5196
Total		**0.0172**	**0.1469**	**0.0625**	**9.4000e-004**		**0.0119**	**0.0119**		**0.0119**	**0.0119**	**0.0000**	**170.1646**	**170.1646**	**3.2600e-003**	**3.1200e-003**	**171.2002**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	259133	75.3848	3.4100e-003	7.1000e-004	75.6750
Single Family Housing	500590	145.6275	6.5800e-003	1.3600e-003	146.1881
Total		**221.0123**	**9.9900e-003**	**2.0700e-003**	**221.8631**

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	tons/yr										MT/yr					
Unmitigated	0.9686	0.0137	1.0080	5.0000e-005		0.0107	0.0107		0.0106	0.0106	0.0000	93.5741	93.5741	4.0400e-003	1.6900e-003	94.1827

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	0.2619					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6538					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.3100e-003	0.0000	5.1000e-004	0.0000		6.4300e-003	6.4300e-003		6.3700e-003	6.3700e-003	0.0000	92.1550	92.1550	1.7700e-003	1.6900e-003	92.7159
Landscaping	0.0436	0.0137	1.0075	5.0000e-005		4.2500e-003	4.2500e-003		4.2500e-003	4.2500e-003	0.0000	1.4191	1.4191	2.2700e-003	0.0000	1.4668
Total	**0.9686**	**0.0137**	**1.0080**	**5.0000e-005**		**0.0107**	**0.0107**		**0.0106**	**0.0106**	**0.0000**	**93.5741**	**93.5741**	**4.0400e-003**	**1.6900e-003**	**94.1827**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	19.3112	0.2492	6.0200e-003	26.4108

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	3.51832 / 2.21807	8.9129	0.1150	2.7800e-003	12.1896
Single Family Housing	4.1047 / 2.58775	10.3984	0.1342	3.2400e-003	14.2212
Total		**19.3112**	**0.2492**	**6.0200e-003**	**26.4108**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	18.1961	1.0754	0.0000	40.7787

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Condo/Townhouse	24.84	5.0423	0.2980	0.0000	11.3001
Single Family Housing	64.8	13.1538	0.7774	0.0000	29.4786
Total		**18.1961**	**1.0754**	**0.0000**	**40.7787**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Prince Road Subdivision, Newman

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	54.00	Dwelling Unit	0.00	54,000.00	154
Single Family Housing	63.00	Dwelling Unit	19.45	113,400.00	180

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	289.84	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Using PG&E 2020 rate per CPUC GHG Calculator

Land Use - Lot acreage from PD

Construction Phase - Default schedule with Summer 2016 start date

Trips and VMT - Demo: 572 cy @ 16cy/truck = 72 one-way trips.

Vehicle Trips - Trip rates from project traffic report

Energy Use - Title 24 2013 standards 25% more energy-efficient than 2008 standards.

Woodstoves - No woodstoves, possible gas-powered fireplaces

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	1,001.10	750.83
tblEnergyUse	LightingElect	1,608.84	1,206.63

tblEnergyUse	T24E	539.47	404.60
tblEnergyUse	T24E	960.89	720.67
tblEnergyUse	T24NG	15,116.82	11,337.62
tblEnergyUse	T24NG	25,333.33	19,000.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	29.70	54.00
tblFireplaces	NumberGas	34.65	63.00
tblFireplaces	NumberNoFireplace	5.40	0.00
tblFireplaces	NumberNoFireplace	28.35	0.00
tblFireplaces	NumberWood	18.90	0.00
tblLandUse	LotAcreage	3.38	0.00
tblLandUse	LotAcreage	20.45	19.45
tblProjectCharacteristics	CO2IntensityFactor	641.35	289.84
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	72.00
tblVehicleTrips	ST_TR	7.16	7.59
tblVehicleTrips	ST_TR	10.08	11.49
tblVehicleTrips	SU_TR	6.07	6.43
tblVehicleTrips	SU_TR	8.77	10.00
tblVehicleTrips	WD_TR	6.59	6.97
tblVehicleTrips	WD_TR	9.57	10.90
tblWoodstoves	NumberCatalytic	19.45	0.00
tblWoodstoves	NumberNoncatalytic	19.45	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					
2016	0.3464	3.2648	2.4631	3.4400e-003	0.2671	0.1843	0.4514	0.1161	0.1716	0.2877	0.0000	307.5845	307.5845	0.0720	0.0000	309.0961
2017	1.9531	3.1051	2.5841	4.3200e-003	0.0910	0.1999	0.2909	0.0243	0.1876	0.2119	0.0000	367.9440	367.9440	0.0713	0.0000	369.4406
Total	**2.2995**	**6.3699**	**5.0472**	**7.7600e-003**	**0.3581**	**0.3842**	**0.7423**	**0.1404**	**0.3592**	**0.4996**	**0.0000**	**675.5285**	**675.5285**	**0.1433**	**0.0000**	**678.5368**

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	0.8468	0.0101	0.8721	5.0000e-005		0.0112	0.0112		0.0112	0.0112	0.0000	93.5741	93.5741	3.1500e-003	1.6900e-003	94.1640
Energy	0.0127	0.1081	0.0460	6.9000e-004		8.7400e-003	8.7400e-003		8.7400e-003	8.7400e-003	0.0000	213.7887	213.7887	0.0113	4.1300e-003	215.3051
Mobile	0.7584	2.6395	8.8402	0.0258	1.5668	0.0444	1.6112	0.4202	0.0409	0.4611	0.0000	1,850.5603	1,850.5603	0.0590	0.0000	1,851.8001
Waste						0.0000	0.0000		0.0000	0.0000	18.1961	0.0000	18.1961	1.0754	0.0000	40.7787
Water						0.0000	0.0000		0.0000	0.0000	2.4184	7.6342	10.0527	0.2492	6.0200e-003	17.1522
Total	**1.6178**	**2.7577**	**9.7584**	**0.0266**	**1.5668**	**0.0644**	**1.6312**	**0.4202**	**0.0608**	**0.4810**	**20.6145**	**2,165.5573**	**2,186.1718**	**1.3980**	**0.0118**	**2,219.2001**

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	6/1/2016	6/28/2016	5	20	
2	Site Preparation	Site Preparation	6/29/2016	7/12/2016	5	10	
3	Grading	Grading	7/13/2016	8/23/2016	5	30	
4	Building Construction	Building Construction	8/24/2016	10/17/2017	5	300	
5	Paving	Paving	10/18/2017	11/14/2017	5	20	
6	Architectural Coating	Architectural Coating	11/15/2017	12/12/2017	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 338,985; Residential Outdoor: 112,995; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating

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	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37

Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
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	6	15.00	0.00	72.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	62.00	13.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

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	0.0429	0.4566	0.3503	4.0000e-004		0.0229	0.0229		0.0214	0.0214	0.0000	37.0974	37.0974	0.0101	0.0000	37.3092
Total	**0.0429**	**0.4566**	**0.3503**	**4.0000e-004**		**0.0229**	**0.0229**		**0.0214**	**0.0214**	**0.0000**	**37.0974**	**37.0974**	**0.0101**	**0.0000**	**37.3092**

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	7.3000e-004	9.5700e-003	8.2400e-003	3.0000e-005	6.2000e-004	1.5000e-004	7.6000e-004	1.7000e-004	1.4000e-004	3.1000e-004	0.0000	2.4542	2.4542	2.0000e-005	0.0000	2.4546
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	9.7000e-004	9.7000e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8800e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.6570	1.6570	9.0000e-005	0.0000	1.6588
Total	**1.3900e-003**	**0.0105**	**0.0179**	**5.0000e-005**	**2.4800e-003**	**1.6000e-004**	**2.6400e-003**	**6.7000e-004**	**1.5000e-004**	**8.2000e-004**	**0.0000**	**4.1111**	**4.1111**	**1.1000e-004**	**0.0000**	**4.1133**

3.3 Site Preparation - 2016

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0254	0.2732	0.2055	2.0000e-004		0.0147	0.0147		0.0135	0.0135	0.0000	18.4386	18.4386	5.5600e-003	0.0000	18.5554
Total	**0.0254**	**0.2732**	**0.2055**	**2.0000e-004**	**0.0903**	**0.0147**	**0.1050**	**0.0497**	**0.0135**	**0.0632**	**0.0000**	**18.4386**	**18.4386**	**5.5600e-003**	**0.0000**	**18.5554**

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	3.9000e-004	5.8000e-004	5.8200e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9942	0.9942	5.0000e-005	0.0000	0.9953
Total	**3.9000e-004**	**5.8000e-004**	**5.8200e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1300e-003**	**3.0000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9942**	**0.9942**	**5.0000e-005**	**0.0000**	**0.9953**

3.4 Grading - 2016

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0972	1.1222	0.7371	9.3000e-004		0.0538	0.0538		0.0495	0.0495	0.0000	87.2936	87.2936	0.0263	0.0000	87.8465
Total	**0.0972**	**1.1222**	**0.7371**	**9.3000e-004**	**0.1301**	**0.0538**	**0.1839**	**0.0540**	**0.0495**	**0.1034**	**0.0000**	**87.2936**	**87.2936**	**0.0263**	**0.0000**	**87.8465**

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	1.3100e-003	1.9500e-003	0.0194	4.0000e-005	3.7300e-003	3.0000e-005	3.7600e-003	9.9000e-004	3.0000e-005	1.0200e-003	0.0000	3.3139	3.3139	1.7000e-004	0.0000	3.3175
Total	**1.3100e-003**	**1.9500e-003**	**0.0194**	**4.0000e-005**	**3.7300e-003**	**3.0000e-005**	**3.7600e-003**	**9.9000e-004**	**3.0000e-005**	**1.0200e-003**	**0.0000**	**3.3139**	**3.3139**	**1.7000e-004**	**0.0000**	**3.3175**

3.5 Building Construction - 2016

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	0.1584	1.3255	0.8606	1.2500e-003		0.0915	0.0915		0.0860	0.0860	0.0000	112.6014	112.6014	0.0279	0.0000	113.1879
Total	**0.1584**	**1.3255**	**0.8606**	**1.2500e-003**		**0.0915**	**0.0915**		**0.0860**	**0.0860**	**0.0000**	**112.6014**	**112.6014**	**0.0279**	**0.0000**	**113.1879**

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	6.8900e-003	0.0555	0.0800	1.3000e-004	3.5600e-003	9.6000e-004	4.5200e-003	1.0200e-003	8.8000e-004	1.9000e-003	0.0000	11.8876	11.8876	1.1000e-004	0.0000	11.8899
Worker	0.0126	0.0187	0.1865	4.3000e-004	0.0358	2.7000e-004	0.0361	9.5200e-003	2.5000e-004	9.7700e-003	0.0000	31.8468	31.8468	1.6400e-003	0.0000	31.8812
Total	**0.0195**	**0.0743**	**0.2665**	**5.6000e-004**	**0.0394**	**1.2300e-003**	**0.0406**	**0.0105**	**1.1300e-003**	**0.0117**	**0.0000**	**43.7344**	**43.7344**	**1.7500e-003**	**0.0000**	**43.7711**

3.5 Building Construction - 2017

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	0.3211	2.7330	1.8764	2.7700e-003		0.1844	0.1844		0.1732	0.1732	0.0000	247.8609	247.8609	0.0610	0.0000	249.1419
Total	**0.3211**	**2.7330**	**1.8764**	**2.7700e-003**		**0.1844**	**0.1844**		**0.1732**	**0.1732**	**0.0000**	**247.8609**	**247.8609**	**0.0610**	**0.0000**	**249.1419**

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	0.0131	0.1091	0.1632	2.9000e-004	7.9200e-003	1.7900e-003	9.7100e-003	2.2700e-003	1.6500e-003	3.9200e-003	0.0000	26.0068	26.0068	2.2000e-004	0.0000	26.0114
Worker	0.0243	0.0367	0.3633	9.6000e-004	0.0797	5.8000e-004	0.0803	0.0212	5.4000e-004	0.0217	0.0000	67.9697	67.9697	3.3000e-003	0.0000	68.0390
Total	**0.0374**	**0.1458**	**0.5265**	**1.2500e-003**	**0.0876**	**2.3700e-003**	**0.0900**	**0.0235**	**2.1900e-003**	**0.0256**	**0.0000**	**93.9765**	**93.9765**	**3.5200e-003**	**0.0000**	**94.0504**

3.6 Paving - 2017

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	0.0191	0.2030	0.1473	2.2000e-004		0.0114	0.0114		0.0105	0.0105	0.0000	20.6934	20.6934	6.3400e-003	0.0000	20.8266
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0191**	**0.2030**	**0.1473**	**2.2000e-004**		**0.0114**	**0.0114**		**0.0105**	**0.0105**	**0.0000**	**20.6934**	**20.6934**	**6.3400e-003**	**0.0000**	**20.8266**

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	5.7000e-004	8.6000e-004	8.4900e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8800e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.5888	1.5888	8.0000e-005	0.0000	1.5904
Total	**5.7000e-004**	**8.6000e-004**	**8.4900e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8800e-003**	**5.0000e-004**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**1.5888**	**1.5888**	**8.0000e-005**	**0.0000**	**1.5904**

3.7 Architectural Coating - 2017

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	1.5712					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3200e-003	0.0219	0.0187	3.0000e-005		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	2.5533	2.5533	2.7000e-004	0.0000	2.5589
Total	**1.5745**	**0.0219**	**0.0187**	**3.0000e-005**		**1.7300e-003**	**1.7300e-003**		**1.7300e-003**	**1.7300e-003**	**0.0000**	**2.5533**	**2.5533**	**2.7000e-004**	**0.0000**	**2.5589**

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	4.5000e-004	6.9000e-004	6.7900e-003	2.0000e-005	1.4900e-003	1.0000e-005	1.5000e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.2711	1.2711	6.0000e-005	0.0000	1.2724
Total	**4.5000e-004**	**6.9000e-004**	**6.7900e-003**	**2.0000e-005**	**1.4900e-003**	**1.0000e-005**	**1.5000e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.2711**	**1.2711**	**6.0000e-005**	**0.0000**	**1.2724**

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					

Unmitigated	0.7584	2.6395	8.8402	0.0258	1.5668	0.0444	1.6112	0.4202	0.0409	0.4611	0.0000	1,850.5603	1,850.5603	0.0590	0.0000	1,851.8001

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	376.38	409.86	347.22	1,473,619	1,473,619
Single Family Housing	686.70	723.87	630.00	2,673,291	2,673,291
Total	1,063.08	1,133.73	977.22	4,146,910	4,146,910

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
Condo/Townhouse	16.80	7.10	7.90	48.40	13.90	37.70	86	11	3
Single Family Housing	16.80	7.10	7.90	48.40	13.90	37.70	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.433680	0.065260	0.158637	0.181665	0.054651	0.007865	0.020001	0.065613	0.001775	0.001152	0.006264	0.000644	0.002793

5.0 Energy Detail

4.4 Fleet Mix

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	tons/yr										MT/yr					
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	88.5484	88.5484	8.8600e-003	1.8300e-003	89.3027

NaturalGas Unmitigated	0.0127	0.1081	0.0460	6.9000e-004		8.7400e-003	8.7400e-003		8.7400e-003	8.7400e-003	0.0000	125.2402	125.2402	2.4000e-003	2.3000e-003	126.0024

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					
Condo/Townhouse	771585	4.1600e-003	0.0356	0.0151	2.3000e-004		2.8700e-003	2.8700e-003		2.8700e-003	2.8700e-003	0.0000	41.1747	41.1747	7.9000e-004	7.5000e-004	41.4253
Single Family Housing	1.57533e+006	8.4900e-003	0.0726	0.0309	4.6000e-004		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	84.0655	84.0655	1.6100e-003	1.5400e-003	84.5771
Total		**0.0127**	**0.1081**	**0.0460**	**6.9000e-004**		**8.7400e-003**	**8.7400e-003**		**8.7400e-003**	**8.7400e-003**	**0.0000**	**125.2402**	**125.2402**	**2.4000e-003**	**2.2900e-003**	**126.0024**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	231189	30.3943	3.0400e-003	6.3000e-004	30.6532
Single Family Housing	442341	58.1542	5.8200e-003	1.2000e-003	58.6496
Total		**88.5484**	**8.8600e-003**	**1.8300e-003**	**89.3027**

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	tons/yr										MT/yr					
Unmitigated	0.8468	0.0101	0.8721	5.0000e-005		0.0112	0.0112		0.0112	0.0112	0.0000	93.5741	93.5741	3.1500e-003	1.6900e-003	94.1640

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	0.1571					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6538					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.3100e-003	0.0000	5.1000e-004	0.0000		6.4300e-003	6.4300e-003		6.3700e-003	6.3700e-003	0.0000	92.1550	92.1550	1.7700e-003	1.6900e-003	92.7159
Landscaping	0.0265	0.0101	0.8716	5.0000e-005		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	1.4191	1.4191	1.3800e-003	0.0000	1.4481
Total	**0.8468**	**0.0101**	**0.8721**	**5.0000e-005**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**93.5741**	**93.5741**	**3.1500e-003**	**1.6900e-003**	**94.1640**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	10.0527	0.2492	6.0200e-003	17.1522

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	3.51832 / 2.21807	4.6397	0.1150	2.7800e-003	7.9164
Single Family Housing	4.1047 / 2.58775	5.4130	0.1342	3.2400e-003	9.2358
Total		**10.0527**	**0.2492**	**6.0200e-003**	**17.1522**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

	MT/yr			
Unmitigated	18.1961	1.0754	0.0000	40.7787

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	24.84	5.0423	0.2980	0.0000	11.3001
Single Family Housing	64.8	13.1538	0.7774	0.0000	29.4786
Total		**18.1961**	**1.0754**	**0.0000**	**40.7787**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 8.8.9
** Lakes Environmental Software Inc.
** Date: 8/4/2015
** File: C:\Projects1\I&R\Misc - Small\Prince Road-Newman\Model\PrinceRd-Const-2016.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE PrinceRd-2016 Construction DPM, Los Banos 2004-2008 Met Data
   MODELOPT CONC FLAT
   AVERTIME PERIOD
   POLLUTID DPM
   FLAGPOLE 1.50
   RUNORNOT RUN
   ERRORFIL PrinceRd-Const-2016.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION CON_DPM      AREAPOLY   675282.508  4130408.910          0.0
** DESCRSRC 2016 Construction Area DPM
** Source Parameters **
   SRCPARAM CON_DPM       1.77E-07     6.000          4     2.800
   AREAVERT CON_DPM      675282.508 4130408.910 674903.557 4130401.930
   AREAVERT CON_DPM      674899.862 4130610.498 675278.403 4130618.709

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "7am-4pm"
   EMISFACT CON_DPM      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CON_DPM      HROFDY 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT CON_DPM      HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT CON_DPM      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
** DESCRREC "" ""
   DISCCART    675257.03   4130631.17    1.50
   DISCCART    675239.19   4130633.21    1.50
   DISCCART    675218.29   4130632.70    1.50
   DISCCART    675201.98   4130633.72    1.50
   DISCCART    675183.12   4130631.17    1.50
   DISCCART    675164.26   4130632.70    1.50
   DISCCART    675143.87   4130630.66    1.50
   DISCCART    675127.05   4130632.70    1.50
   DISCCART    675105.64   4130631.68    1.50
   DISCCART    675086.78   4130630.66    1.50
   DISCCART    675068.94   4130627.60    1.50
   DISCCART    675023.07   4130626.07    1.50
   DISCCART    675003.70   4130629.13    1.50
   DISCCART    674985.86   4130629.13    1.50
   DISCCART    674967.00   4130628.62    1.50
   DISCCART    674946.61   4130628.11    1.50
   DISCCART    674927.24   4130632.70    1.50
   DISCCART    674910.93   4130634.23    1.50
   DISCCART    675251.42   4130680.61    1.50
   DISCCART    675248.87   4130696.92    1.50
   DISCCART    675251.42   4130715.78    1.50
   DISCCART    675200.96   4130678.06    1.50
   DISCCART    675208.60   4130694.88    1.50
   DISCCART    675202.49   4130714.76    1.50
   DISCCART    675170.89   4130679.59    1.50
   DISCCART    675165.28   4130695.90    1.50
   DISCCART    675168.34   4130714.76    1.50
   DISCCART    675167.32   4130731.07    1.50
   DISCCART    675168.34   4130750.44    1.50
   DISCCART    675170.89   4130767.26    1.50
   DISCCART    675166.81   4130790.20    1.50
   DISCCART    675150.50   4130802.94    1.50
   DISCCART    675128.58   4130809.57    1.50
   DISCCART    675110.74   4130806.51    1.50
   DISCCART    675090.35   4130812.12    1.50
   DISCCART    675071.49   4130813.14    1.50
   DISCCART    675049.57   4130811.10    1.50
   DISCCART    675035.81   4130795.30    1.50
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DISCCART	675034.28	4130773.89	1.50
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DISCCART	675118.90	4130698.45	1.50
DISCCART	675116.35	4130720.88	1.50
DISCCART	675117.88	4130739.74	1.50
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DISCCART	675038.87	4130706.10	1.50
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DISCCART	675095.45	4130678.06	1.50
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DISCCART	674707.56	4130678.57	1.50
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DISCCART	674698.89	4130623.52	1.50
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DISCCART	674781.47	4130669.40	1.50
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DISCCART	674867.61	4130684.18	1.50
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DISCCART	674864.55	4130741.78	1.50
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DISCCART	674884.43	4130560.32	1.50
DISCCART	674882.90	4130541.46	1.50

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   DISCCART    674888.00   4130430.34    1.50
   DISCCART    674889.52   4130410.46    1.50
   DISCCART    674841.61   4130418.11    1.50
   DISCCART    674823.77   4130419.13    1.50
   DISCCART    674804.40   4130418.11    1.50
   DISCCART    674788.09   4130414.54    1.50
   DISCCART    674767.70   4130421.68    1.50
   DISCCART    674759.55   4130448.18    1.50
   DISCCART    674764.14   4130467.04    1.50
   DISCCART    674761.59   4130488.96    1.50
   DISCCART    674761.59   4130511.90    1.50
   DISCCART    674730.49   4130496.60    1.50
   DISCCART    674732.53   4130476.73    1.50
   DISCCART    674732.53   4130456.85    1.50
   DISCCART    674736.61   4130431.87    1.50
   DISCCART    674720.81   4130417.09    1.50
   DISCCART    674696.34   4130417.09    1.50
   DISCCART    674681.56   4130432.38    1.50
   DISCCART    674685.13   4130460.92    1.50
   DISCCART    674685.13   4130481.82    1.50
   DISCCART    674805.42   4130537.89    1.50
   DISCCART    674806.44   4130520.05    1.50
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   DISCCART    674807.46   4130479.78    1.50
   DISCCART    674807.46   4130461.94    1.50
   DISCCART    674839.57   4130462.96    1.50
   DISCCART    674839.06   4130481.31    1.50
   DISCCART    674840.59   4130501.19    1.50
   DISCCART    674838.55   4130520.56    1.50
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   DISCCART    674803.89   4130626.07    1.50
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   DISCCART    674758.53   4130606.19    1.50
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   DISCCART    674724.38   4130585.29    1.50
   DISCCART    674708.07   4130577.65    1.50
   DISCCART    674688.19   4130569.49    1.50
   DISCCART    674699.91   4130533.81    1.50
   DISCCART    674717.75   4130537.38    1.50
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   DISCCART    674764.14   4130565.42    1.50
   DISCCART    674778.92   4130574.08    1.50
   DISCCART    674793.70   4130583.77    1.50
   DISCCART    674811.03   4130592.94    1.50
   DISCCART    675072.73   4130258.80    1.50
   DISCCART    674940.23   4130133.85    1.50
   DISCCART    675285.22   4130214.63    1.50
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   DISCCART    675280.05   4130310.93    1.50
   DISCCART    675120.88   4130138.23    1.50
   DISCCART    675316.65   4130699.29    1.50
   DISCCART    675317.85   4130712.42    1.50
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   DISCCART    675315.86   4130760.57    1.50
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   DISCCART    675361.22   4130696.50    1.50
   DISCCART    675381.51   4130699.68    1.50
   DISCCART    675393.85   4130701.67    1.50
   DISCCART    675422.10   4130700.48    1.50
   DISCCART    675436.82   4130700.48    1.50
   DISCCART    675459.11   4130699.68    1.50
   DISCCART    675473.83   4130699.68    1.50
   DISCCART    675479.40   4130717.59    1.50
   DISCCART    675477.81   4130729.13    1.50
   DISCCART    675479.00   4130741.47    1.50
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   DISCCART    675477.81   4130766.53    1.50
   DISCCART    675479.80   4130779.67    1.50
   DISCCART    675479.00   4130795.58    1.50
   DISCCART    675472.64   4130804.73    1.50
   DISCCART    675467.07   4130815.48    1.50
   DISCCART    675448.36   4130813.89    1.50
   DISCCART    675436.03   4130813.89    1.50
   DISCCART    675411.36   4130813.49    1.50
   DISCCART    675391.86   4130813.09    1.50
   DISCCART    675083.88   4130318.09    1.50
RE FINISHED
**
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** AERMOD Meteorology Pathway
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**
**
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ME STARTING
   SURFFILE "..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.SFC"
   PROFFILE "..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.PFL"
   SURFDATA 66666 2004
   UAIRDATA 66666 2004
   PROFBASE 42.0 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
** Auto-Generated Plotfiles
   PLOTFILE PERIOD ALL PrinceRd-Const-2016.AD\PE00GALL.PLT 31
   SUMMFILE PrinceRd-Const-2016.sum
OU FINISHED

 **********************************
 *** SETUP Finishes Successfully ***
 **********************************
```

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses RURAL Dispersion Only.

**Model Allows User-Specified Options:
1. Stack-tip Downwash.
2. Model Assumes Receptors on FLAT Terrain.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.

**Other Options Specified:
CCVR Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Accepts FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates PERIOD Averages Only

**This Run Includes: 1 Source(s); 1 Source Group(s); and 223 Receptor(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 14134

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 42.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Detailed Error/Message File: PrinceRd-Const-2016.err
**File for Summary of Results: PrinceRd-Const-2016.sum

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CON_DPM	0	0.17700E-06	675282.5	4130408.9	42.0	6.00	4	2.80	NO	HROFDY

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	CON_DPM ,

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = CON DPM ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.0000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.1000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.1000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.0000E+00	23	.00000E+00	24	.00000E+00

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(675257.0,	4130631.2,	42.0,	42.0,	1.5);	(675239.2,	4130633.2,	42.0,	42.0,	1.5);
(675218.3,	4130632.7,	42.0,	42.0,	1.5);	(675202.0,	4130633.7,	42.0,	42.0,	1.5);
(675183.1,	4130631.2,	42.0,	42.0,	1.5);	(675164.3,	4130632.7,	42.0,	42.0,	1.5);
(675143.9,	4130630.7,	42.0,	42.0,	1.5);	(675127.1,	4130632.7,	42.0,	42.0,	1.5);
(675105.6,	4130631.7,	42.0,	42.0,	1.5);	(675086.8,	4130630.7,	42.0,	42.0,	1.5);
(675068.9,	4130627.6,	42.0,	42.0,	1.5);	(675023.1,	4130626.1,	42.0,	42.0,	1.5);
(675003.7,	4130629.1,	42.0,	42.0,	1.5);	(674985.9,	4130629.1,	42.0,	42.0,	1.5);
(674967.0,	4130628.6,	42.0,	42.0,	1.5);	(674946.6,	4130628.1,	42.0,	42.0,	1.5);
(674927.2,	4130632.7,	42.0,	42.0,	1.5);	(674910.9,	4130634.2,	42.0,	42.0,	1.5);
(675251.4,	4130680.6,	42.0,	42.0,	1.5);	(675248.9,	4130696.9,	42.0,	42.0,	1.5);
(675251.4,	4130715.8,	42.0,	42.0,	1.5);	(675201.0,	4130678.1,	42.0,	42.0,	1.5);
(675208.6,	4130694.9,	42.0,	42.0,	1.5);	(675202.5,	4130714.8,	42.0,	42.0,	1.5);
(675170.9,	4130679.6,	42.0,	42.0,	1.5);	(675165.3,	4130695.9,	42.0,	42.0,	1.5);
(675168.3,	4130714.8,	42.0,	42.0,	1.5);	(675167.3,	4130731.1,	42.0,	42.0,	1.5);
(675168.3,	4130750.4,	42.0,	42.0,	1.5);	(675170.9,	4130767.3,	42.0,	42.0,	1.5);
(675166.8,	4130790.2,	42.0,	42.0,	1.5);	(675150.5,	4130802.9,	42.0,	42.0,	1.5);
(675128.6,	4130809.6,	42.0,	42.0,	1.5);	(675110.7,	4130806.5,	42.0,	42.0,	1.5);
(675090.4,	4130812.1,	42.0,	42.0,	1.5);	(675071.5,	4130813.1,	42.0,	42.0,	1.5);
(675049.6,	4130811.1,	42.0,	42.0,	1.5);	(675035.8,	4130795.3,	42.0,	42.0,	1.5);
(675034.3,	4130773.9,	42.0,	42.0,	1.5);	(675033.8,	4130753.0,	42.0,	42.0,	1.5);
(675117.9,	4130679.6,	42.0,	42.0,	1.5);	(675118.9,	4130698.4,	42.0,	42.0,	1.5);
(675116.4,	4130720.9,	42.0,	42.0,	1.5);	(675117.9,	4130739.7,	42.0,	42.0,	1.5);
(675114.8,	4130759.6,	42.0,	42.0,	1.5);	(675092.4,	4130762.2,	42.0,	42.0,	1.5);
(675091.4,	4130741.8,	42.0,	42.0,	1.5);	(675077.1,	4130719.9,	42.0,	42.0,	1.5);
(675057.7,	4130706.1,	42.0,	42.0,	1.5);	(675038.9,	4130706.1,	42.0,	42.0,	1.5);
(675018.5,	4130709.1,	42.0,	42.0,	1.5);	(675001.2,	4130708.1,	42.0,	42.0,	1.5);
(674982.3,	4130708.1,	42.0,	42.0,	1.5);	(674964.5,	4130707.1,	42.0,	42.0,	1.5);
(674946.1,	4130708.6,	42.0,	42.0,	1.5);	(674927.2,	4130711.2,	42.0,	42.0,	1.5);
(674907.9,	4130712.7,	42.0,	42.0,	1.5);	(674908.4,	4130684.2,	42.0,	42.0,	1.5);
(674927.2,	4130680.6,	42.0,	42.0,	1.5);	(674945.6,	4130678.1,	42.0,	42.0,	1.5);
(674963.9,	4130676.5,	42.0,	42.0,	1.5);	(674984.3,	4130675.5,	42.0,	42.0,	1.5);
(675001.7,	4130677.5,	42.0,	42.0,	1.5);	(675020.0,	4130676.5,	42.0,	42.0,	1.5);
(675039.4,	4130678.1,	42.0,	42.0,	1.5);	(675058.2,	4130677.5,	42.0,	42.0,	1.5);
(675073.5,	4130678.1,	42.0,	42.0,	1.5);	(675095.5,	4130678.1,	42.0,	42.0,	1.5);
(675259.1,	4130025.4,	42.0,	42.0,	1.5);	(675240.2,	4130028.4,	42.0,	42.0,	1.5);
(675218.3,	4130827.9,	42.0,	42.0,	1.5);	(675201.5,	4130827.9,	42.0,	42.0,	1.5);
(675181.1,	4130833.5,	42.0,	42.0,	1.5);	(675164.3,	4130835.0,	42.0,	42.0,	1.5);
(675144.9,	4130835.0,	42.0,	42.0,	1.5);	(675123.5,	4130835.0,	42.0,	42.0,	1.5);
(675105.1,	4130836.1,	42.0,	42.0,	1.5);	(675088.3,	4130836.1,	42.0,	42.0,	1.5);
(675064.4,	4130839.1,	42.0,	42.0,	1.5);	(674882.9,	4130823.8,	42.0,	42.0,	1.5);
(674865.6,	4130825.9,	42.0,	42.0,	1.5);	(674845.7,	4130827.9,	42.0,	42.0,	1.5);
(674830.9,	4130827.4,	42.0,	42.0,	1.5);	(674812.1,	4130827.9,	42.0,	42.0,	1.5);
(674787.1,	4130826.4,	42.0,	42.0,	1.5);	(674770.8,	4130826.4,	42.0,	42.0,	1.5);
(674751.4,	4130829.4,	42.0,	42.0,	1.5);	(674730.5,	4130830.0,	42.0,	42.0,	1.5);
(674716.7,	4130830.0,	42.0,	42.0,	1.5);	(674694.3,	4130828.4,	42.0,	42.0,	1.5);

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(674697.9,	4130783.1,	42.0,	42.0,	1.5);	(674714.2,	4130783.1,	42.0,	42.0,	1.5);
(674732.0,	4130783.6,	42.0,	42.0,	1.5);	(674750.9,	4130781.5,	42.0,	42.0,	1.5);
(674769.7,	4130781.5,	42.0,	42.0,	1.5);	(674787.1,	4130780.0,	42.0,	42.0,	1.5);
(674789.1,	4130750.9,	42.0,	42.0,	1.5);	(674772.8,	4130744.8,	42.0,	42.0,	1.5);
(674753.9,	4130740.2,	42.0,	42.0,	1.5);	(674736.6,	4130736.7,	42.0,	42.0,	1.5);
(674720.3,	4130731.1,	42.0,	42.0,	1.5);	(674695.8,	4130719.9,	42.0,	42.0,	1.5);
(674696.3,	4130738.2,	42.0,	42.0,	1.5);	(674695.8,	4130759.1,	42.0,	42.0,	1.5);
(674835.0,	4130784.6,	42.0,	42.0,	1.5);	(674834.0,	4130763.2,	42.0,	42.0,	1.5);
(674833.0,	4130746.9,	42.0,	42.0,	1.5);	(674835.5,	4130720.9,	42.0,	42.0,	1.5);
(674817.7,	4130708.1,	42.0,	42.0,	1.5);	(674795.7,	4130706.1,	42.0,	42.0,	1.5);
(674776.9,	4130704.6,	42.0,	42.0,	1.5);	(674758.0,	4130697.4,	42.0,	42.0,	1.5);
(674741.7,	4130690.8,	42.0,	42.0,	1.5);	(674725.4,	4130681.6,	42.0,	42.0,	1.5);
(674707.6,	4130678.6,	42.0,	42.0,	1.5);	(674694.8,	4130666.3,	42.0,	42.0,	1.5);
(674698.9,	4130623.5,	42.0,	42.0,	1.5);	(674717.8,	4130632.7,	42.0,	42.0,	1.5);
(674731.5,	4130645.9,	42.0,	42.0,	1.5);	(674747.8,	4130650.5,	42.0,	42.0,	1.5);
(674764.1,	4130662.8,	42.0,	42.0,	1.5);	(674781.5,	4130669.4,	42.0,	42.0,	1.5);
(674802.9,	4130676.5,	42.0,	42.0,	1.5);	(674819.2,	4130677.5,	42.0,	42.0,	1.5);
(674840.1,	4130681.1,	42.0,	42.0,	1.5);	(674867.6,	4130684.2,	42.0,	42.0,	1.5);
(674866.1,	4130701.5,	42.0,	42.0,	1.5);	(674867.1,	4130724.4,	42.0,	42.0,	1.5);
(674864.6,	4130741.8,	42.0,	42.0,	1.5);	(674865.1,	4130762.2,	42.0,	42.0,	1.5);
(674865.1,	4130780.0,	42.0,	42.0,	1.5);	(674885.5,	4130579.2,	42.0,	42.0,	1.5);
(674884.4,	4130560.3,	42.0,	42.0,	1.5);	(674882.9,	4130541.5,	42.0,	42.0,	1.5);
(674884.9,	4130523.1,	42.0,	42.0,	1.5);	(674883.4,	4130502.7,	42.0,	42.0,	1.5);
(674884.9,	4130484.9,	42.0,	42.0,	1.5);	(674886.6,	4130467.5,	42.0,	42.0,	1.5);
(674883.4,	4130449.7,	42.0,	42.0,	1.5);	(674888.0,	4130430.3,	42.0,	42.0,	1.5);
(674889.5,	4130410.5,	42.0,	42.0,	1.5);	(674841.6,	4130418.1,	42.0,	42.0,	1.5);
(674823.8,	4130419.1,	42.0,	42.0,	1.5);	(674804.4,	4130418.1,	42.0,	42.0,	1.5);
(674788.1,	4130414.5,	42.0,	42.0,	1.5);	(674767.7,	4130421.7,	42.0,	42.0,	1.5);
(674759.6,	4130448.2,	42.0,	42.0,	1.5);	(674764.1,	4130467.0,	42.0,	42.0,	1.5);
(674761.6,	4130489.0,	42.0,	42.0,	1.5);	(674761.6,	4130511.9,	42.0,	42.0,	1.5);
(674730.5,	4130496.6,	42.0,	42.0,	1.5);	(674732.5,	4130476.7,	42.0,	42.0,	1.5);
(674732.5,	4130456.8,	42.0,	42.0,	1.5);	(674736.6,	4130431.9,	42.0,	42.0,	1.5);
(674720.8,	4130417.1,	42.0,	42.0,	1.5);	(674696.3,	4130417.1,	42.0,	42.0,	1.5);
(674681.6,	4130432.4,	42.0,	42.0,	1.5);	(674685.1,	4130460.9,	42.0,	42.0,	1.5);
(674605.1,	4130481.0,	42.0,	42.0,	1.5);	(674005.4,	4130537.9,	42.0,	42.0,	1.5);
(674806.4,	4130520.0,	42.0,	42.0,	1.5);	(674804.9,	4130499.7,	42.0,	42.0,	1.5);
(674807.5,	4130479.8,	42.0,	42.0,	1.5);	(674807.5,	4130461.9,	42.0,	42.0,	1.5);
(674839.6,	4130463.0,	42.0,	42.0,	1.5);	(674839.1,	4130481.3,	42.0,	42.0,	1.5);
(674840.6,	4130501.2,	42.0,	42.0,	1.5);	(674838.6,	4130520.6,	42.0,	42.0,	1.5);
(674838.0,	4130537.9,	42.0,	42.0,	1.5);	(674837.5,	4130556.8,	42.0,	42.0,	1.5);
(674837.5,	4130599.6,	42.0,	42.0,	1.5);	(674836.5,	4130615.9,	42.0,	42.0,	1.5);
(674838.6,	4130633.2,	42.0,	42.0,	1.5);	(674803.9,	4130626.1,	42.0,	42.0,	1.5);
(674790.1,	4130619.4,	42.0,	42.0,	1.5);	(674771.8,	4130614.9,	42.0,	42.0,	1.5);
(674758.5,	4130606.2,	42.0,	42.0,	1.5);	(674741.7,	4130592.9,	42.0,	42.0,	1.5);
(674724.4,	4130585.3,	42.0,	42.0,	1.5);	(674708.1,	4130577.6,	42.0,	42.0,	1.5);

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	674688.2,	4130569.5,	42.0,	42.0,	1.5);	(674699.9,	4130533.8,	42.0,	42.0,	1.5);
(	674717.8,	4130537.4,	42.0,	42.0,	1.5);	(674734.1,	4130545.5,	42.0,	42.0,	1.5);
(	674747.8,	4130554.2,	42.0,	42.0,	1.5);	(674764.1,	4130565.4,	42.0,	42.0,	1.5);
(	674778.9,	4130574.1,	42.0,	42.0,	1.5);	(674793.7,	4130583.8,	42.0,	42.0,	1.5);
(	674811.0,	4130592.9,	42.0,	42.0,	1.5);	(675072.7,	4130258.8,	42.0,	42.0,	1.5);
(	674940.2,	4130133.8,	42.0,	42.0,	1.5);	(675285.2,	4130214.6,	42.0,	42.0,	1.5);
(	675331.8,	4130318.5,	42.0,	42.0,	1.5);	(675280.1,	4130310.9,	42.0,	42.0,	1.5);
(	675120.9,	4130138.2,	42.0,	42.0,	1.5);	(675316.7,	4130699.3,	42.0,	42.0,	1.5);
(	675317.9,	4130712.4,	42.0,	42.0,	1.5);	(675317.5,	4130724.0,	42.0,	42.0,	1.5);
(	675315.9,	4130760.6,	42.0,	42.0,	1.5);	(675316.7,	4130774.5,	42.0,	42.0,	1.5);
(	675317.9,	4130785.6,	42.0,	42.0,	1.5);	(675342.5,	4130696.5,	42.0,	42.0,	1.5);
(	675361.2,	4130696.5,	42.0,	42.0,	1.5);	(675381.5,	4130699.7,	42.0,	42.0,	1.5);
(	675393.9,	4130701.7,	42.0,	42.0,	1.5);	(675422.1,	4130700.5,	42.0,	42.0,	1.5);
(	675436.8,	4130700.5,	42.0,	42.0,	1.5);	(675459.1,	4130699.7,	42.0,	42.0,	1.5);
(	675473.8,	4130699.7,	42.0,	42.0,	1.5);	(675479.4,	4130717.6,	42.0,	42.0,	1.5);
(	675477.8,	4130729.1,	42.0,	42.0,	1.5);	(675479.0,	4130741.5,	42.0,	42.0,	1.5);
(	675477.8,	4130756.6,	42.0,	42.0,	1.5);	(675477.8,	4130766.5,	42.0,	42.0,	1.5);
(	675479.8,	4130779.7,	42.0,	42.0,	1.5);	(675479.0,	4130795.6,	42.0,	42.0,	1.5);
(	675472.6,	4130804.7,	42.0,	42.0,	1.5);	(675467.1,	4130815.5,	42.0,	42.0,	1.5);
(	675448.4,	4130813.9,	42.0,	42.0,	1.5);	(675436.0,	4130813.9,	42.0,	42.0,	1.5);
(	675411.4,	4130813.5,	42.0,	42.0,	1.5);	(675391.9,	4130813.1,	42.0,	42.0,	1.5);
(	675083.9,	4130318.1,	42.0,	42.0,	1.5);					

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
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NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.SFC Met Version: 14134
Profile file: ..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 66666 Upper air station no.: 66666
Name: UNKNOWN Name: UNKNOWN
Year: 2004 Year: 2004

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
04	01	01	1	01	-10.1	0.109	-9.000	-9.000	-999.	86.	11.4	0.05	0.65	1.00	3.10	121.	15.0	282.0	2.0
04	01	01	1	02	-9.8	0.106	-9.000	-9.000	-999.	83.	11.0	0.04	0.65	1.00	3.10	108.	15.0	281.9	2.0
04	01	01	1	03	-22.3	0.207	-9.000	-9.000	-999.	226.	35.7	0.04	0.65	1.00	4.10	104.	15.0	281.8	2.0
04	01	01	1	04	-26.8	0.258	-9.000	-9.000	-999.	315.	57.7	0.04	0.65	1.00	4.60	113.	15.0	281.6	2.0
04	01	01	1	05	-32.0	0.308	-9.000	-9.000	-999.	411.	82.5	0.05	0.65	1.00	5.10	123.	15.0	281.4	2.0
04	01	01	1	06	-35.5	0.360	-9.000	-9.000	-999.	517.	117.7	0.05	0.65	1.00	5.70	132.	15.0	281.2	2.0
04	01	01	1	07	-34.1	0.445	-9.000	-9.000	-999.	711.	231.6	0.05	0.65	1.00	6.70	135.	15.0	281.2	2.0
04	01	01	1	08	-29.3	0.524	-9.000	-9.000	-999.	910.	442.2	0.05	0.65	0.69	7.70	133.	15.0	281.0	2.0
04	01	01	1	09	-10.2	0.606	-9.000	-9.000	-999.	1131.	1959.4	0.05	0.65	0.38	8.70	127.	15.0	280.8	2.0
04	01	01	1	10	7.0	0.612	0.208	0.005	46.	1149.	-2954.0	0.05	0.65	0.27	8.70	131.	15.0	280.9	2.0
04	01	01	1	11	14.0	0.614	0.316	0.005	81.	1155.	-1490.1	0.05	0.65	0.23	8.70	134.	15.0	281.2	2.0
04	01	01	1	12	17.9	0.581	0.413	0.005	142.	1065.	-986.6	0.05	0.65	0.21	8.20	126.	15.0	281.8	2.0
04	01	01	1	13	59.7	0.558	0.797	0.005	305.	1001.	-261.4	0.05	0.65	0.21	7.70	123.	15.0	282.2	2.0
04	01	01	1	14	62.9	0.482	0.913	0.005	435.	809.	-159.8	0.04	0.65	0.22	6.70	109.	15.0	282.5	2.0
04	01	01	1	15	43.4	0.444	0.860	0.005	527.	712.	-181.1	0.04	0.65	0.25	6.20	112.	15.0	282.6	2.0
04	01	01	1	16	15.6	0.400	0.623	0.005	556.	610.	-369.5	0.04	0.65	0.34	5.70	114.	15.0	282.5	2.0
04	01	01	1	17	-17.7	0.236	-9.000	-9.000	-999.	295.	66.5	0.04	0.65	0.59	4.10	111.	15.0	282.6	2.0
04	01	01	1	18	-2.0	0.051	-9.000	-9.000	-999.	105.	5.9	0.04	0.65	1.00	1.50	87.	15.0	282.8	2.0
04	01	01	1	19	-11.3	0.123	-9.000	-9.000	-999.	104.	14.8	0.10	0.65	1.00	3.10	334.	15.0	282.4	2.0
04	01	01	1	20	-12.7	0.166	-9.000	-9.000	-999.	162.	32.2	0.09	0.65	1.00	3.10	327.	15.0	282.1	2.0
04	01	01	1	21	-8.0	0.103	-9.000	-9.000	-999.	80.	12.4	0.10	0.65	1.00	2.60	330.	15.0	281.9	2.0
04	01	01	1	22	-5.2	0.081	-9.000	-9.000	-999.	56.	9.4	0.09	0.65	1.00	2.10	302.	15.0	281.8	2.0
04	01	01	1	23	-5.5	0.083	-9.000	-9.000	-999.	57.	9.4	0.09	0.65	1.00	2.10	290.	15.0	281.2	2.0
04	01	01	1	24	-8.2	0.101	-9.000	-9.000	-999.	77.	11.3	0.09	0.65	1.00	2.60	300.	15.0	280.6	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
04	01	01	01	15.0	1	121.	3.10	282.1	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
675257.03	4130631.17	0.02618	675239.19	4130633.21	0.02969
675218.29	4130632.70	0.03548	675201.98	4130633.72	0.03753
675183.12	4130631.17	0.04340	675164.26	4130632.70	0.04371
675143.87	4130630.66	0.04794	675127.05	4130632.70	0.04651
675105.64	4130631.68	0.04864	675086.78	4130630.66	0.05034
675068.94	4130627.60	0.05439	675023.07	4130626.07	0.05581
675003.70	4130629.13	0.05161	674985.86	4130629.13	0.05107
674967.00	4130628.62	0.05093	674946.61	4130628.11	0.05060
674927.24	4130632.70	0.04589	674910.93	4130634.23	0.04431
675251.42	4130680.61	0.00994	675248.87	4130696.92	0.00794
675251.42	4130715.78	0.00631	675200.96	4130678.06	0.01266
675208.60	4130694.88	0.00899	675202.49	4130714.76	0.00682
675170.89	4130679.59	0.01438	675165.28	4130695.90	0.01088
675168.34	4130714.76	0.00787	675167.32	4130731.07	0.00629
675168.34	4130750.44	0.00497	675170.89	4130767.26	0.00417
675166.81	4130790.20	0.00349	675150.50	4130802.94	0.00333
675128.58	4130809.57	0.00339	675110.74	4130806.51	0.00372
675090.35	4130812.12	0.00385	675071.49	4130813.14	0.00413
675049.57	4130811.10	0.00462	675035.81	4130795.30	0.00566
675034.28	4130773.89	0.00702	675033.77	4130752.99	0.00877
675117.88	4130679.59	0.01782	675118.90	4130698.45	0.01287
675116.35	4130720.88	0.00925	675117.88	4130739.74	0.00713
675114.82	4130759.62	0.00572	675092.39	4130762.16	0.00619
675091.37	4130741.78	0.00789	675077.10	4130719.86	0.01108
675057.73	4130706.10	0.01421	675038.87	4130706.10	0.01497
675018.48	4130709.15	0.01514	675001.15	4130708.13	0.01591
674982.29	4130708.13	0.01647	674964.45	4130707.12	0.01713
674946.10	4130708.64	0.01728	674927.24	4130711.19	0.01722
674907.87	4130712.72	0.01735	674908.38	4130684.18	0.02317
674927.24	4130680.61	0.02305	674945.59	4130678.06	0.02430
674963.94	4130676.53	0.02442	674984.33	4130675.51	0.02430
675001.66	4130677.55	0.02323	675020.01	4130676.53	0.02303
675039.38	4130678.06	0.02190	675058.24	4130677.55	0.02137
675073.53	4130678.06	0.02057	675095.45	4130678.06	0.01953
675259.07	4130825.37	0.00265	675240.21	4130828.43	0.00259
675218.29	4130827.92	0.00261	675201.47	4130827.92	0.00264
675181.08	4130833.52	0.00261	675164.26	4130835.05	0.00265
675144.89	4130835.05	0.00273	675123.48	4130835.05	0.00288
675105.13	4130836.07	0.00302	675088.31	4130836.07	0.00320
675064.36	4130839.13	0.00342	674882.90	4130823.84	0.00723

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
674865.57	4130825.88	0.00740	674845.69	4130827.92	0.00757
674830.91	4130827.41	0.00778	674812.05	4130827.92	0.00797
674787.07	4130826.39	0.00829	674770.76	4130826.39	0.00841
674751.39	4130829.45	0.00835	674730.49	4130829.96	0.00837
674716.73	4130829.96	0.00836	674694.31	4130828.43	0.00834
674697.87	4130783.06	0.01016	674714.18	4130783.06	0.01039
674732.02	4130783.57	0.01057	674750.88	4130781.53	0.01084
674769.74	4130781.53	0.01093	674787.07	4130780.00	0.01104
674789.11	4130750.95	0.01324	674772.80	4130744.83	0.01354
674753.94	4130740.25	0.01350	674736.61	4130736.68	0.01328
674720.30	4130731.07	0.01307	674695.83	4130719.86	0.01266
674696.34	4130738.21	0.01198	674695.83	4130759.11	0.01112
674834.99	4130784.59	0.01039	674833.97	4130763.18	0.01214
674832.95	4130746.87	0.01369	674835.50	4130720.88	0.01669
674817.66	4130708.13	0.01811	674795.74	4130706.10	0.01767
674776.88	4130704.57	0.01705	674758.02	4130697.43	0.01668
674741.71	4130690.80	0.01616	674725.40	4130681.63	0.01558
674707.56	4130678.57	0.01458	674694.82	4130666.34	0.01408
674698.89	4130623.52	0.01474	674717.75	4130632.70	0.01621
674731.51	4130645.95	0.01718	674747.83	4130650.54	0.01851
674764.14	4130662.77	0.01942	674781.47	4130669.40	0.02049
674802.87	4130676.53	0.02152	674819.18	4130677.55	0.02256
674840.08	4130681.12	0.02313	674867.61	4130684.18	0.02327
674866.08	4130701.51	0.01976	674867.10	4130724.45	0.01614
674864.55	4130741.78	0.01399	674865.06	4130762.16	0.01189
674865.06	4130780.00	0.01036	674885.45	4130579.18	0.08260
674884.43	4130560.32	0.08813	674882.90	4130541.46	0.08951
674884.94	4130523.11	0.09565	674883.41	4130502.72	0.09296
674884.94	4130484.88	0.09501	674886.58	4130467.51	0.09598
674883.41	4130449.71	0.08456	674888.00	4130430.34	0.08629
674889.52	4130410.46	0.07592	674841.61	4130418.11	0.03137
674823.77	4130419.13	0.02514	674804.40	4130418.11	0.02039
674788.09	4130414.54	0.01733	674767.70	4130421.68	0.01528
674759.55	4130448.18	0.01600	674764.14	4130467.04	0.01780
674761.59	4130488.96	0.01883	674761.59	4130511.90	0.02010
674730.49	4130496.60	0.01537	674732.53	4130476.73	0.01467
674732.53	4130456.85	0.01374	674736.61	4130431.87	0.01293
674720.81	4130417.09	0.01124	674696.34	4130417.09	0.00995
674681.56	4130432.38	0.00972	674685.13	4130460.92	0.01069
674685.13	4130481.82	0.01130	674805.42	4130537.89	0.03098

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
674806.44	4130520.05	0.03068	674804.91	4130499.66	0.02892
674807.46	4130479.78	0.02793	674807.46	4130461.94	0.02601
674839.57	4130462.96	0.03921	674839.06	4130481.31	0.04160
674840.59	4130501.19	0.04453	674838.55	4130520.56	0.04435
674838.04	4130537.89	0.04425	674837.53	4130556.75	0.04340
674837.53	4130599.57	0.03904	674836.51	4130615.88	0.03607
674838.55	4130633.21	0.03329	674803.89	4130626.07	0.02722
674790.13	4130619.44	0.02528	674771.78	4130614.86	0.02260
674758.53	4130606.19	0.02096	674741.71	4130592.94	0.01894
674724.38	4130585.29	0.01697	674708.07	4130577.65	0.01532
674688.19	4130569.49	0.01357	674699.91	4130533.81	0.01383
674717.75	4130537.38	0.01553	674734.06	4130545.54	0.01751
674747.83	4130554.20	0.01947	674764.14	4130565.42	0.02210
674778.92	4130574.08	0.02473	674793.70	4130583.77	0.02760
674811.03	4130592.94	0.03136	675072.73	4130258.80	0.04879
674940.23	4130133.85	0.01216	675285.22	4130214.63	0.03562
675331.78	4130318.49	0.05091	675280.05	4130310.93	0.06591
675120.88	4130138.23	0.02505	675316.65	4130699.29	0.00834
675317.85	4130712.42	0.00722	675317.45	4130723.96	0.00639
675315.86	4130760.57	0.00452	675316.65	4130774.49	0.00403
675317.85	4130785.63	0.00371	675342.52	4130696.50	0.00895
675361.22	4130696.50	0.00919	675381.51	4130699.68	0.00913
675393.85	4130701.67	0.00909	675422.10	4130700.48	0.00952
675436.82	4130700.48	0.00967	675459.11	4130699.68	0.00993
675473.83	4130699.68	0.01003	675479.40	4130717.59	0.00862
675477.81	4130729.13	0.00779	675479.00	4130741.47	0.00701
675477.81	4130756.59	0.00616	675477.81	4130766.53	0.00566
675479.80	4130779.67	0.00510	675479.00	4130795.58	0.00448
675472.64	4130804.73	0.00412	675467.07	4130815.48	0.00376
675440.36	4130813.09	0.00368	675436.03	4130813.09	0.00361
675411.36	4130813.49	0.00348	675391.86	4130813.09	0.00338
675083.88	4130318.09	0.08245			

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.09598 AT (674886.58, 4130467.51, 42.00, 42.00, 1.50)	DC	
	2ND HIGHEST VALUE IS	0.09565 AT (674884.94, 4130523.11, 42.00, 42.00, 1.50)	DC	
	3RD HIGHEST VALUE IS	0.09501 AT (674884.94, 4130484.88, 42.00, 42.00, 1.50)	DC	
	4TH HIGHEST VALUE IS	0.09296 AT (674883.41, 4130502.72, 42.00, 42.00, 1.50)	DC	
	5TH HIGHEST VALUE IS	0.08951 AT (674882.90, 4130541.46, 42.00, 42.00, 1.50)	DC	
	6TH HIGHEST VALUE IS	0.08813 AT (674884.43, 4130560.32, 42.00, 42.00, 1.50)	DC	
	7TH HIGHEST VALUE IS	0.08629 AT (674888.00, 4130430.34, 42.00, 42.00, 1.50)	DC	
	8TH HIGHEST VALUE IS	0.08456 AT (674883.41, 4130449.71, 42.00, 42.00, 1.50)	DC	
	9TH HIGHEST VALUE IS	0.08260 AT (674885.45, 4130579.18, 42.00, 42.00, 1.50)	DC	
	10TH HIGHEST VALUE IS	0.08245 AT (675083.88, 4130318.09, 42.00, 42.00, 1.50)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 1808 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1808 Calm Hours Identified

A Total of 0 Missing Hours Identified (0.00 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** AERMOD Finishes Successfully ***
****

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**
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**
** AERMOD Input Produced by:
** AERMOD View Ver. 8.8.9
** Lakes Environmental Software Inc.
** Date: 8/4/2015
** File: C:\Projects1\I&R\Misc - Small\Prince Road-Newman\Model\PrinceRd-Const-2017.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE PrinceRd-2017 Construction DPM, Los Banos 2004-2008 Met Data
   MODELOPT CONC FLAT
   AVERTIME PERIOD
   POLLUTID DPM
   FLAGPOLE 1.50
   RUNORNOT RUN
   ERRORFIL PrinceRd-Const-2017.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION CON_DPM      AREAPOLY   675282.508  4130408.910          0.0
** DESCRSRC 2017 Construction Area DPM
** Source Parameters **
   SRCPARAM CON_DPM       1.91E-07     6.000         4     2.800
   AREAVERT CON_DPM      675282.508 4130408.910 674903.557 4130401.930
   AREAVERT CON_DPM      674899.862 4130610.498 675278.403 4130618.709

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "7am-4pm"
   EMISFACT CON_DPM      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CON_DPM      HROFDY 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT CON_DPM      HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT CON_DPM      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
** DESCRREC "" ""
   DISCCART    675257.03   4130631.17    1.50
   DISCCART    675239.19   4130633.21    1.50
   DISCCART    675218.29   4130632.70    1.50
   DISCCART    675201.98   4130633.72    1.50
   DISCCART    675183.12   4130631.17    1.50
   DISCCART    675164.26   4130632.70    1.50
   DISCCART    675143.87   4130630.66    1.50
   DISCCART    675127.05   4130632.70    1.50
   DISCCART    675105.64   4130631.68    1.50
   DISCCART    675086.78   4130630.66    1.50
   DISCCART    675068.94   4130627.60    1.50
   DISCCART    675023.07   4130626.07    1.50
   DISCCART    675003.70   4130629.13    1.50
   DISCCART    674985.86   4130629.13    1.50
   DISCCART    674967.00   4130628.62    1.50
   DISCCART    674946.61   4130628.11    1.50
   DISCCART    674927.24   4130632.70    1.50
   DISCCART    674910.93   4130634.23    1.50
   DISCCART    675251.42   4130680.61    1.50
   DISCCART    675248.87   4130696.92    1.50
   DISCCART    675251.42   4130715.78    1.50
   DISCCART    675200.96   4130678.06    1.50
   DISCCART    675208.60   4130694.88    1.50
   DISCCART    675202.49   4130714.76    1.50
   DISCCART    675170.89   4130679.59    1.50
   DISCCART    675165.28   4130695.90    1.50
   DISCCART    675168.34   4130714.76    1.50
   DISCCART    675167.32   4130731.07    1.50
   DISCCART    675168.34   4130750.44    1.50
   DISCCART    675170.89   4130767.26    1.50
   DISCCART    675166.81   4130790.20    1.50
   DISCCART    675150.50   4130802.94    1.50
   DISCCART    675128.58   4130809.57    1.50
   DISCCART    675110.74   4130806.51    1.50
   DISCCART    675090.35   4130812.12    1.50
   DISCCART    675071.49   4130813.14    1.50
   DISCCART    675049.57   4130811.10    1.50
   DISCCART    675035.81   4130795.30    1.50
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DISCCART	675034.28	4130773.89	1.50
DISCCART	675033.77	4130752.99	1.50
DISCCART	675117.88	4130679.59	1.50
DISCCART	675118.90	4130698.45	1.50
DISCCART	675116.35	4130720.88	1.50
DISCCART	675117.88	4130739.74	1.50
DISCCART	675114.82	4130759.62	1.50
DISCCART	675092.39	4130762.16	1.50
DISCCART	675091.37	4130741.78	1.50
DISCCART	675077.10	4130719.86	1.50
DISCCART	675057.73	4130706.10	1.50
DISCCART	675038.87	4130706.10	1.50
DISCCART	675018.48	4130709.15	1.50
DISCCART	675001.15	4130708.13	1.50
DISCCART	674982.29	4130708.13	1.50
DISCCART	674964.45	4130707.12	1.50
DISCCART	674946.10	4130708.64	1.50
DISCCART	674927.24	4130711.19	1.50
DISCCART	674907.87	4130712.72	1.50
DISCCART	674908.38	4130684.18	1.50
DISCCART	674927.24	4130680.61	1.50
DISCCART	674945.59	4130678.06	1.50
DISCCART	674963.94	4130676.53	1.50
DISCCART	674984.33	4130675.51	1.50
DISCCART	675001.66	4130677.55	1.50
DISCCART	675020.01	4130676.53	1.50
DISCCART	675039.38	4130678.06	1.50
DISCCART	675058.24	4130677.55	1.50
DISCCART	675073.53	4130678.06	1.50
DISCCART	675095.45	4130678.06	1.50
DISCCART	675259.07	4130825.37	1.50
DISCCART	675240.21	4130828.43	1.50
DISCCART	675218.29	4130827.92	1.50
DISCCART	675201.47	4130827.92	1.50
DISCCART	675181.08	4130833.52	1.50
DISCCART	675164.26	4130835.05	1.50
DISCCART	675144.89	4130835.05	1.50
DISCCART	675123.48	4130835.05	1.50
DISCCART	675105.13	4130836.07	1.50
DISCCART	675088.31	4130836.07	1.50
DISCCART	675064.36	4130839.13	1.50
DISCCART	674882.90	4130823.84	1.50
DISCCART	674865.57	4130825.88	1.50
DISCCART	674845.69	4130827.92	1.50
DISCCART	674830.91	4130827.41	1.50
DISCCART	674812.05	4130827.92	1.50
DISCCART	674787.07	4130826.39	1.50
DISCCART	674770.76	4130826.39	1.50
DISCCART	674751.39	4130829.45	1.50
DISCCART	674730.49	4130829.96	1.50
DISCCART	674716.73	4130829.96	1.50
DISCCART	674694.31	4130828.43	1.50
DISCCART	674697.87	4130783.06	1.50
DISCCART	674714.18	4130783.06	1.50
DISCCART	674732.02	4130783.57	1.50
DISCCART	674750.88	4130781.53	1.50
DISCCART	674769.74	4130781.53	1.50
DISCCART	674787.07	4130780.00	1.50
DISCCART	674789.11	4130750.95	1.50
DISCCART	674772.80	4130744.83	1.50
DISCCART	674753.94	4130740.25	1.50
DISCCART	674736.61	4130736.68	1.50
DISCCART	674720.30	4130731.07	1.50
DISCCART	674695.83	4130719.86	1.50
DISCCART	674696.34	4130738.21	1.50
DISCCART	674695.83	4130759.11	1.50
DISCCART	674834.99	4130784.59	1.50
DISCCART	674833.97	4130763.18	1.50
DISCCART	674832.95	4130746.87	1.50
DISCCART	674835.50	4130720.88	1.50
DISCCART	674817.66	4130708.13	1.50
DISCCART	674795.74	4130706.10	1.50
DISCCART	674776.88	4130704.57	1.50
DISCCART	674758.02	4130697.43	1.50
DISCCART	674741.71	4130690.80	1.50
DISCCART	674725.40	4130681.63	1.50
DISCCART	674707.56	4130678.57	1.50
DISCCART	674694.82	4130666.34	1.50
DISCCART	674698.89	4130623.52	1.50
DISCCART	674717.75	4130632.70	1.50
DISCCART	674731.51	4130645.95	1.50
DISCCART	674747.83	4130650.54	1.50
DISCCART	674764.14	4130662.77	1.50
DISCCART	674781.47	4130669.40	1.50
DISCCART	674802.87	4130676.53	1.50
DISCCART	674819.18	4130677.55	1.50
DISCCART	674840.08	4130681.12	1.50
DISCCART	674867.61	4130684.18	1.50
DISCCART	674866.08	4130701.51	1.50
DISCCART	674867.10	4130724.45	1.50
DISCCART	674864.55	4130741.78	1.50
DISCCART	674865.06	4130762.16	1.50
DISCCART	674865.06	4130780.00	1.50
DISCCART	674885.45	4130579.18	1.50
DISCCART	674884.43	4130560.32	1.50
DISCCART	674882.90	4130541.46	1.50

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   DISCCART    674884.94   4130523.11    1.50
   DISCCART    674883.41   4130502.72    1.50
   DISCCART    674884.94   4130484.88    1.50
   DISCCART    674886.58   4130467.51    1.50
   DISCCART    674883.41   4130449.71    1.50
   DISCCART    674888.00   4130430.34    1.50
   DISCCART    674889.52   4130410.46    1.50
   DISCCART    674841.61   4130418.11    1.50
   DISCCART    674823.77   4130419.13    1.50
   DISCCART    674804.40   4130418.11    1.50
   DISCCART    674788.09   4130414.54    1.50
   DISCCART    674767.70   4130421.68    1.50
   DISCCART    674759.55   4130448.18    1.50
   DISCCART    674764.14   4130467.04    1.50
   DISCCART    674761.59   4130488.96    1.50
   DISCCART    674761.59   4130511.90    1.50
   DISCCART    674730.49   4130496.60    1.50
   DISCCART    674732.53   4130476.73    1.50
   DISCCART    674732.53   4130456.85    1.50
   DISCCART    674736.61   4130431.87    1.50
   DISCCART    674720.81   4130417.09    1.50
   DISCCART    674696.34   4130417.09    1.50
   DISCCART    674681.56   4130432.38    1.50
   DISCCART    674685.13   4130460.92    1.50
   DISCCART    674685.13   4130481.82    1.50
   DISCCART    674805.42   4130537.89    1.50
   DISCCART    674806.44   4130520.05    1.50
   DISCCART    674804.91   4130499.66    1.50
   DISCCART    674807.46   4130479.78    1.50
   DISCCART    674807.46   4130461.94    1.50
   DISCCART    674839.57   4130462.96    1.50
   DISCCART    674839.06   4130481.31    1.50
   DISCCART    674840.59   4130501.19    1.50
   DISCCART    674838.55   4130520.56    1.50
   DISCCART    674838.04   4130537.89    1.50
   DISCCART    674837.53   4130556.75    1.50
   DISCCART    674837.53   4130599.57    1.50
   DISCCART    674836.51   4130615.88    1.50
   DISCCART    674838.55   4130633.21    1.50
   DISCCART    674803.89   4130626.07    1.50
   DISCCART    674790.13   4130619.44    1.50
   DISCCART    674771.78   4130614.86    1.50
   DISCCART    674758.53   4130606.19    1.50
   DISCCART    674741.71   4130592.94    1.50
   DISCCART    674724.38   4130585.29    1.50
   DISCCART    674708.07   4130577.65    1.50
   DISCCART    674688.19   4130569.49    1.50
   DISCCART    674699.91   4130533.81    1.50
   DISCCART    674717.75   4130537.38    1.50
   DISCCART    674734.06   4130545.54    1.50
   DISCCART    674747.83   4130554.20    1.50
   DISCCART    674764.14   4130565.42    1.50
   DISCCART    674778.92   4130574.08    1.50
   DISCCART    674793.70   4130583.77    1.50
   DISCCART    674811.03   4130592.94    1.50
   DISCCART    675072.73   4130258.80    1.50
   DISCCART    674940.23   4130133.85    1.50
   DISCCART    675285.22   4130214.63    1.50
   DISCCART    675331.78   4130318.49    1.50
   DISCCART    675280.05   4130310.93    1.50
   DISCCART    675120.88   4130138.23    1.50
   DISCCART    675316.65   4130699.29    1.50
   DISCCART    675317.85   4130712.42    1.50
   DISCCART    675317.45   4130723.96    1.50
   DISCCART    675315.86   4130760.57    1.50
   DISCCART    675316.65   4130774.49    1.50
   DISCCART    675317.85   4130785.63    1.50
   DISCCART    675342.52   4130696.50    1.50
   DISCCART    675361.22   4130696.50    1.50
   DISCCART    675381.51   4130699.68    1.50
   DISCCART    675393.85   4130701.67    1.50
   DISCCART    675422.10   4130700.48    1.50
   DISCCART    675436.82   4130700.48    1.50
   DISCCART    675459.11   4130699.68    1.50
   DISCCART    675473.83   4130699.68    1.50
   DISCCART    675479.40   4130717.59    1.50
   DISCCART    675477.81   4130729.13    1.50
   DISCCART    675479.00   4130741.47    1.50
   DISCCART    675477.81   4130756.59    1.50
   DISCCART    675477.81   4130766.53    1.50
   DISCCART    675479.80   4130779.67    1.50
   DISCCART    675479.00   4130795.58    1.50
   DISCCART    675472.64   4130804.73    1.50
   DISCCART    675467.07   4130815.48    1.50
   DISCCART    675448.36   4130813.89    1.50
   DISCCART    675436.03   4130813.89    1.50
   DISCCART    675411.36   4130813.49    1.50
   DISCCART    675391.86   4130813.09    1.50
   DISCCART    675083.88   4130318.09    1.50
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
```

```
ME STARTING
   SURFFILE "..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.SFC"
   PROFFILE "..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.PFL"
   SURFDATA 66666 2004
   UAIRDATA 66666 2004
   PROFBASE 42.0 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
** Auto-Generated Plotfiles
   PLOTFILE PERIOD ALL PRINCERD-CONST-2017.AD\PE00GALL.PLT 31
   SUMMFILE PrinceRd-Const-2017.sum
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************
```

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses RURAL Dispersion Only.

**Model Allows User-Specified Options:
1. Stack-tip Downwash.
2. Model Assumes Receptors on FLAT Terrain.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.

**Other Options Specified:
CCVR Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Accepts FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates PERIOD Averages Only

**This Run Includes: 1 Source(s); 1 Source Group(s); and 223 Receptor(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 14134

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 42.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Detailed Error/Message File: PrinceRd-Const-2017.err
**File for Summary of Results: PrinceRd-Const-2017.sum

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CON_DPM	0	0.19100E-06	675282.5	4130408.9	42.0	6.00	4	2.80	NO	HROFDY

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	CON_DPM ,

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = CON DPM ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.0000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.1000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.1000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.0000E+00	23	.00000E+00	24	.00000E+00

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(675257.0,	4130631.2,	42.0,	42.0,	1.5);	(675239.2,	4130633.2,	42.0,	42.0,	1.5);
(675218.3,	4130632.7,	42.0,	42.0,	1.5);	(675202.0,	4130633.7,	42.0,	42.0,	1.5);
(675183.1,	4130631.2,	42.0,	42.0,	1.5);	(675164.3,	4130632.7,	42.0,	42.0,	1.5);
(675143.9,	4130630.7,	42.0,	42.0,	1.5);	(675127.1,	4130632.7,	42.0,	42.0,	1.5);
(675105.6,	4130631.7,	42.0,	42.0,	1.5);	(675086.8,	4130630.7,	42.0,	42.0,	1.5);
(675068.9,	4130627.6,	42.0,	42.0,	1.5);	(675023.1,	4130626.1,	42.0,	42.0,	1.5);
(675003.7,	4130629.1,	42.0,	42.0,	1.5);	(674985.9,	4130629.1,	42.0,	42.0,	1.5);
(674967.0,	4130628.6,	42.0,	42.0,	1.5);	(674946.6,	4130628.1,	42.0,	42.0,	1.5);
(674927.2,	4130632.7,	42.0,	42.0,	1.5);	(674910.9,	4130634.2,	42.0,	42.0,	1.5);
(675251.4,	4130680.6,	42.0,	42.0,	1.5);	(675248.9,	4130696.9,	42.0,	42.0,	1.5);
(675251.4,	4130715.8,	42.0,	42.0,	1.5);	(675201.0,	4130678.1,	42.0,	42.0,	1.5);
(675208.6,	4130694.9,	42.0,	42.0,	1.5);	(675202.5,	4130714.8,	42.0,	42.0,	1.5);
(675170.9,	4130679.6,	42.0,	42.0,	1.5);	(675165.3,	4130695.9,	42.0,	42.0,	1.5);
(675168.3,	4130714.8,	42.0,	42.0,	1.5);	(675167.3,	4130731.1,	42.0,	42.0,	1.5);
(675168.3,	4130750.4,	42.0,	42.0,	1.5);	(675170.9,	4130767.3,	42.0,	42.0,	1.5);
(675166.8,	4130790.2,	42.0,	42.0,	1.5);	(675150.5,	4130802.9,	42.0,	42.0,	1.5);
(675128.6,	4130809.6,	42.0,	42.0,	1.5);	(675110.7,	4130806.5,	42.0,	42.0,	1.5);
(675090.4,	4130812.1,	42.0,	42.0,	1.5);	(675071.5,	4130813.1,	42.0,	42.0,	1.5);
(675049.6,	4130811.1,	42.0,	42.0,	1.5);	(675035.8,	4130795.3,	42.0,	42.0,	1.5);
(675034.3,	4130773.9,	42.0,	42.0,	1.5);	(675033.8,	4130753.0,	42.0,	42.0,	1.5);
(675117.9,	4130679.6,	42.0,	42.0,	1.5);	(675118.9,	4130698.4,	42.0,	42.0,	1.5);
(675116.4,	4130720.9,	42.0,	42.0,	1.5);	(675117.9,	4130739.7,	42.0,	42.0,	1.5);
(675114.8,	4130759.6,	42.0,	42.0,	1.5);	(675092.4,	4130762.2,	42.0,	42.0,	1.5);
(675091.4,	4130741.8,	42.0,	42.0,	1.5);	(675077.1,	4130719.9,	42.0,	42.0,	1.5);
(675057.7,	4130706.1,	42.0,	42.0,	1.5);	(675038.9,	4130706.1,	42.0,	42.0,	1.5);
(675018.5,	4130709.1,	42.0,	42.0,	1.5);	(675001.2,	4130708.1,	42.0,	42.0,	1.5);
(674982.3,	4130708.1,	42.0,	42.0,	1.5);	(674964.5,	4130707.1,	42.0,	42.0,	1.5);
(674946.1,	4130708.6,	42.0,	42.0,	1.5);	(674927.2,	4130711.2,	42.0,	42.0,	1.5);
(674907.9,	4130712.7,	42.0,	42.0,	1.5);	(674908.4,	4130684.2,	42.0,	42.0,	1.5);
(674927.2,	4130680.6,	42.0,	42.0,	1.5);	(674945.6,	4130678.1,	42.0,	42.0,	1.5);
(674963.9,	4130676.5,	42.0,	42.0,	1.5);	(674984.3,	4130675.5,	42.0,	42.0,	1.5);
(675001.7,	4130677.5,	42.0,	42.0,	1.5);	(675020.0,	4130676.5,	42.0,	42.0,	1.5);
(675039.4,	4130678.1,	42.0,	42.0,	1.5);	(675058.2,	4130677.5,	42.0,	42.0,	1.5);
(675073.5,	4130678.1,	42.0,	42.0,	1.5);	(675095.5,	4130678.1,	42.0,	42.0,	1.5);
(675259.1,	4130025.4,	42.0,	42.0,	1.5);	(675240.2,	4130028.4,	42.0,	42.0,	1.5);
(675218.3,	4130827.9,	42.0,	42.0,	1.5);	(675201.5,	4130827.9,	42.0,	42.0,	1.5);
(675181.1,	4130833.5,	42.0,	42.0,	1.5);	(675164.3,	4130835.0,	42.0,	42.0,	1.5);
(675144.9,	4130835.0,	42.0,	42.0,	1.5);	(675123.5,	4130835.0,	42.0,	42.0,	1.5);
(675105.1,	4130836.1,	42.0,	42.0,	1.5);	(675088.3,	4130836.1,	42.0,	42.0,	1.5);
(675064.4,	4130839.1,	42.0,	42.0,	1.5);	(674882.9,	4130823.8,	42.0,	42.0,	1.5);
(674865.6,	4130825.9,	42.0,	42.0,	1.5);	(674845.7,	4130827.9,	42.0,	42.0,	1.5);
(674830.9,	4130827.4,	42.0,	42.0,	1.5);	(674812.1,	4130827.9,	42.0,	42.0,	1.5);
(674787.1,	4130826.4,	42.0,	42.0,	1.5);	(674770.8,	4130826.4,	42.0,	42.0,	1.5);
(674751.4,	4130829.4,	42.0,	42.0,	1.5);	(674730.5,	4130830.0,	42.0,	42.0,	1.5);
(674716.7,	4130830.0,	42.0,	42.0,	1.5);	(674694.3,	4130828.4,	42.0,	42.0,	1.5);

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(674697.9,	4130783.1,	42.0,	42.0,	1.5);	(674714.2,	4130783.1,	42.0,	42.0,	1.5);
(674732.0,	4130783.6,	42.0,	42.0,	1.5);	(674750.9,	4130781.5,	42.0,	42.0,	1.5);
(674769.7,	4130781.5,	42.0,	42.0,	1.5);	(674787.1,	4130780.0,	42.0,	42.0,	1.5);
(674789.1,	4130750.9,	42.0,	42.0,	1.5);	(674772.8,	4130744.8,	42.0,	42.0,	1.5);
(674753.9,	4130740.2,	42.0,	42.0,	1.5);	(674736.6,	4130736.7,	42.0,	42.0,	1.5);
(674720.3,	4130731.1,	42.0,	42.0,	1.5);	(674695.8,	4130719.9,	42.0,	42.0,	1.5);
(674696.3,	4130738.2,	42.0,	42.0,	1.5);	(674695.8,	4130759.1,	42.0,	42.0,	1.5);
(674835.0,	4130784.6,	42.0,	42.0,	1.5);	(674834.0,	4130763.2,	42.0,	42.0,	1.5);
(674833.0,	4130746.9,	42.0,	42.0,	1.5);	(674835.5,	4130720.9,	42.0,	42.0,	1.5);
(674817.7,	4130708.1,	42.0,	42.0,	1.5);	(674795.7,	4130706.1,	42.0,	42.0,	1.5);
(674776.9,	4130704.6,	42.0,	42.0,	1.5);	(674758.0,	4130697.4,	42.0,	42.0,	1.5);
(674741.7,	4130690.8,	42.0,	42.0,	1.5);	(674725.4,	4130681.6,	42.0,	42.0,	1.5);
(674707.6,	4130678.6,	42.0,	42.0,	1.5);	(674694.8,	4130666.3,	42.0,	42.0,	1.5);
(674698.9,	4130623.5,	42.0,	42.0,	1.5);	(674717.8,	4130632.7,	42.0,	42.0,	1.5);
(674731.5,	4130645.9,	42.0,	42.0,	1.5);	(674747.8,	4130650.5,	42.0,	42.0,	1.5);
(674764.1,	4130662.8,	42.0,	42.0,	1.5);	(674781.5,	4130669.4,	42.0,	42.0,	1.5);
(674802.9,	4130676.5,	42.0,	42.0,	1.5);	(674819.2,	4130677.5,	42.0,	42.0,	1.5);
(674840.1,	4130681.1,	42.0,	42.0,	1.5);	(674867.6,	4130684.2,	42.0,	42.0,	1.5);
(674866.1,	4130701.5,	42.0,	42.0,	1.5);	(674867.1,	4130724.4,	42.0,	42.0,	1.5);
(674864.6,	4130741.8,	42.0,	42.0,	1.5);	(674865.1,	4130762.2,	42.0,	42.0,	1.5);
(674865.1,	4130780.0,	42.0,	42.0,	1.5);	(674885.5,	4130579.2,	42.0,	42.0,	1.5);
(674884.4,	4130560.3,	42.0,	42.0,	1.5);	(674882.9,	4130541.5,	42.0,	42.0,	1.5);
(674884.9,	4130523.1,	42.0,	42.0,	1.5);	(674883.4,	4130502.7,	42.0,	42.0,	1.5);
(674884.9,	4130484.9,	42.0,	42.0,	1.5);	(674886.6,	4130467.5,	42.0,	42.0,	1.5);
(674883.4,	4130449.7,	42.0,	42.0,	1.5);	(674888.0,	4130430.3,	42.0,	42.0,	1.5);
(674889.5,	4130410.5,	42.0,	42.0,	1.5);	(674841.6,	4130418.1,	42.0,	42.0,	1.5);
(674823.8,	4130419.1,	42.0,	42.0,	1.5);	(674804.4,	4130418.1,	42.0,	42.0,	1.5);
(674788.1,	4130414.5,	42.0,	42.0,	1.5);	(674767.7,	4130421.7,	42.0,	42.0,	1.5);
(674759.6,	4130448.2,	42.0,	42.0,	1.5);	(674764.1,	4130467.0,	42.0,	42.0,	1.5);
(674761.6,	4130489.0,	42.0,	42.0,	1.5);	(674761.6,	4130511.9,	42.0,	42.0,	1.5);
(674730.5,	4130496.6,	42.0,	42.0,	1.5);	(674732.5,	4130476.7,	42.0,	42.0,	1.5);
(674732.5,	4130456.8,	42.0,	42.0,	1.5);	(674736.6,	4130431.9,	42.0,	42.0,	1.5);
(674720.8,	4130417.1,	42.0,	42.0,	1.5);	(674696.3,	4130417.1,	42.0,	42.0,	1.5);
(674681.6,	4130432.4,	42.0,	42.0,	1.5);	(674685.1,	4130460.9,	42.0,	42.0,	1.5);
(674605.1,	4130481.0,	42.0,	42.0,	1.5);	(674005.4,	4130537.9,	42.0,	42.0,	1.5);
(674806.4,	4130520.0,	42.0,	42.0,	1.5);	(674804.9,	4130499.7,	42.0,	42.0,	1.5);
(674807.5,	4130479.8,	42.0,	42.0,	1.5);	(674807.5,	4130461.9,	42.0,	42.0,	1.5);
(674839.6,	4130463.0,	42.0,	42.0,	1.5);	(674839.1,	4130481.3,	42.0,	42.0,	1.5);
(674840.6,	4130501.2,	42.0,	42.0,	1.5);	(674838.6,	4130520.6,	42.0,	42.0,	1.5);
(674838.0,	4130537.9,	42.0,	42.0,	1.5);	(674837.5,	4130556.8,	42.0,	42.0,	1.5);
(674837.5,	4130599.6,	42.0,	42.0,	1.5);	(674836.5,	4130615.9,	42.0,	42.0,	1.5);
(674838.6,	4130633.2,	42.0,	42.0,	1.5);	(674803.9,	4130626.1,	42.0,	42.0,	1.5);
(674790.1,	4130619.4,	42.0,	42.0,	1.5);	(674771.8,	4130614.9,	42.0,	42.0,	1.5);
(674758.5,	4130606.2,	42.0,	42.0,	1.5);	(674741.7,	4130592.9,	42.0,	42.0,	1.5);
(674724.4,	4130585.3,	42.0,	42.0,	1.5);	(674708.1,	4130577.6,	42.0,	42.0,	1.5);

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	674688.2,	4130569.5,	42.0,	42.0,	1.5);	(674699.9,	4130533.8,	42.0,	42.0,	1.5);
(	674717.8,	4130537.4,	42.0,	42.0,	1.5);	(674734.1,	4130545.5,	42.0,	42.0,	1.5);
(	674747.8,	4130554.2,	42.0,	42.0,	1.5);	(674764.1,	4130565.4,	42.0,	42.0,	1.5);
(	674778.9,	4130574.1,	42.0,	42.0,	1.5);	(674793.7,	4130583.8,	42.0,	42.0,	1.5);
(	674811.0,	4130592.9,	42.0,	42.0,	1.5);	(675072.7,	4130258.8,	42.0,	42.0,	1.5);
(	674940.2,	4130133.8,	42.0,	42.0,	1.5);	(675285.2,	4130214.6,	42.0,	42.0,	1.5);
(	675331.8,	4130318.5,	42.0,	42.0,	1.5);	(675280.1,	4130310.9,	42.0,	42.0,	1.5);
(	675120.9,	4130138.2,	42.0,	42.0,	1.5);	(675316.7,	4130699.3,	42.0,	42.0,	1.5);
(	675317.9,	4130712.4,	42.0,	42.0,	1.5);	(675317.5,	4130724.0,	42.0,	42.0,	1.5);
(	675315.9,	4130760.6,	42.0,	42.0,	1.5);	(675316.7,	4130774.5,	42.0,	42.0,	1.5);
(	675317.9,	4130785.6,	42.0,	42.0,	1.5);	(675342.5,	4130696.5,	42.0,	42.0,	1.5);
(	675361.2,	4130696.5,	42.0,	42.0,	1.5);	(675381.5,	4130699.7,	42.0,	42.0,	1.5);
(	675393.9,	4130701.7,	42.0,	42.0,	1.5);	(675422.1,	4130700.5,	42.0,	42.0,	1.5);
(	675436.8,	4130700.5,	42.0,	42.0,	1.5);	(675459.1,	4130699.7,	42.0,	42.0,	1.5);
(	675473.8,	4130699.7,	42.0,	42.0,	1.5);	(675479.4,	4130717.6,	42.0,	42.0,	1.5);
(	675477.8,	4130729.1,	42.0,	42.0,	1.5);	(675479.0,	4130741.5,	42.0,	42.0,	1.5);
(	675477.8,	4130756.6,	42.0,	42.0,	1.5);	(675477.8,	4130766.5,	42.0,	42.0,	1.5);
(	675479.8,	4130779.7,	42.0,	42.0,	1.5);	(675479.0,	4130795.6,	42.0,	42.0,	1.5);
(	675472.6,	4130804.7,	42.0,	42.0,	1.5);	(675467.1,	4130815.5,	42.0,	42.0,	1.5);
(	675448.4,	4130813.9,	42.0,	42.0,	1.5);	(675436.0,	4130813.9,	42.0,	42.0,	1.5);
(	675411.4,	4130813.5,	42.0,	42.0,	1.5);	(675391.9,	4130813.1,	42.0,	42.0,	1.5);
(	675083.9,	4130318.1,	42.0,	42.0,	1.5);					

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

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1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
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1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
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NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.SFC Met Version: 14134
Profile file: ..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 66666 Upper air station no.: 66666
Name: UNKNOWN Name: UNKNOWN
Year: 2004 Year: 2004

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
04	01	01	1	01	-10.1	0.109	-9.000	-9.000	-999.	86.	11.4	0.05	0.65	1.00	3.10	121.	15.0	282.0	2.0
04	01	01	1	02	-9.8	0.106	-9.000	-9.000	-999.	83.	11.0	0.04	0.65	1.00	3.10	108.	15.0	281.9	2.0
04	01	01	1	03	-22.3	0.207	-9.000	-9.000	-999.	226.	35.7	0.04	0.65	1.00	4.10	104.	15.0	281.8	2.0
04	01	01	1	04	-26.8	0.258	-9.000	-9.000	-999.	315.	57.7	0.04	0.65	1.00	4.60	113.	15.0	281.6	2.0
04	01	01	1	05	-32.0	0.308	-9.000	-9.000	-999.	411.	82.5	0.05	0.65	1.00	5.10	123.	15.0	281.4	2.0
04	01	01	1	06	-35.5	0.360	-9.000	-9.000	-999.	517.	117.7	0.05	0.65	1.00	5.70	132.	15.0	281.2	2.0
04	01	01	1	07	-34.1	0.445	-9.000	-9.000	-999.	711.	231.6	0.05	0.65	1.00	6.70	135.	15.0	281.2	2.0
04	01	01	1	08	-29.3	0.524	-9.000	-9.000	-999.	910.	442.2	0.05	0.65	0.69	7.70	133.	15.0	281.0	2.0
04	01	01	1	09	-10.2	0.606	-9.000	-9.000	-999.	1131.	1959.4	0.05	0.65	0.38	8.70	127.	15.0	280.8	2.0
04	01	01	1	10	7.0	0.612	0.208	0.005	46.	1149.	-2954.0	0.05	0.65	0.27	8.70	131.	15.0	280.9	2.0
04	01	01	1	11	14.0	0.614	0.316	0.005	81.	1155.	-1490.1	0.05	0.65	0.23	8.70	134.	15.0	281.2	2.0
04	01	01	1	12	17.9	0.581	0.413	0.005	142.	1065.	-986.6	0.05	0.65	0.21	8.20	126.	15.0	281.8	2.0
04	01	01	1	13	59.7	0.558	0.797	0.005	305.	1001.	-261.4	0.05	0.65	0.21	7.70	123.	15.0	282.2	2.0
04	01	01	1	14	62.9	0.482	0.913	0.005	435.	809.	-159.8	0.04	0.65	0.22	6.70	109.	15.0	282.5	2.0
04	01	01	1	15	43.4	0.444	0.860	0.005	527.	712.	-181.1	0.04	0.65	0.25	6.20	112.	15.0	282.6	2.0
04	01	01	1	16	15.6	0.400	0.623	0.005	556.	610.	-369.5	0.04	0.65	0.34	5.70	114.	15.0	282.5	2.0
04	01	01	1	17	-17.7	0.236	-9.000	-9.000	-999.	295.	66.5	0.04	0.65	0.59	4.10	111.	15.0	282.6	2.0
04	01	01	1	18	-2.0	0.051	-9.000	-9.000	-999.	105.	5.9	0.04	0.65	1.00	1.50	87.	15.0	282.8	2.0
04	01	01	1	19	-11.3	0.123	-9.000	-9.000	-999.	104.	14.8	0.10	0.65	1.00	3.10	334.	15.0	282.4	2.0
04	01	01	1	20	-12.7	0.166	-9.000	-9.000	-999.	162.	32.2	0.09	0.65	1.00	3.10	327.	15.0	282.1	2.0
04	01	01	1	21	-8.0	0.103	-9.000	-9.000	-999.	80.	12.4	0.10	0.65	1.00	2.60	330.	15.0	281.9	2.0
04	01	01	1	22	-5.2	0.081	-9.000	-9.000	-999.	56.	9.4	0.09	0.65	1.00	2.10	302.	15.0	281.8	2.0
04	01	01	1	23	-5.5	0.083	-9.000	-9.000	-999.	57.	9.4	0.09	0.65	1.00	2.10	290.	15.0	281.2	2.0
04	01	01	1	24	-8.2	0.101	-9.000	-9.000	-999.	77.	11.3	0.09	0.65	1.00	2.60	300.	15.0	280.6	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
04	01	01	01	15.0	1	121.	3.10	282.1	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
675257.03	4130631.17	0.02825	675239.19	4130633.21	0.03203
675218.29	4130632.70	0.03829	675201.98	4130633.72	0.04049
675183.12	4130631.17	0.04683	675164.26	4130632.70	0.04717
675143.87	4130630.66	0.05173	675127.05	4130632.70	0.05019
675105.64	4130631.68	0.05248	675086.78	4130630.66	0.05432
675068.94	4130627.60	0.05869	675023.07	4130626.07	0.06023
675003.70	4130629.13	0.05570	674985.86	4130629.13	0.05511
674967.00	4130628.62	0.05496	674946.61	4130628.11	0.05460
674927.24	4130632.70	0.04952	674910.93	4130634.23	0.04782
675251.42	4130680.61	0.01073	675248.87	4130696.92	0.00857
675251.42	4130715.78	0.00681	675200.96	4130678.06	0.01366
675208.60	4130694.88	0.00970	675202.49	4130714.76	0.00736
675170.89	4130679.59	0.01551	675165.28	4130695.90	0.01174
675168.34	4130714.76	0.00849	675167.32	4130731.07	0.00678
675168.34	4130750.44	0.00537	675170.89	4130767.26	0.00450
675166.81	4130790.20	0.00377	675150.50	4130802.94	0.00359
675128.58	4130809.57	0.00366	675110.74	4130806.51	0.00401
675090.35	4130812.12	0.00416	675071.49	4130813.14	0.00446
675049.57	4130811.10	0.00498	675035.81	4130795.30	0.00610
675034.28	4130773.89	0.00758	675033.77	4130752.99	0.00946
675117.88	4130679.59	0.01923	675118.90	4130698.45	0.01389
675116.35	4130720.88	0.00998	675117.88	4130739.74	0.00770
675114.82	4130759.62	0.00617	675092.39	4130762.16	0.00668
675091.37	4130741.78	0.00851	675077.10	4130719.86	0.01196
675057.73	4130706.10	0.01534	675038.87	4130706.10	0.01615
675018.48	4130709.15	0.01634	675001.15	4130708.13	0.01716
674982.29	4130708.13	0.01777	674964.45	4130707.12	0.01848
674946.10	4130708.64	0.01864	674927.24	4130711.19	0.01859
674907.87	4130712.72	0.01872	674908.38	4130684.18	0.02500
674927.24	4130680.61	0.02574	674945.59	4130678.06	0.02622
674963.94	4130676.53	0.02636	674984.33	4130675.51	0.02623
675001.66	4130677.55	0.02507	675020.01	4130676.53	0.02485
675039.38	4130678.06	0.02364	675058.24	4130677.55	0.02306
675073.53	4130678.06	0.02219	675095.45	4130678.06	0.02108
675259.07	4130825.37	0.00286	675240.21	4130828.43	0.00280
675218.29	4130827.92	0.00282	675201.47	4130827.92	0.00285
675181.08	4130833.52	0.00282	675164.26	4130835.05	0.00285
675144.89	4130835.05	0.00295	675123.48	4130835.05	0.00311
675105.13	4130836.07	0.00326	675088.31	4130836.07	0.00345
675064.36	4130839.13	0.00369	674882.90	4130823.84	0.00780

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
674865.57	4130825.88	0.00798	674845.69	4130827.92	0.00817
674830.91	4130827.41	0.00840	674812.05	4130827.92	0.00860
674787.07	4130826.39	0.00895	674770.76	4130826.39	0.00907
674751.39	4130829.45	0.00901	674730.49	4130829.96	0.00903
674716.73	4130829.96	0.00902	674694.31	4130828.43	0.00900
674697.87	4130783.06	0.01096	674714.18	4130783.06	0.01121
674732.02	4130783.57	0.01141	674750.88	4130781.53	0.01170
674769.74	4130781.53	0.01179	674787.07	4130780.00	0.01191
674789.11	4130750.95	0.01429	674772.80	4130744.83	0.01461
674753.94	4130740.25	0.01457	674736.61	4130736.68	0.01433
674720.30	4130731.07	0.01411	674695.83	4130719.86	0.01366
674696.34	4130738.21	0.01293	674695.83	4130759.11	0.01200
674834.99	4130784.59	0.01122	674833.97	4130763.18	0.01310
674832.95	4130746.87	0.01478	674835.50	4130720.88	0.01801
674817.66	4130708.13	0.01954	674795.74	4130706.10	0.01907
674776.88	4130704.57	0.01840	674758.02	4130697.43	0.01799
674741.71	4130690.80	0.01743	674725.40	4130681.63	0.01681
674707.56	4130678.57	0.01573	674694.82	4130666.34	0.01519
674698.89	4130623.52	0.01591	674717.75	4130632.70	0.01749
674731.51	4130645.95	0.01853	674747.83	4130650.54	0.01998
674764.14	4130662.77	0.02096	674781.47	4130669.40	0.02211
674802.87	4130676.53	0.02322	674819.18	4130677.55	0.02435
674840.08	4130681.12	0.02496	674867.61	4130684.18	0.02511
674866.08	4130701.51	0.02132	674867.10	4130724.45	0.01742
674864.55	4130741.78	0.01510	674865.06	4130762.16	0.01283
674865.06	4130780.00	0.01118	674885.45	4130579.18	0.08913
674884.43	4130560.32	0.09510	674882.90	4130541.46	0.09659
674884.94	4130523.11	0.10322	674883.41	4130502.72	0.10031
674884.94	4130484.88	0.10252	674886.58	4130467.51	0.10357
674883.41	4130449.71	0.09125	674888.00	4130430.34	0.09311
674889.52	4130410.46	0.08192	674841.61	4130418.11	0.03385
674823.77	4130419.13	0.02713	674804.40	4130418.11	0.02200
674788.09	4130414.54	0.01871	674767.70	4130421.68	0.01648
674759.55	4130448.18	0.01726	674764.14	4130467.04	0.01920
674761.59	4130488.96	0.02032	674761.59	4130511.90	0.02169
674730.49	4130496.60	0.01658	674732.53	4130476.73	0.01583
674732.53	4130456.85	0.01483	674736.61	4130431.87	0.01395
674720.81	4130417.09	0.01212	674696.34	4130417.09	0.01073
674681.56	4130432.38	0.01049	674685.13	4130460.92	0.01153
674685.13	4130481.82	0.01220	674805.42	4130537.89	0.03343

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
674806.44	4130520.05	0.03310	674804.91	4130499.66	0.03121
674807.46	4130479.78	0.03014	674807.46	4130461.94	0.02806
674839.57	4130462.96	0.04231	674839.06	4130481.31	0.04489
674840.59	4130501.19	0.04805	674838.55	4130520.56	0.04785
674838.04	4130537.89	0.04775	674837.53	4130556.75	0.04683
674837.53	4130599.57	0.04213	674836.51	4130615.88	0.03893
674838.55	4130633.21	0.03592	674803.89	4130626.07	0.02937
674790.13	4130619.44	0.02728	674771.78	4130614.86	0.02439
674758.53	4130606.19	0.02262	674741.71	4130592.94	0.02043
674724.38	4130585.29	0.01832	674708.07	4130577.65	0.01653
674688.19	4130569.49	0.01464	674699.91	4130533.81	0.01492
674717.75	4130537.38	0.01675	674734.06	4130545.54	0.01890
674747.83	4130554.20	0.02101	674764.14	4130565.42	0.02384
674778.92	4130574.08	0.02668	674793.70	4130583.77	0.02978
674811.03	4130592.94	0.03384	675072.73	4130258.80	0.05265
674940.23	4130133.85	0.01312	675285.22	4130214.63	0.03844
675331.78	4130318.49	0.05494	675280.05	4130310.93	0.07112
675120.88	4130138.23	0.02703	675316.65	4130699.29	0.00900
675317.85	4130712.42	0.00779	675317.45	4130723.96	0.00690
675315.86	4130760.57	0.00488	675316.65	4130774.49	0.00435
675317.85	4130785.63	0.00400	675342.52	4130696.50	0.00965
675361.22	4130696.50	0.00992	675381.51	4130699.68	0.00986
675393.85	4130701.67	0.00981	675422.10	4130700.48	0.01028
675436.82	4130700.48	0.01043	675459.11	4130699.68	0.01071
675473.83	4130699.68	0.01082	675479.40	4130717.59	0.00930
675477.81	4130729.13	0.00840	675479.00	4130741.47	0.00757
675477.81	4130756.59	0.00664	675477.81	4130766.53	0.00611
675479.80	4130779.67	0.00550	675479.00	4130795.58	0.00483
675472.64	4130804.73	0.00445	675467.07	4130815.48	0.00406
675440.36	4130813.09	0.00398	675436.03	4130813.09	0.00389
675411.36	4130813.49	0.00375	675391.86	4130813.09	0.00365
675083.88	4130318.09	0.08897			

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.10357 AT (674886.58, 4130467.51, 42.00, 42.00, 1.50)	DC	
	2ND HIGHEST VALUE IS	0.10322 AT (674884.94, 4130523.11, 42.00, 42.00, 1.50)	DC	
	3RD HIGHEST VALUE IS	0.10252 AT (674884.94, 4130484.88, 42.00, 42.00, 1.50)	DC	
	4TH HIGHEST VALUE IS	0.10031 AT (674883.41, 4130502.72, 42.00, 42.00, 1.50)	DC	
	5TH HIGHEST VALUE IS	0.09659 AT (674882.90, 4130541.46, 42.00, 42.00, 1.50)	DC	
	6TH HIGHEST VALUE IS	0.09510 AT (674884.43, 4130560.32, 42.00, 42.00, 1.50)	DC	
	7TH HIGHEST VALUE IS	0.09311 AT (674888.00, 4130430.34, 42.00, 42.00, 1.50)	DC	
	8TH HIGHEST VALUE IS	0.09125 AT (674883.41, 4130449.71, 42.00, 42.00, 1.50)	DC	
	9TH HIGHEST VALUE IS	0.08913 AT (674885.45, 4130579.18, 42.00, 42.00, 1.50)	DC	
	10TH HIGHEST VALUE IS	0.08897 AT (675083.88, 4130318.09, 42.00, 42.00, 1.50)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 1808 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1808 Calm Hours Identified

A Total of 0 Missing Hours Identified (0.00 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** AERMOD Finishes Successfully ***
****

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**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 8.8.9
** Lakes Environmental Software Inc.
** Date: 8/4/2015
** File: C:\Projects1\I&R\Misc - Small\Prince Road-Newman\Model\PrinceRd-Const-2016-Mit.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE PrinceRd-2016 Construction DPM, Los Banos 2004-2008 Met Data
   TITLETWO Mitigated Emissions
   MODELOPT CONC FLAT
   AVERTIME PERIOD
   POLLUTID DPM
   FLAGPOLE 1.50
   RUNORNOT RUN
   ERRORFIL PrinceRd-Const-2016-Mit.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION CON_DPM      AREAPOLY   675282.508  4130408.910          0.0
** DESCRSRC 2016 Construction Area DPM
** Source Parameters **
   SRCPARAM CON_DPM       7.63E-08     6.000          4     2.800
   AREAVERT CON_DPM      675282.508 4130408.910 674903.557 4130401.930
   AREAVERT CON_DPM      674899.862 4130610.498 675278.403 4130618.709

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "7am-4pm"
   EMISFACT CON_DPM      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CON_DPM      HROFDY 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT CON_DPM      HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT CON_DPM      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
** DESCRREC "" ""
   DISCCART    675257.03   4130631.17    1.50
   DISCCART    675239.19   4130633.21    1.50
   DISCCART    675218.29   4130632.70    1.50
   DISCCART    675201.98   4130633.72    1.50
   DISCCART    675183.12   4130631.17    1.50
   DISCCART    675164.26   4130632.70    1.50
   DISCCART    675143.87   4130630.66    1.50
   DISCCART    675127.05   4130632.70    1.50
   DISCCART    675105.64   4130631.68    1.50
   DISCCART    675086.78   4130630.66    1.50
   DISCCART    675068.94   4130627.60    1.50
   DISCCART    675023.07   4130626.07    1.50
   DISCCART    675003.70   4130629.13    1.50
   DISCCART    674985.86   4130629.13    1.50
   DISCCART    674967.00   4130628.62    1.50
   DISCCART    674946.61   4130628.11    1.50
   DISCCART    674927.24   4130632.70    1.50
   DISCCART    674910.93   4130634.23    1.50
   DISCCART    675251.42   4130680.61    1.50
   DISCCART    675248.87   4130696.92    1.50
   DISCCART    675251.42   4130715.78    1.50
   DISCCART    675200.96   4130678.06    1.50
   DISCCART    675208.60   4130694.88    1.50
   DISCCART    675202.49   4130714.76    1.50
   DISCCART    675170.89   4130679.59    1.50
   DISCCART    675165.28   4130695.90    1.50
   DISCCART    675168.34   4130714.76    1.50
   DISCCART    675167.32   4130731.07    1.50
   DISCCART    675168.34   4130750.44    1.50
   DISCCART    675170.89   4130767.26    1.50
   DISCCART    675166.81   4130790.20    1.50
   DISCCART    675150.50   4130802.94    1.50
   DISCCART    675128.58   4130809.57    1.50
   DISCCART    675110.74   4130806.51    1.50
   DISCCART    675090.35   4130812.12    1.50
   DISCCART    675071.49   4130813.14    1.50
   DISCCART    675049.57   4130811.10    1.50
```

DISCCART	675035.81	4130795.30	1.50
DISCCART	675034.28	4130773.89	1.50
DISCCART	675033.77	4130752.99	1.50
DISCCART	675117.88	4130679.59	1.50
DISCCART	675118.90	4130698.45	1.50
DISCCART	675116.35	4130720.88	1.50
DISCCART	675117.88	4130739.74	1.50
DISCCART	675114.82	4130759.62	1.50
DISCCART	675092.39	4130762.16	1.50
DISCCART	675091.37	4130741.78	1.50
DISCCART	675077.10	4130719.86	1.50
DISCCART	675057.73	4130706.10	1.50
DISCCART	675038.87	4130706.10	1.50
DISCCART	675018.48	4130709.15	1.50
DISCCART	675001.15	4130708.13	1.50
DISCCART	674982.29	4130708.13	1.50
DISCCART	674964.45	4130707.12	1.50
DISCCART	674946.10	4130708.64	1.50
DISCCART	674927.24	4130711.19	1.50
DISCCART	674907.87	4130712.72	1.50
DISCCART	674908.38	4130684.18	1.50
DISCCART	674927.24	4130680.61	1.50
DISCCART	674945.59	4130678.06	1.50
DISCCART	674963.94	4130676.53	1.50
DISCCART	674984.33	4130675.51	1.50
DISCCART	675001.66	4130677.55	1.50
DISCCART	675020.01	4130676.53	1.50
DISCCART	675039.38	4130678.06	1.50
DISCCART	675058.24	4130677.55	1.50
DISCCART	675073.53	4130678.06	1.50
DISCCART	675095.45	4130678.06	1.50
DISCCART	675259.07	4130825.37	1.50
DISCCART	675240.21	4130828.43	1.50
DISCCART	675218.29	4130827.92	1.50
DISCCART	675201.47	4130827.92	1.50
DISCCART	675181.08	4130833.52	1.50
DISCCART	675164.26	4130835.05	1.50
DISCCART	675144.89	4130835.05	1.50
DISCCART	675123.48	4130835.05	1.50
DISCCART	675105.13	4130836.07	1.50
DISCCART	675088.31	4130836.07	1.50
DISCCART	675064.36	4130839.13	1.50
DISCCART	674882.90	4130823.84	1.50
DISCCART	674865.57	4130825.88	1.50
DISCCART	674845.69	4130827.92	1.50
DISCCART	674830.91	4130827.41	1.50
DISCCART	674812.05	4130827.92	1.50
DISCCART	674787.07	4130826.39	1.50
DISCCART	674770.76	4130826.39	1.50
DISCCART	674751.39	4130829.45	1.50
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DISCCART	674694.31	4130828.43	1.50
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DISCCART	674714.18	4130783.06	1.50
DISCCART	674732.02	4130783.57	1.50
DISCCART	674750.88	4130781.53	1.50
DISCCART	674769.74	4130781.53	1.50
DISCCART	674787.07	4130780.00	1.50
DISCCART	674789.11	4130750.95	1.50
DISCCART	674772.80	4130744.83	1.50
DISCCART	674753.94	4130740.25	1.50
DISCCART	674736.61	4130736.68	1.50
DISCCART	674720.30	4130731.07	1.50
DISCCART	674695.83	4130719.86	1.50
DISCCART	674696.34	4130738.21	1.50
DISCCART	674695.83	4130759.11	1.50
DISCCART	674834.99	4130784.59	1.50
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DISCCART	674832.95	4130746.87	1.50
DISCCART	674835.50	4130720.88	1.50
DISCCART	674817.66	4130708.13	1.50
DISCCART	674795.74	4130706.10	1.50
DISCCART	674776.88	4130704.57	1.50
DISCCART	674758.02	4130697.43	1.50
DISCCART	674741.71	4130690.80	1.50
DISCCART	674725.40	4130681.63	1.50
DISCCART	674707.56	4130678.57	1.50
DISCCART	674694.82	4130666.34	1.50
DISCCART	674698.89	4130623.52	1.50
DISCCART	674717.75	4130632.70	1.50
DISCCART	674731.51	4130645.95	1.50
DISCCART	674747.83	4130650.54	1.50
DISCCART	674764.14	4130662.77	1.50
DISCCART	674781.47	4130669.40	1.50
DISCCART	674802.87	4130676.53	1.50
DISCCART	674819.18	4130677.55	1.50
DISCCART	674840.08	4130681.12	1.50
DISCCART	674867.61	4130684.18	1.50
DISCCART	674866.08	4130701.51	1.50
DISCCART	674867.10	4130724.45	1.50
DISCCART	674864.55	4130741.78	1.50
DISCCART	674865.06	4130762.16	1.50
DISCCART	674865.06	4130780.00	1.50
DISCCART	674885.45	4130579.18	1.50
DISCCART	674884.43	4130560.32	1.50

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   DISCCART    674882.90   4130541.46    1.50
   DISCCART    674884.94   4130523.11    1.50
   DISCCART    674883.41   4130502.72    1.50
   DISCCART    674884.94   4130484.88    1.50
   DISCCART    674886.58   4130467.51    1.50
   DISCCART    674883.41   4130449.71    1.50
   DISCCART    674888.00   4130430.34    1.50
   DISCCART    674889.52   4130410.46    1.50
   DISCCART    674841.61   4130418.11    1.50
   DISCCART    674823.77   4130419.13    1.50
   DISCCART    674804.40   4130418.11    1.50
   DISCCART    674788.09   4130414.54    1.50
   DISCCART    674767.70   4130421.68    1.50
   DISCCART    674759.55   4130448.18    1.50
   DISCCART    674764.14   4130467.04    1.50
   DISCCART    674761.59   4130488.96    1.50
   DISCCART    674761.59   4130511.90    1.50
   DISCCART    674730.49   4130496.60    1.50
   DISCCART    674732.53   4130476.73    1.50
   DISCCART    674732.53   4130456.85    1.50
   DISCCART    674736.61   4130431.87    1.50
   DISCCART    674720.81   4130417.09    1.50
   DISCCART    674696.34   4130417.09    1.50
   DISCCART    674681.56   4130432.38    1.50
   DISCCART    674685.13   4130460.92    1.50
   DISCCART    674685.13   4130481.82    1.50
   DISCCART    674805.42   4130537.89    1.50
   DISCCART    674806.44   4130520.05    1.50
   DISCCART    674804.91   4130499.66    1.50
   DISCCART    674807.46   4130479.78    1.50
   DISCCART    674807.46   4130461.94    1.50
   DISCCART    674839.57   4130462.96    1.50
   DISCCART    674839.06   4130481.31    1.50
   DISCCART    674840.59   4130501.19    1.50
   DISCCART    674838.55   4130520.56    1.50
   DISCCART    674838.04   4130537.89    1.50
   DISCCART    674837.53   4130556.75    1.50
   DISCCART    674837.53   4130599.57    1.50
   DISCCART    674836.51   4130615.88    1.50
   DISCCART    674838.55   4130633.21    1.50
   DISCCART    674803.89   4130626.07    1.50
   DISCCART    674790.13   4130619.44    1.50
   DISCCART    674771.78   4130614.86    1.50
   DISCCART    674750.53   4130606.19    1.50
   DISCCART    674741.71   4130592.94    1.50
   DISCCART    674724.38   4130585.29    1.50
   DISCCART    674708.07   4130577.65    1.50
   DISCCART    674688.19   4130569.49    1.50
   DISCCART    674699.91   4130533.81    1.50
   DISCCART    674717.75   4130537.38    1.50
   DISCCART    674734.06   4130545.54    1.50
   DISCCART    674747.83   4130554.20    1.50
   DISCCART    674764.14   4130565.42    1.50
   DISCCART    674778.92   4130574.08    1.50
   DISCCART    674793.70   4130583.77    1.50
   DISCCART    674811.03   4130592.94    1.50
   DISCCART    675072.73   4130258.80    1.50
   DISCCART    674940.23   4130133.85    1.50
   DISCCART    675285.22   4130214.63    1.50
   DISCCART    675331.78   4130318.49    1.50
   DISCCART    675280.05   4130310.93    1.50
   DISCCART    675120.88   4130138.23    1.50
   DISCCART    675316.65   4130699.29    1.50
   DISCCART    675317.85   4130712.42    1.50
   DISCCART    675317.45   4130723.96    1.50
   DISCCART    675315.86   4130760.57    1.50
   DISCCART    675316.65   4130774.49    1.50
   DISCCART    675317.85   4130785.63    1.50
   DISCCART    675342.52   4130696.50    1.50
   DISCCART    675361.22   4130696.50    1.50
   DISCCART    675381.51   4130699.68    1.50
   DISCCART    675393.85   4130701.67    1.50
   DISCCART    675422.10   4130700.48    1.50
   DISCCART    675436.82   4130700.48    1.50
   DISCCART    675459.11   4130699.68    1.50
   DISCCART    675473.83   4130699.68    1.50
   DISCCART    675479.40   4130717.59    1.50
   DISCCART    675477.81   4130729.13    1.50
   DISCCART    675479.00   4130741.47    1.50
   DISCCART    675477.81   4130756.59    1.50
   DISCCART    675477.81   4130766.53    1.50
   DISCCART    675479.80   4130779.67    1.50
   DISCCART    675479.00   4130795.58    1.50
   DISCCART    675472.64   4130804.73    1.50
   DISCCART    675467.07   4130815.48    1.50
   DISCCART    675448.36   4130813.89    1.50
   DISCCART    675436.03   4130813.89    1.50
   DISCCART    675411.36   4130813.49    1.50
   DISCCART    675391.86   4130813.09    1.50
   DISCCART    675083.88   4130318.09    1.50
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
```

```
**
ME STARTING
   SURFFILE "..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.SFC"
   PROFFILE "..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.PFL"
   SURFDATA 66666 2004
   UAIRDATA 66666 2004
   PROFBASE 42.0 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
** Auto-Generated Plotfiles
   PLOTFILE PERIOD ALL PRINCERD-CONST-2016-MIT.AD\PE00GALL.PLT 31
   SUMMFILE PrinceRd-Const-2016-Mit.sum
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************
```

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses RURAL Dispersion Only.

**Model Allows User-Specified Options:
1. Stack-tip Downwash.
2. Model Assumes Receptors on FLAT Terrain.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.

**Other Options Specified:
CCVR Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Accepts FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates PERIOD Averages Only

**This Run Includes: 1 Source(s); 1 Source Group(s); and 223 Receptor(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 14134

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 42.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Detailed Error/Message File: PrinceRd-Const-2016-Mit.err
**File for Summary of Results: PrinceRd-Const-2016-Mit.sum

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CON_DPM	0	0.76300E-07	675282.5	4130408.9	42.0	6.00	4	2.80	NO	HROFDY

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	CON_DPM ,

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = CON DPM ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.0000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.1000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.1000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.0000E+00	23	.00000E+00	24	.00000E+00

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(675257.0,	4130631.2,	42.0,	42.0,	1.5);	(675239.2,	4130633.2,	42.0,	42.0,	1.5);
(675218.3,	4130632.7,	42.0,	42.0,	1.5);	(675202.0,	4130633.7,	42.0,	42.0,	1.5);
(675183.1,	4130631.2,	42.0,	42.0,	1.5);	(675164.3,	4130632.7,	42.0,	42.0,	1.5);
(675143.9,	4130630.7,	42.0,	42.0,	1.5);	(675127.1,	4130632.7,	42.0,	42.0,	1.5);
(675105.6,	4130631.7,	42.0,	42.0,	1.5);	(675086.8,	4130630.7,	42.0,	42.0,	1.5);
(675068.9,	4130627.6,	42.0,	42.0,	1.5);	(675023.1,	4130626.1,	42.0,	42.0,	1.5);
(675003.7,	4130629.1,	42.0,	42.0,	1.5);	(674985.9,	4130629.1,	42.0,	42.0,	1.5);
(674967.0,	4130628.6,	42.0,	42.0,	1.5);	(674946.6,	4130628.1,	42.0,	42.0,	1.5);
(674927.2,	4130632.7,	42.0,	42.0,	1.5);	(674910.9,	4130634.2,	42.0,	42.0,	1.5);
(675251.4,	4130680.6,	42.0,	42.0,	1.5);	(675248.9,	4130696.9,	42.0,	42.0,	1.5);
(675251.4,	4130715.8,	42.0,	42.0,	1.5);	(675201.0,	4130678.1,	42.0,	42.0,	1.5);
(675208.6,	4130694.9,	42.0,	42.0,	1.5);	(675202.5,	4130714.8,	42.0,	42.0,	1.5);
(675170.9,	4130679.6,	42.0,	42.0,	1.5);	(675165.3,	4130695.9,	42.0,	42.0,	1.5);
(675168.3,	4130714.8,	42.0,	42.0,	1.5);	(675167.3,	4130731.1,	42.0,	42.0,	1.5);
(675168.3,	4130750.4,	42.0,	42.0,	1.5);	(675170.9,	4130767.3,	42.0,	42.0,	1.5);
(675166.8,	4130790.2,	42.0,	42.0,	1.5);	(675150.5,	4130802.9,	42.0,	42.0,	1.5);
(675128.6,	4130809.6,	42.0,	42.0,	1.5);	(675110.7,	4130806.5,	42.0,	42.0,	1.5);
(675090.4,	4130812.1,	42.0,	42.0,	1.5);	(675071.5,	4130813.1,	42.0,	42.0,	1.5);
(675049.6,	4130811.1,	42.0,	42.0,	1.5);	(675035.8,	4130795.3,	42.0,	42.0,	1.5);
(675034.3,	4130773.9,	42.0,	42.0,	1.5);	(675033.8,	4130753.0,	42.0,	42.0,	1.5);
(675117.9,	4130679.6,	42.0,	42.0,	1.5);	(675118.9,	4130698.4,	42.0,	42.0,	1.5);
(675116.4,	4130720.9,	42.0,	42.0,	1.5);	(675117.9,	4130739.7,	42.0,	42.0,	1.5);
(675114.8,	4130759.6,	42.0,	42.0,	1.5);	(675092.4,	4130762.2,	42.0,	42.0,	1.5);
(675091.4,	4130741.8,	42.0,	42.0,	1.5);	(675077.1,	4130719.9,	42.0,	42.0,	1.5);
(675057.7,	4130706.1,	42.0,	42.0,	1.5);	(675038.9,	4130706.1,	42.0,	42.0,	1.5);
(675018.5,	4130709.1,	42.0,	42.0,	1.5);	(675001.2,	4130708.1,	42.0,	42.0,	1.5);
(674982.3,	4130708.1,	42.0,	42.0,	1.5);	(674964.5,	4130707.1,	42.0,	42.0,	1.5);
(674946.1,	4130708.6,	42.0,	42.0,	1.5);	(674927.2,	4130711.2,	42.0,	42.0,	1.5);
(674907.9,	4130712.7,	42.0,	42.0,	1.5);	(674908.4,	4130684.2,	42.0,	42.0,	1.5);
(674927.2,	4130680.6,	42.0,	42.0,	1.5);	(674945.6,	4130678.1,	42.0,	42.0,	1.5);
(674963.9,	4130676.5,	42.0,	42.0,	1.5);	(674984.3,	4130675.5,	42.0,	42.0,	1.5);
(675001.7,	4130677.5,	42.0,	42.0,	1.5);	(675020.0,	4130676.5,	42.0,	42.0,	1.5);
(675039.4,	4130678.1,	42.0,	42.0,	1.5);	(675058.2,	4130677.5,	42.0,	42.0,	1.5);
(675073.5,	4130678.1,	42.0,	42.0,	1.5);	(675095.5,	4130678.1,	42.0,	42.0,	1.5);
(675259.1,	4130025.4,	42.0,	42.0,	1.5);	(675240.2,	4130028.4,	42.0,	42.0,	1.5);
(675218.3,	4130827.9,	42.0,	42.0,	1.5);	(675201.5,	4130827.9,	42.0,	42.0,	1.5);
(675181.1,	4130833.5,	42.0,	42.0,	1.5);	(675164.3,	4130835.0,	42.0,	42.0,	1.5);
(675144.9,	4130835.0,	42.0,	42.0,	1.5);	(675123.5,	4130835.0,	42.0,	42.0,	1.5);
(675105.1,	4130836.1,	42.0,	42.0,	1.5);	(675088.3,	4130836.1,	42.0,	42.0,	1.5);
(675064.4,	4130839.1,	42.0,	42.0,	1.5);	(674882.9,	4130823.8,	42.0,	42.0,	1.5);
(674865.6,	4130825.9,	42.0,	42.0,	1.5);	(674845.7,	4130827.9,	42.0,	42.0,	1.5);
(674830.9,	4130827.4,	42.0,	42.0,	1.5);	(674812.1,	4130827.9,	42.0,	42.0,	1.5);
(674787.1,	4130826.4,	42.0,	42.0,	1.5);	(674770.8,	4130826.4,	42.0,	42.0,	1.5);
(674751.4,	4130829.4,	42.0,	42.0,	1.5);	(674730.5,	4130830.0,	42.0,	42.0,	1.5);
(674716.7,	4130830.0,	42.0,	42.0,	1.5);	(674694.3,	4130828.4,	42.0,	42.0,	1.5);

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(674697.9,	4130783.1,	42.0,	42.0,	1.5);	(674714.2,	4130783.1,	42.0,	42.0,	1.5);
(674732.0,	4130783.6,	42.0,	42.0,	1.5);	(674750.9,	4130781.5,	42.0,	42.0,	1.5);
(674769.7,	4130781.5,	42.0,	42.0,	1.5);	(674787.1,	4130780.0,	42.0,	42.0,	1.5);
(674789.1,	4130750.9,	42.0,	42.0,	1.5);	(674772.8,	4130744.8,	42.0,	42.0,	1.5);
(674753.9,	4130740.2,	42.0,	42.0,	1.5);	(674736.6,	4130736.7,	42.0,	42.0,	1.5);
(674720.3,	4130731.1,	42.0,	42.0,	1.5);	(674695.8,	4130719.9,	42.0,	42.0,	1.5);
(674696.3,	4130738.2,	42.0,	42.0,	1.5);	(674695.8,	4130759.1,	42.0,	42.0,	1.5);
(674835.0,	4130784.6,	42.0,	42.0,	1.5);	(674834.0,	4130763.2,	42.0,	42.0,	1.5);
(674833.0,	4130746.9,	42.0,	42.0,	1.5);	(674835.5,	4130720.9,	42.0,	42.0,	1.5);
(674817.7,	4130708.1,	42.0,	42.0,	1.5);	(674795.7,	4130706.1,	42.0,	42.0,	1.5);
(674776.9,	4130704.6,	42.0,	42.0,	1.5);	(674758.0,	4130697.4,	42.0,	42.0,	1.5);
(674741.7,	4130690.8,	42.0,	42.0,	1.5);	(674725.4,	4130681.6,	42.0,	42.0,	1.5);
(674707.6,	4130678.6,	42.0,	42.0,	1.5);	(674694.8,	4130666.3,	42.0,	42.0,	1.5);
(674698.9,	4130623.5,	42.0,	42.0,	1.5);	(674717.8,	4130632.7,	42.0,	42.0,	1.5);
(674731.5,	4130645.9,	42.0,	42.0,	1.5);	(674747.8,	4130650.5,	42.0,	42.0,	1.5);
(674764.1,	4130662.8,	42.0,	42.0,	1.5);	(674781.5,	4130669.4,	42.0,	42.0,	1.5);
(674802.9,	4130676.5,	42.0,	42.0,	1.5);	(674819.2,	4130677.5,	42.0,	42.0,	1.5);
(674840.1,	4130681.1,	42.0,	42.0,	1.5);	(674867.6,	4130684.2,	42.0,	42.0,	1.5);
(674866.1,	4130701.5,	42.0,	42.0,	1.5);	(674867.1,	4130724.4,	42.0,	42.0,	1.5);
(674864.6,	4130741.8,	42.0,	42.0,	1.5);	(674865.1,	4130762.2,	42.0,	42.0,	1.5);
(674865.1,	4130780.0,	42.0,	42.0,	1.5);	(674885.5,	4130579.2,	42.0,	42.0,	1.5);
(674884.4,	4130560.3,	42.0,	42.0,	1.5);	(674882.9,	4130541.5,	42.0,	42.0,	1.5);
(674884.9,	4130523.1,	42.0,	42.0,	1.5);	(674883.4,	4130502.7,	42.0,	42.0,	1.5);
(674884.9,	4130484.9,	42.0,	42.0,	1.5);	(674886.6,	4130467.5,	42.0,	42.0,	1.5);
(674883.4,	4130449.7,	42.0,	42.0,	1.5);	(674888.0,	4130430.3,	42.0,	42.0,	1.5);
(674889.5,	4130410.5,	42.0,	42.0,	1.5);	(674841.6,	4130418.1,	42.0,	42.0,	1.5);
(674823.8,	4130419.1,	42.0,	42.0,	1.5);	(674804.4,	4130418.1,	42.0,	42.0,	1.5);
(674788.1,	4130414.5,	42.0,	42.0,	1.5);	(674767.7,	4130421.7,	42.0,	42.0,	1.5);
(674759.6,	4130448.2,	42.0,	42.0,	1.5);	(674764.1,	4130467.0,	42.0,	42.0,	1.5);
(674761.6,	4130489.0,	42.0,	42.0,	1.5);	(674761.6,	4130511.9,	42.0,	42.0,	1.5);
(674730.5,	4130496.6,	42.0,	42.0,	1.5);	(674732.5,	4130476.7,	42.0,	42.0,	1.5);
(674732.5,	4130456.8,	42.0,	42.0,	1.5);	(674736.6,	4130431.9,	42.0,	42.0,	1.5);
(674720.8,	4130417.1,	42.0,	42.0,	1.5);	(674696.3,	4130417.1,	42.0,	42.0,	1.5);
(674681.6,	4130432.4,	42.0,	42.0,	1.5);	(674685.1,	4130460.9,	42.0,	42.0,	1.5);
(674605.1,	4130481.0,	42.0,	42.0,	1.5);	(674005.4,	4130537.9,	42.0,	42.0,	1.5);
(674806.4,	4130520.0,	42.0,	42.0,	1.5);	(674804.9,	4130499.7,	42.0,	42.0,	1.5);
(674807.5,	4130479.8,	42.0,	42.0,	1.5);	(674807.5,	4130461.9,	42.0,	42.0,	1.5);
(674839.6,	4130463.0,	42.0,	42.0,	1.5);	(674839.1,	4130481.3,	42.0,	42.0,	1.5);
(674840.6,	4130501.2,	42.0,	42.0,	1.5);	(674838.6,	4130520.6,	42.0,	42.0,	1.5);
(674838.0,	4130537.9,	42.0,	42.0,	1.5);	(674837.5,	4130556.8,	42.0,	42.0,	1.5);
(674837.5,	4130599.6,	42.0,	42.0,	1.5);	(674836.5,	4130615.9,	42.0,	42.0,	1.5);
(674838.6,	4130633.2,	42.0,	42.0,	1.5);	(674803.9,	4130626.1,	42.0,	42.0,	1.5);
(674790.1,	4130619.4,	42.0,	42.0,	1.5);	(674771.8,	4130614.9,	42.0,	42.0,	1.5);
(674758.5,	4130606.2,	42.0,	42.0,	1.5);	(674741.7,	4130592.9,	42.0,	42.0,	1.5);
(674724.4,	4130585.3,	42.0,	42.0,	1.5);	(674708.1,	4130577.6,	42.0,	42.0,	1.5);

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(674688.2,	4130569.5,	42.0,	42.0,	1.5);	(674699.9,	4130533.8,	42.0,	42.0,	1.5);
(674717.8,	4130537.4,	42.0,	42.0,	1.5);	(674734.1,	4130545.5,	42.0,	42.0,	1.5);
(674747.8,	4130554.2,	42.0,	42.0,	1.5);	(674764.1,	4130565.4,	42.0,	42.0,	1.5);
(674778.9,	4130574.1,	42.0,	42.0,	1.5);	(674793.7,	4130583.8,	42.0,	42.0,	1.5);
(674811.0,	4130592.9,	42.0,	42.0,	1.5);	(675072.7,	4130258.8,	42.0,	42.0,	1.5);
(674940.2,	4130133.8,	42.0,	42.0,	1.5);	(675285.2,	4130214.6,	42.0,	42.0,	1.5);
(675331.8,	4130318.5,	42.0,	42.0,	1.5);	(675280.1,	4130310.9,	42.0,	42.0,	1.5);
(675120.9,	4130138.2,	42.0,	42.0,	1.5);	(675316.7,	4130699.3,	42.0,	42.0,	1.5);
(675317.9,	4130712.4,	42.0,	42.0,	1.5);	(675317.5,	4130724.0,	42.0,	42.0,	1.5);
(675315.9,	4130760.6,	42.0,	42.0,	1.5);	(675316.7,	4130774.5,	42.0,	42.0,	1.5);
(675317.9,	4130785.6,	42.0,	42.0,	1.5);	(675342.5,	4130696.5,	42.0,	42.0,	1.5);
(675361.2,	4130696.5,	42.0,	42.0,	1.5);	(675381.5,	4130699.7,	42.0,	42.0,	1.5);
(675393.9,	4130701.7,	42.0,	42.0,	1.5);	(675422.1,	4130700.5,	42.0,	42.0,	1.5);
(675436.8,	4130700.5,	42.0,	42.0,	1.5);	(675459.1,	4130699.7,	42.0,	42.0,	1.5);
(675473.8,	4130699.7,	42.0,	42.0,	1.5);	(675479.4,	4130717.6,	42.0,	42.0,	1.5);
(675477.8,	4130729.1,	42.0,	42.0,	1.5);	(675479.0,	4130741.5,	42.0,	42.0,	1.5);
(675477.8,	4130756.6,	42.0,	42.0,	1.5);	(675477.8,	4130766.5,	42.0,	42.0,	1.5);
(675479.8,	4130779.7,	42.0,	42.0,	1.5);	(675479.0,	4130795.6,	42.0,	42.0,	1.5);
(675472.6,	4130804.7,	42.0,	42.0,	1.5);	(675467.1,	4130815.5,	42.0,	42.0,	1.5);
(675448.4,	4130813.9,	42.0,	42.0,	1.5);	(675436.0,	4130813.9,	42.0,	42.0,	1.5);
(675411.4,	4130813.5,	42.0,	42.0,	1.5);	(675391.9,	4130813.1,	42.0,	42.0,	1.5);
(675083.9,	4130318.1,	42.0,	42.0,	1.5);					

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

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1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
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NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.SFC Met Version: 14134
Profile file: ..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 66666 Upper air station no.: 66666
Name: UNKNOWN Name: UNKNOWN
Year: 2004 Year: 2004

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
04	01	01	1	01	-10.1	0.109	-9.000	-9.000	-999.	86.	11.4	0.05	0.65	1.00	3.10	121.	15.0	282.0	2.0
04	01	01	1	02	-9.8	0.106	-9.000	-9.000	-999.	83.	11.0	0.04	0.65	1.00	3.10	108.	15.0	281.9	2.0
04	01	01	1	03	-22.3	0.207	-9.000	-9.000	-999.	226.	35.7	0.04	0.65	1.00	4.10	104.	15.0	281.8	2.0
04	01	01	1	04	-26.8	0.258	-9.000	-9.000	-999.	315.	57.7	0.04	0.65	1.00	4.60	113.	15.0	281.6	2.0
04	01	01	1	05	-32.0	0.308	-9.000	-9.000	-999.	411.	82.5	0.05	0.65	1.00	5.10	123.	15.0	281.4	2.0
04	01	01	1	06	-35.5	0.360	-9.000	-9.000	-999.	517.	117.7	0.05	0.65	1.00	5.70	132.	15.0	281.2	2.0
04	01	01	1	07	-34.1	0.445	-9.000	-9.000	-999.	711.	231.6	0.05	0.65	1.00	6.70	135.	15.0	281.2	2.0
04	01	01	1	08	-29.3	0.524	-9.000	-9.000	-999.	910.	442.2	0.05	0.65	0.69	7.70	133.	15.0	281.0	2.0
04	01	01	1	09	-10.2	0.606	-9.000	-9.000	-999.	1131.	1959.4	0.05	0.65	0.38	8.70	127.	15.0	280.8	2.0
04	01	01	1	10	7.0	0.612	0.208	0.005	46.	1149.	-2954.0	0.05	0.65	0.27	8.70	131.	15.0	280.9	2.0
04	01	01	1	11	14.0	0.614	0.316	0.005	81.	1155.	-1490.1	0.05	0.65	0.23	8.70	134.	15.0	281.2	2.0
04	01	01	1	12	17.9	0.581	0.413	0.005	142.	1065.	-986.6	0.05	0.65	0.21	8.20	126.	15.0	281.8	2.0
04	01	01	1	13	59.7	0.558	0.797	0.005	305.	1001.	-261.4	0.05	0.65	0.21	7.70	123.	15.0	282.2	2.0
04	01	01	1	14	62.9	0.482	0.913	0.005	435.	809.	-159.8	0.04	0.65	0.22	6.70	109.	15.0	282.5	2.0
04	01	01	1	15	43.4	0.444	0.860	0.005	527.	712.	-181.1	0.04	0.65	0.25	6.20	112.	15.0	282.6	2.0
04	01	01	1	16	15.6	0.400	0.623	0.005	556.	610.	-369.5	0.04	0.65	0.34	5.70	114.	15.0	282.5	2.0
04	01	01	1	17	-17.7	0.236	-9.000	-9.000	-999.	295.	66.5	0.04	0.65	0.59	4.10	111.	15.0	282.6	2.0
04	01	01	1	18	-2.0	0.051	-9.000	-9.000	-999.	105.	5.9	0.04	0.65	1.00	1.50	87.	15.0	282.8	2.0
04	01	01	1	19	-11.3	0.123	-9.000	-9.000	-999.	104.	14.8	0.10	0.65	1.00	3.10	334.	15.0	282.4	2.0
04	01	01	1	20	-12.7	0.166	-9.000	-9.000	-999.	162.	32.2	0.09	0.65	1.00	3.10	327.	15.0	282.1	2.0
04	01	01	1	21	-8.0	0.103	-9.000	-9.000	-999.	80.	12.4	0.10	0.65	1.00	2.60	330.	15.0	281.9	2.0
04	01	01	1	22	-5.2	0.081	-9.000	-9.000	-999.	56.	9.4	0.09	0.65	1.00	2.10	302.	15.0	281.8	2.0
04	01	01	1	23	-5.5	0.083	-9.000	-9.000	-999.	57.	9.4	0.09	0.65	1.00	2.10	290.	15.0	281.2	2.0
04	01	01	1	24	-8.2	0.101	-9.000	-9.000	-999.	77.	11.3	0.09	0.65	1.00	2.60	300.	15.0	280.6	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
04	01	01	01	15.0	1	121.	3.10	282.1	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
675257.03	4130631.17	0.01128	675239.19	4130633.21	0.01280
675218.29	4130632.70	0.01530	675201.98	4130633.72	0.01618
675183.12	4130631.17	0.01871	675164.26	4130632.70	0.01884
675143.87	4130630.66	0.02067	675127.05	4130632.70	0.02005
675105.64	4130631.68	0.02097	675086.78	4130630.66	0.02170
675068.94	4130627.60	0.02345	675023.07	4130626.07	0.02406
675003.70	4130629.13	0.02225	674985.86	4130629.13	0.02202
674967.00	4130628.62	0.02195	674946.61	4130628.11	0.02181
674927.24	4130632.70	0.01978	674910.93	4130634.23	0.01910
675251.42	4130680.61	0.00428	675248.87	4130696.92	0.00342
675251.42	4130715.78	0.00272	675200.96	4130678.06	0.00546
675208.60	4130694.88	0.00387	675202.49	4130714.76	0.00294
675170.89	4130679.59	0.00620	675165.28	4130695.90	0.00469
675168.34	4130714.76	0.00339	675167.32	4130731.07	0.00271
675168.34	4130750.44	0.00214	675170.89	4130767.26	0.00180
675166.81	4130790.20	0.00151	675150.50	4130802.94	0.00143
675128.58	4130809.57	0.00146	675110.74	4130806.51	0.00160
675090.35	4130812.12	0.00166	675071.49	4130813.14	0.00178
675049.57	4130811.10	0.00199	675035.81	4130795.30	0.00244
675034.28	4130773.89	0.00303	675033.77	4130752.99	0.00378
675117.88	4130679.59	0.00768	675118.90	4130698.45	0.00555
675116.35	4130720.88	0.00399	675117.88	4130739.74	0.00307
675114.82	4130759.62	0.00247	675092.39	4130762.16	0.00267
675091.37	4130741.78	0.00340	675077.10	4130719.86	0.00478
675057.73	4130706.10	0.00613	675038.87	4130706.10	0.00645
675018.48	4130709.15	0.00653	675001.15	4130708.13	0.00686
674982.29	4130708.13	0.00710	674964.45	4130707.12	0.00738
674946.10	4130708.64	0.00745	674927.24	4130711.19	0.00742
674907.87	4130712.72	0.00748	674908.38	4130684.18	0.00999
674927.24	4130680.61	0.01028	674945.59	4130678.06	0.01047
674963.94	4130676.53	0.01053	674984.33	4130675.51	0.01048
675001.66	4130677.55	0.01001	675020.01	4130676.53	0.00993
675039.38	4130678.06	0.00944	675058.24	4130677.55	0.00921
675073.53	4130678.06	0.00887	675095.45	4130678.06	0.00842
675259.07	4130825.37	0.00114	675240.21	4130828.43	0.00112
675218.29	4130827.92	0.00113	675201.47	4130827.92	0.00114
675181.08	4130833.52	0.00113	675164.26	4130835.05	0.00114
675144.89	4130835.05	0.00118	675123.48	4130835.05	0.00124
675105.13	4130836.07	0.00130	675088.31	4130836.07	0.00138
675064.36	4130839.13	0.00148	674882.90	4130823.84	0.00312

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
674865.57	4130825.88	0.00319	674845.69	4130827.92	0.00326
674830.91	4130827.41	0.00336	674812.05	4130827.92	0.00344
674787.07	4130826.39	0.00357	674770.76	4130826.39	0.00362
674751.39	4130829.45	0.00360	674730.49	4130829.96	0.00361
674716.73	4130829.96	0.00360	674694.31	4130828.43	0.00359
674697.87	4130783.06	0.00438	674714.18	4130783.06	0.00448
674732.02	4130783.57	0.00456	674750.88	4130781.53	0.00467
674769.74	4130781.53	0.00471	674787.07	4130780.00	0.00476
674789.11	4130750.95	0.00571	674772.80	4130744.83	0.00584
674753.94	4130740.25	0.00582	674736.61	4130736.68	0.00572
674720.30	4130731.07	0.00564	674695.83	4130719.86	0.00546
674696.34	4130738.21	0.00516	674695.83	4130759.11	0.00479
674834.99	4130784.59	0.00448	674833.97	4130763.18	0.00523
674832.95	4130746.87	0.00590	674835.50	4130720.88	0.00719
674817.66	4130708.13	0.00781	674795.74	4130706.10	0.00762
674776.88	4130704.57	0.00735	674758.02	4130697.43	0.00719
674741.71	4130690.80	0.00696	674725.40	4130681.63	0.00672
674707.56	4130678.57	0.00629	674694.82	4130666.34	0.00607
674698.89	4130623.52	0.00635	674717.75	4130632.70	0.00699
674731.51	4130645.95	0.00740	674747.83	4130650.54	0.00798
674764.14	4130662.77	0.00837	674781.47	4130669.40	0.00883
674802.87	4130676.53	0.00928	674819.18	4130677.55	0.00973
674840.08	4130681.12	0.00997	674867.61	4130684.18	0.01003
674866.08	4130701.51	0.00852	674867.10	4130724.45	0.00696
674864.55	4130741.78	0.00603	674865.06	4130762.16	0.00512
674865.06	4130780.00	0.00447	674885.45	4130579.18	0.03561
674884.43	4130560.32	0.03799	674882.90	4130541.46	0.03859
674884.94	4130523.11	0.04123	674883.41	4130502.72	0.04007
674884.94	4130484.88	0.04096	674886.58	4130467.51	0.04137
674883.41	4130449.71	0.03645	674888.00	4130430.34	0.03720
674889.52	4130410.46	0.03273	674841.61	4130418.11	0.01352
674823.77	4130419.13	0.01084	674804.40	4130418.11	0.00879
674788.09	4130414.54	0.00747	674767.70	4130421.68	0.00659
674759.55	4130448.18	0.00690	674764.14	4130467.04	0.00767
674761.59	4130488.96	0.00812	674761.59	4130511.90	0.00867
674730.49	4130496.60	0.00662	674732.53	4130476.73	0.00632
674732.53	4130456.85	0.00592	674736.61	4130431.87	0.00557
674720.81	4130417.09	0.00484	674696.34	4130417.09	0.00429
674681.56	4130432.38	0.00419	674685.13	4130460.92	0.00461
674685.13	4130481.82	0.00487	674805.42	4130537.89	0.01336

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
674806.44	4130520.05	0.01322	674804.91	4130499.66	0.01247
674807.46	4130479.78	0.01204	674807.46	4130461.94	0.01121
674839.57	4130462.96	0.01690	674839.06	4130481.31	0.01793
674840.59	4130501.19	0.01919	674838.55	4130520.56	0.01912
674838.04	4130537.89	0.01907	674837.53	4130556.75	0.01871
674837.53	4130599.57	0.01683	674836.51	4130615.88	0.01555
674838.55	4130633.21	0.01435	674803.89	4130626.07	0.01173
674790.13	4130619.44	0.01090	674771.78	4130614.86	0.00974
674758.53	4130606.19	0.00903	674741.71	4130592.94	0.00816
674724.38	4130585.29	0.00732	674708.07	4130577.65	0.00660
674688.19	4130569.49	0.00585	674699.91	4130533.81	0.00596
674717.75	4130537.38	0.00669	674734.06	4130545.54	0.00755
674747.83	4130554.20	0.00839	674764.14	4130565.42	0.00952
674778.92	4130574.08	0.01066	674793.70	4130583.77	0.01190
674811.03	4130592.94	0.01352	675072.73	4130258.80	0.02103
674940.23	4130133.85	0.00524	675285.22	4130214.63	0.01535
675331.78	4130318.49	0.02195	675280.05	4130310.93	0.02841
675120.88	4130138.23	0.01080	675316.65	4130699.29	0.00360
675317.85	4130712.42	0.00311	675317.45	4130723.96	0.00276
675315.86	4130760.57	0.00195	675316.65	4130774.49	0.00174
675317.85	4130785.63	0.00160	675342.52	4130696.50	0.00386
675361.22	4130696.50	0.00396	675381.51	4130699.68	0.00394
675393.85	4130701.67	0.00392	675422.10	4130700.48	0.00411
675436.82	4130700.48	0.00417	675459.11	4130699.68	0.00428
675473.83	4130699.68	0.00432	675479.40	4130717.59	0.00372
675477.81	4130729.13	0.00336	675479.00	4130741.47	0.00302
675477.81	4130756.59	0.00265	675477.81	4130766.53	0.00244
675479.80	4130779.67	0.00220	675479.00	4130795.58	0.00193
675472.64	4130804.73	0.00178	675467.07	4130815.48	0.00162
675440.36	4130813.09	0.00159	675436.03	4130813.09	0.00156
675411.36	4130813.49	0.00150	675391.86	4130813.09	0.00146
675083.88	4130318.09	0.03554			

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.04137 AT	674886.58,	4130467.51,	42.00,	42.00,	1.50) DC	
	2ND HIGHEST VALUE IS	0.04123 AT	674884.94,	4130523.11,	42.00,	42.00,	1.50) DC	
	3RD HIGHEST VALUE IS	0.04096 AT	674884.94,	4130484.88,	42.00,	42.00,	1.50) DC	
	4TH HIGHEST VALUE IS	0.04007 AT	674883.41,	4130502.72,	42.00,	42.00,	1.50) DC	
	5TH HIGHEST VALUE IS	0.03859 AT	674882.90,	4130541.46,	42.00,	42.00,	1.50) DC	
	6TH HIGHEST VALUE IS	0.03799 AT	674884.43,	4130560.32,	42.00,	42.00,	1.50) DC	
	7TH HIGHEST VALUE IS	0.03720 AT	674888.00,	4130430.34,	42.00,	42.00,	1.50) DC	
	8TH HIGHEST VALUE IS	0.03645 AT	674883.41,	4130449.71,	42.00,	42.00,	1.50) DC	
	9TH HIGHEST VALUE IS	0.03561 AT	674885.45,	4130579.18,	42.00,	42.00,	1.50) DC	
	10TH HIGHEST VALUE IS	0.03554 AT	675083.88,	4130318.09,	42.00,	42.00,	1.50) DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 1808 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1808 Calm Hours Identified

A Total of 0 Missing Hours Identified (0.00 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** AERMOD Finishes Successfully ***
****

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**
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**
** AERMOD Input Produced by:
** AERMOD View Ver. 8.8.9
** Lakes Environmental Software Inc.
** Date: 8/4/2015
** File: C:\Projects1\I&R\Misc - Small\Prince Road-Newman\Model\PrinceRd-Const-2017-Mit.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE PrinceRd-2017 Construction DPM, Los Banos 2004-2008 Met Data
   TITLETWO Mitigated Emissions
   MODELOPT CONC FLAT
   AVERTIME PERIOD
   POLLUTID DPM
   FLAGPOLE 1.50
   RUNORNOT RUN
   ERRORFIL PrinceRd-Const-2017-Mit.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION CON_DPM      AREAPOLY   675282.508  4130408.910          0.0
** DESCRSRC 2017 Construction Area DPM
** Source Parameters **
   SRCPARAM CON_DPM        1.0E-07     6.000          4     2.800
   AREAVERT CON_DPM      675282.508 4130408.910 674903.557 4130401.930
   AREAVERT CON_DPM      674899.862 4130610.498 675278.403 4130618.709

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "7am-4pm"
   EMISFACT CON_DPM      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CON_DPM      HROFDY 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT CON_DPM      HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT CON_DPM      HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
** DESCRREC "" ""
   DISCCART    675257.03   4130631.17    1.50
   DISCCART    675239.19   4130633.21    1.50
   DISCCART    675218.29   4130632.70    1.50
   DISCCART    675201.98   4130633.72    1.50
   DISCCART    675183.12   4130631.17    1.50
   DISCCART    675164.26   4130632.70    1.50
   DISCCART    675143.87   4130630.66    1.50
   DISCCART    675127.05   4130632.70    1.50
   DISCCART    675105.64   4130631.68    1.50
   DISCCART    675086.78   4130630.66    1.50
   DISCCART    675068.94   4130627.60    1.50
   DISCCART    675023.07   4130626.07    1.50
   DISCCART    675003.70   4130629.13    1.50
   DISCCART    674985.86   4130629.13    1.50
   DISCCART    674967.00   4130628.62    1.50
   DISCCART    674946.61   4130628.11    1.50
   DISCCART    674927.24   4130632.70    1.50
   DISCCART    674910.93   4130634.23    1.50
   DISCCART    675251.42   4130680.61    1.50
   DISCCART    675248.87   4130696.92    1.50
   DISCCART    675251.42   4130715.78    1.50
   DISCCART    675200.96   4130678.06    1.50
   DISCCART    675208.60   4130694.88    1.50
   DISCCART    675202.49   4130714.76    1.50
   DISCCART    675170.89   4130679.59    1.50
   DISCCART    675165.28   4130695.90    1.50
   DISCCART    675168.34   4130714.76    1.50
   DISCCART    675167.32   4130731.07    1.50
   DISCCART    675168.34   4130750.44    1.50
   DISCCART    675170.89   4130767.26    1.50
   DISCCART    675166.81   4130790.20    1.50
   DISCCART    675150.50   4130802.94    1.50
   DISCCART    675128.58   4130809.57    1.50
   DISCCART    675110.74   4130806.51    1.50
   DISCCART    675090.35   4130812.12    1.50
   DISCCART    675071.49   4130813.14    1.50
   DISCCART    675049.57   4130811.10    1.50
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DISCCART	675035.81	4130795.30	1.50
DISCCART	675034.28	4130773.89	1.50
DISCCART	675033.77	4130752.99	1.50
DISCCART	675117.88	4130679.59	1.50
DISCCART	675118.90	4130698.45	1.50
DISCCART	675116.35	4130720.88	1.50
DISCCART	675117.88	4130739.74	1.50
DISCCART	675114.82	4130759.62	1.50
DISCCART	675092.39	4130762.16	1.50
DISCCART	675091.37	4130741.78	1.50
DISCCART	675077.10	4130719.86	1.50
DISCCART	675057.73	4130706.10	1.50
DISCCART	675038.87	4130706.10	1.50
DISCCART	675018.48	4130709.15	1.50
DISCCART	675001.15	4130708.13	1.50
DISCCART	674982.29	4130708.13	1.50
DISCCART	674964.45	4130707.12	1.50
DISCCART	674946.10	4130708.64	1.50
DISCCART	674927.24	4130711.19	1.50
DISCCART	674907.87	4130712.72	1.50
DISCCART	674908.38	4130684.18	1.50
DISCCART	674927.24	4130680.61	1.50
DISCCART	674945.59	4130678.06	1.50
DISCCART	674963.94	4130676.53	1.50
DISCCART	674984.33	4130675.51	1.50
DISCCART	675001.66	4130677.55	1.50
DISCCART	675020.01	4130676.53	1.50
DISCCART	675039.38	4130678.06	1.50
DISCCART	675058.24	4130677.55	1.50
DISCCART	675073.53	4130678.06	1.50
DISCCART	675095.45	4130678.06	1.50
DISCCART	675259.07	4130825.37	1.50
DISCCART	675240.21	4130828.43	1.50
DISCCART	675218.29	4130827.92	1.50
DISCCART	675201.47	4130827.92	1.50
DISCCART	675181.08	4130833.52	1.50
DISCCART	675164.26	4130835.05	1.50
DISCCART	675144.89	4130835.05	1.50
DISCCART	675123.48	4130835.05	1.50
DISCCART	675105.13	4130836.07	1.50
DISCCART	675088.31	4130836.07	1.50
DISCCART	675064.36	4130839.13	1.50
DISCCART	674882.90	4130823.84	1.50
DISCCART	674865.57	4130825.88	1.50
DISCCART	674845.69	4130827.92	1.50
DISCCART	674830.91	4130827.41	1.50
DISCCART	674812.05	4130827.92	1.50
DISCCART	674787.07	4130826.39	1.50
DISCCART	674770.76	4130826.39	1.50
DISCCART	674751.39	4130829.45	1.50
DISCCART	674730.49	4130829.96	1.50
DISCCART	674716.73	4130829.96	1.50
DISCCART	674694.31	4130828.43	1.50
DISCCART	674697.87	4130783.06	1.50
DISCCART	674714.18	4130783.06	1.50
DISCCART	674732.02	4130783.57	1.50
DISCCART	674750.88	4130781.53	1.50
DISCCART	674769.74	4130781.53	1.50
DISCCART	674787.07	4130780.00	1.50
DISCCART	674789.11	4130750.95	1.50
DISCCART	674772.80	4130744.83	1.50
DISCCART	674753.94	4130740.25	1.50
DISCCART	674736.61	4130736.68	1.50
DISCCART	674720.30	4130731.07	1.50
DISCCART	674695.83	4130719.86	1.50
DISCCART	674696.34	4130738.21	1.50
DISCCART	674695.83	4130759.11	1.50
DISCCART	674834.99	4130784.59	1.50
DISCCART	674833.97	4130763.18	1.50
DISCCART	674832.95	4130746.87	1.50
DISCCART	674835.50	4130720.88	1.50
DISCCART	674817.66	4130708.13	1.50
DISCCART	674795.74	4130706.10	1.50
DISCCART	674776.88	4130704.57	1.50
DISCCART	674758.02	4130697.43	1.50
DISCCART	674741.71	4130690.80	1.50
DISCCART	674725.40	4130681.63	1.50
DISCCART	674707.56	4130678.57	1.50
DISCCART	674694.82	4130666.34	1.50
DISCCART	674698.89	4130623.52	1.50
DISCCART	674717.75	4130632.70	1.50
DISCCART	674731.51	4130645.95	1.50
DISCCART	674747.83	4130650.54	1.50
DISCCART	674764.14	4130662.77	1.50
DISCCART	674781.47	4130669.40	1.50
DISCCART	674802.87	4130676.53	1.50
DISCCART	674819.18	4130677.55	1.50
DISCCART	674840.08	4130681.12	1.50
DISCCART	674867.61	4130684.18	1.50
DISCCART	674866.08	4130701.51	1.50
DISCCART	674867.10	4130724.45	1.50
DISCCART	674864.55	4130741.78	1.50
DISCCART	674865.06	4130762.16	1.50
DISCCART	674865.06	4130780.00	1.50
DISCCART	674885.45	4130579.18	1.50
DISCCART	674884.43	4130560.32	1.50

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   DISCCART    674882.90   4130541.46    1.50
   DISCCART    674884.94   4130523.11    1.50
   DISCCART    674883.41   4130502.72    1.50
   DISCCART    674884.94   4130484.88    1.50
   DISCCART    674886.58   4130467.51    1.50
   DISCCART    674883.41   4130449.71    1.50
   DISCCART    674888.00   4130430.34    1.50
   DISCCART    674889.52   4130410.46    1.50
   DISCCART    674841.61   4130418.11    1.50
   DISCCART    674823.77   4130419.13    1.50
   DISCCART    674804.40   4130418.11    1.50
   DISCCART    674788.09   4130414.54    1.50
   DISCCART    674767.70   4130421.68    1.50
   DISCCART    674759.55   4130448.18    1.50
   DISCCART    674764.14   4130467.04    1.50
   DISCCART    674761.59   4130488.96    1.50
   DISCCART    674761.59   4130511.90    1.50
   DISCCART    674730.49   4130496.60    1.50
   DISCCART    674732.53   4130476.73    1.50
   DISCCART    674732.53   4130456.85    1.50
   DISCCART    674736.61   4130431.87    1.50
   DISCCART    674720.81   4130417.09    1.50
   DISCCART    674696.34   4130417.09    1.50
   DISCCART    674681.56   4130432.38    1.50
   DISCCART    674685.13   4130460.92    1.50
   DISCCART    674685.13   4130481.82    1.50
   DISCCART    674805.42   4130537.89    1.50
   DISCCART    674806.44   4130520.05    1.50
   DISCCART    674804.91   4130499.66    1.50
   DISCCART    674807.46   4130479.78    1.50
   DISCCART    674807.46   4130461.94    1.50
   DISCCART    674839.57   4130462.96    1.50
   DISCCART    674839.06   4130481.31    1.50
   DISCCART    674840.59   4130501.19    1.50
   DISCCART    674838.55   4130520.56    1.50
   DISCCART    674838.04   4130537.89    1.50
   DISCCART    674837.53   4130556.75    1.50
   DISCCART    674837.53   4130599.57    1.50
   DISCCART    674836.51   4130615.88    1.50
   DISCCART    674838.55   4130633.21    1.50
   DISCCART    674803.89   4130626.07    1.50
   DISCCART    674790.13   4130619.44    1.50
   DISCCART    674771.78   4130614.86    1.50
   DISCCART    674750.53   4130606.19    1.50
   DISCCART    674741.71   4130592.94    1.50
   DISCCART    674724.38   4130585.29    1.50
   DISCCART    674708.07   4130577.65    1.50
   DISCCART    674688.19   4130569.49    1.50
   DISCCART    674699.91   4130533.81    1.50
   DISCCART    674717.75   4130537.38    1.50
   DISCCART    674734.06   4130545.54    1.50
   DISCCART    674747.83   4130554.20    1.50
   DISCCART    674764.14   4130565.42    1.50
   DISCCART    674778.92   4130574.08    1.50
   DISCCART    674793.70   4130583.77    1.50
   DISCCART    674811.03   4130592.94    1.50
   DISCCART    675072.73   4130258.80    1.50
   DISCCART    674940.23   4130133.85    1.50
   DISCCART    675285.22   4130214.63    1.50
   DISCCART    675331.78   4130318.49    1.50
   DISCCART    675280.05   4130310.93    1.50
   DISCCART    675120.88   4130138.23    1.50
   DISCCART    675316.65   4130699.29    1.50
   DISCCART    675317.85   4130712.42    1.50
   DISCCART    675317.45   4130723.96    1.50
   DISCCART    675315.86   4130760.57    1.50
   DISCCART    675316.65   4130774.49    1.50
   DISCCART    675317.85   4130785.63    1.50
   DISCCART    675342.52   4130696.50    1.50
   DISCCART    675361.22   4130696.50    1.50
   DISCCART    675381.51   4130699.68    1.50
   DISCCART    675393.85   4130701.67    1.50
   DISCCART    675422.10   4130700.48    1.50
   DISCCART    675436.82   4130700.48    1.50
   DISCCART    675459.11   4130699.68    1.50
   DISCCART    675473.83   4130699.68    1.50
   DISCCART    675479.40   4130717.59    1.50
   DISCCART    675477.81   4130729.13    1.50
   DISCCART    675479.00   4130741.47    1.50
   DISCCART    675477.81   4130756.59    1.50
   DISCCART    675477.81   4130766.53    1.50
   DISCCART    675479.80   4130779.67    1.50
   DISCCART    675479.00   4130795.58    1.50
   DISCCART    675472.64   4130804.73    1.50
   DISCCART    675467.07   4130815.48    1.50
   DISCCART    675448.36   4130813.89    1.50
   DISCCART    675436.03   4130813.89    1.50
   DISCCART    675411.36   4130813.49    1.50
   DISCCART    675391.86   4130813.09    1.50
   DISCCART    675083.88   4130318.09    1.50
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
```

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**
ME STARTING
   SURFFILE "..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.SFC"
   PROFFILE "..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.PFL"
   SURFDATA 66666 2004
   UAIRDATA 66666 2004
   PROFBASE 42.0 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
** Auto-Generated Plotfiles
   PLOTFILE PERIOD ALL PRINCERD-CONST-2017-MIT.AD\PE00GALL.PLT 31
   SUMMFILE PrinceRd-Const-2017-Mit.sum
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************
```

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses RURAL Dispersion Only.

**Model Allows User-Specified Options:
1. Stack-tip Downwash.
2. Model Assumes Receptors on FLAT Terrain.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.

**Other Options Specified:
CCVR Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Accepts FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates PERIOD Averages Only

**This Run Includes: 1 Source(s); 1 Source Group(s); and 223 Receptor(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 14134

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 42.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Detailed Error/Message File: PrinceRd-Const-2017-Mit.err
**File for Summary of Results: PrinceRd-Const-2017-Mit.sum

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CON_DPM	0	0.10000E-06	675282.5	4130408.9	42.0	6.00	4	2.80	NO	HROFDY

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	CON_DPM ,

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = CON DPM ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.0000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.1000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.1000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.0000E+00	23	.00000E+00	24	.00000E+00

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(675257.0,	4130631.2,	42.0,	42.0,	1.5);	(675239.2,	4130633.2,	42.0,	42.0,	1.5);
(675218.3,	4130632.7,	42.0,	42.0,	1.5);	(675202.0,	4130633.7,	42.0,	42.0,	1.5);
(675183.1,	4130631.2,	42.0,	42.0,	1.5);	(675164.3,	4130632.7,	42.0,	42.0,	1.5);
(675143.9,	4130630.7,	42.0,	42.0,	1.5);	(675127.1,	4130632.7,	42.0,	42.0,	1.5);
(675105.6,	4130631.7,	42.0,	42.0,	1.5);	(675086.8,	4130630.7,	42.0,	42.0,	1.5);
(675068.9,	4130627.6,	42.0,	42.0,	1.5);	(675023.1,	4130626.1,	42.0,	42.0,	1.5);
(675003.7,	4130629.1,	42.0,	42.0,	1.5);	(674985.9,	4130629.1,	42.0,	42.0,	1.5);
(674967.0,	4130628.6,	42.0,	42.0,	1.5);	(674946.6,	4130628.1,	42.0,	42.0,	1.5);
(674927.2,	4130632.7,	42.0,	42.0,	1.5);	(674910.9,	4130634.2,	42.0,	42.0,	1.5);
(675251.4,	4130680.6,	42.0,	42.0,	1.5);	(675248.9,	4130696.9,	42.0,	42.0,	1.5);
(675251.4,	4130715.8,	42.0,	42.0,	1.5);	(675201.0,	4130678.1,	42.0,	42.0,	1.5);
(675208.6,	4130694.9,	42.0,	42.0,	1.5);	(675202.5,	4130714.8,	42.0,	42.0,	1.5);
(675170.9,	4130679.6,	42.0,	42.0,	1.5);	(675165.3,	4130695.9,	42.0,	42.0,	1.5);
(675168.3,	4130714.8,	42.0,	42.0,	1.5);	(675167.3,	4130731.1,	42.0,	42.0,	1.5);
(675168.3,	4130750.4,	42.0,	42.0,	1.5);	(675170.9,	4130767.3,	42.0,	42.0,	1.5);
(675166.8,	4130790.2,	42.0,	42.0,	1.5);	(675150.5,	4130802.9,	42.0,	42.0,	1.5);
(675128.6,	4130809.6,	42.0,	42.0,	1.5);	(675110.7,	4130806.5,	42.0,	42.0,	1.5);
(675090.4,	4130812.1,	42.0,	42.0,	1.5);	(675071.5,	4130813.1,	42.0,	42.0,	1.5);
(675049.6,	4130811.1,	42.0,	42.0,	1.5);	(675035.8,	4130795.3,	42.0,	42.0,	1.5);
(675034.3,	4130773.9,	42.0,	42.0,	1.5);	(675033.8,	4130753.0,	42.0,	42.0,	1.5);
(675117.9,	4130679.6,	42.0,	42.0,	1.5);	(675118.9,	4130698.4,	42.0,	42.0,	1.5);
(675116.4,	4130720.9,	42.0,	42.0,	1.5);	(675117.9,	4130739.7,	42.0,	42.0,	1.5);
(675114.8,	4130759.6,	42.0,	42.0,	1.5);	(675092.4,	4130762.2,	42.0,	42.0,	1.5);
(675091.4,	4130741.8,	42.0,	42.0,	1.5);	(675077.1,	4130719.9,	42.0,	42.0,	1.5);
(675057.7,	4130706.1,	42.0,	42.0,	1.5);	(675038.9,	4130706.1,	42.0,	42.0,	1.5);
(675018.5,	4130709.1,	42.0,	42.0,	1.5);	(675001.2,	4130708.1,	42.0,	42.0,	1.5);
(674982.3,	4130708.1,	42.0,	42.0,	1.5);	(674964.5,	4130707.1,	42.0,	42.0,	1.5);
(674946.1,	4130708.6,	42.0,	42.0,	1.5);	(674927.2,	4130711.2,	42.0,	42.0,	1.5);
(674907.9,	4130712.7,	42.0,	42.0,	1.5);	(674908.4,	4130684.2,	42.0,	42.0,	1.5);
(674927.2,	4130680.6,	42.0,	42.0,	1.5);	(674945.6,	4130678.1,	42.0,	42.0,	1.5);
(674963.9,	4130676.5,	42.0,	42.0,	1.5);	(674984.3,	4130675.5,	42.0,	42.0,	1.5);
(675001.7,	4130677.5,	42.0,	42.0,	1.5);	(675020.0,	4130676.5,	42.0,	42.0,	1.5);
(675039.4,	4130678.1,	42.0,	42.0,	1.5);	(675058.2,	4130677.5,	42.0,	42.0,	1.5);
(675073.5,	4130678.1,	42.0,	42.0,	1.5);	(675095.5,	4130678.1,	42.0,	42.0,	1.5);
(675259.1,	4130025.4,	42.0,	42.0,	1.5);	(675240.2,	4130028.4,	42.0,	42.0,	1.5);
(675218.3,	4130827.9,	42.0,	42.0,	1.5);	(675201.5,	4130827.9,	42.0,	42.0,	1.5);
(675181.1,	4130833.5,	42.0,	42.0,	1.5);	(675164.3,	4130835.0,	42.0,	42.0,	1.5);
(675144.9,	4130835.0,	42.0,	42.0,	1.5);	(675123.5,	4130835.0,	42.0,	42.0,	1.5);
(675105.1,	4130836.1,	42.0,	42.0,	1.5);	(675088.3,	4130836.1,	42.0,	42.0,	1.5);
(675064.4,	4130839.1,	42.0,	42.0,	1.5);	(674882.9,	4130823.8,	42.0,	42.0,	1.5);
(674865.6,	4130825.9,	42.0,	42.0,	1.5);	(674845.7,	4130827.9,	42.0,	42.0,	1.5);
(674830.9,	4130827.4,	42.0,	42.0,	1.5);	(674812.1,	4130827.9,	42.0,	42.0,	1.5);
(674787.1,	4130826.4,	42.0,	42.0,	1.5);	(674770.8,	4130826.4,	42.0,	42.0,	1.5);
(674751.4,	4130829.4,	42.0,	42.0,	1.5);	(674730.5,	4130830.0,	42.0,	42.0,	1.5);
(674716.7,	4130830.0,	42.0,	42.0,	1.5);	(674694.3,	4130828.4,	42.0,	42.0,	1.5);

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(674697.9,	4130783.1,	42.0,	42.0,	1.5);	(674714.2,	4130783.1,	42.0,	42.0,	1.5);
(674732.0,	4130783.6,	42.0,	42.0,	1.5);	(674750.9,	4130781.5,	42.0,	42.0,	1.5);
(674769.7,	4130781.5,	42.0,	42.0,	1.5);	(674787.1,	4130780.0,	42.0,	42.0,	1.5);
(674789.1,	4130750.9,	42.0,	42.0,	1.5);	(674772.8,	4130744.8,	42.0,	42.0,	1.5);
(674753.9,	4130740.2,	42.0,	42.0,	1.5);	(674736.6,	4130736.7,	42.0,	42.0,	1.5);
(674720.3,	4130731.1,	42.0,	42.0,	1.5);	(674695.8,	4130719.9,	42.0,	42.0,	1.5);
(674696.3,	4130738.2,	42.0,	42.0,	1.5);	(674695.8,	4130759.1,	42.0,	42.0,	1.5);
(674835.0,	4130784.6,	42.0,	42.0,	1.5);	(674834.0,	4130763.2,	42.0,	42.0,	1.5);
(674833.0,	4130746.9,	42.0,	42.0,	1.5);	(674835.5,	4130720.9,	42.0,	42.0,	1.5);
(674817.7,	4130708.1,	42.0,	42.0,	1.5);	(674795.7,	4130706.1,	42.0,	42.0,	1.5);
(674776.9,	4130704.6,	42.0,	42.0,	1.5);	(674758.0,	4130697.4,	42.0,	42.0,	1.5);
(674741.7,	4130690.8,	42.0,	42.0,	1.5);	(674725.4,	4130681.6,	42.0,	42.0,	1.5);
(674707.6,	4130678.6,	42.0,	42.0,	1.5);	(674694.8,	4130666.3,	42.0,	42.0,	1.5);
(674698.9,	4130623.5,	42.0,	42.0,	1.5);	(674717.8,	4130632.7,	42.0,	42.0,	1.5);
(674731.5,	4130645.9,	42.0,	42.0,	1.5);	(674747.8,	4130650.5,	42.0,	42.0,	1.5);
(674764.1,	4130662.8,	42.0,	42.0,	1.5);	(674781.5,	4130669.4,	42.0,	42.0,	1.5);
(674802.9,	4130676.5,	42.0,	42.0,	1.5);	(674819.2,	4130677.5,	42.0,	42.0,	1.5);
(674840.1,	4130681.1,	42.0,	42.0,	1.5);	(674867.6,	4130684.2,	42.0,	42.0,	1.5);
(674866.1,	4130701.5,	42.0,	42.0,	1.5);	(674867.1,	4130724.4,	42.0,	42.0,	1.5);
(674864.6,	4130741.8,	42.0,	42.0,	1.5);	(674865.1,	4130762.2,	42.0,	42.0,	1.5);
(674865.1,	4130780.0,	42.0,	42.0,	1.5);	(674885.5,	4130579.2,	42.0,	42.0,	1.5);
(674884.4,	4130560.3,	42.0,	42.0,	1.5);	(674882.9,	4130541.5,	42.0,	42.0,	1.5);
(674884.9,	4130523.1,	42.0,	42.0,	1.5);	(674883.4,	4130502.7,	42.0,	42.0,	1.5);
(674884.9,	4130484.9,	42.0,	42.0,	1.5);	(674886.6,	4130467.5,	42.0,	42.0,	1.5);
(674883.4,	4130449.7,	42.0,	42.0,	1.5);	(674888.0,	4130430.3,	42.0,	42.0,	1.5);
(674889.5,	4130410.5,	42.0,	42.0,	1.5);	(674841.6,	4130418.1,	42.0,	42.0,	1.5);
(674823.8,	4130419.1,	42.0,	42.0,	1.5);	(674804.4,	4130418.1,	42.0,	42.0,	1.5);
(674788.1,	4130414.5,	42.0,	42.0,	1.5);	(674767.7,	4130421.7,	42.0,	42.0,	1.5);
(674759.6,	4130448.2,	42.0,	42.0,	1.5);	(674764.1,	4130467.0,	42.0,	42.0,	1.5);
(674761.6,	4130489.0,	42.0,	42.0,	1.5);	(674761.6,	4130511.9,	42.0,	42.0,	1.5);
(674730.5,	4130496.6,	42.0,	42.0,	1.5);	(674732.5,	4130476.7,	42.0,	42.0,	1.5);
(674732.5,	4130456.8,	42.0,	42.0,	1.5);	(674736.6,	4130431.9,	42.0,	42.0,	1.5);
(674720.8,	4130417.1,	42.0,	42.0,	1.5);	(674696.3,	4130417.1,	42.0,	42.0,	1.5);
(674681.6,	4130432.4,	42.0,	42.0,	1.5);	(674685.1,	4130460.9,	42.0,	42.0,	1.5);
(674605.1,	4130481.0,	42.0,	42.0,	1.5);	(674005.4,	4130537.9,	42.0,	42.0,	1.5);
(674806.4,	4130520.0,	42.0,	42.0,	1.5);	(674804.9,	4130499.7,	42.0,	42.0,	1.5);
(674807.5,	4130479.8,	42.0,	42.0,	1.5);	(674807.5,	4130461.9,	42.0,	42.0,	1.5);
(674839.6,	4130463.0,	42.0,	42.0,	1.5);	(674839.1,	4130481.3,	42.0,	42.0,	1.5);
(674840.6,	4130501.2,	42.0,	42.0,	1.5);	(674838.6,	4130520.6,	42.0,	42.0,	1.5);
(674838.0,	4130537.9,	42.0,	42.0,	1.5);	(674837.5,	4130556.8,	42.0,	42.0,	1.5);
(674837.5,	4130599.6,	42.0,	42.0,	1.5);	(674836.5,	4130615.9,	42.0,	42.0,	1.5);
(674838.6,	4130633.2,	42.0,	42.0,	1.5);	(674803.9,	4130626.1,	42.0,	42.0,	1.5);
(674790.1,	4130619.4,	42.0,	42.0,	1.5);	(674771.8,	4130614.9,	42.0,	42.0,	1.5);
(674758.5,	4130606.2,	42.0,	42.0,	1.5);	(674741.7,	4130592.9,	42.0,	42.0,	1.5);
(674724.4,	4130585.3,	42.0,	42.0,	1.5);	(674708.1,	4130577.6,	42.0,	42.0,	1.5);

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(674688.2,	4130569.5,	42.0,	42.0,	1.5);	(674699.9,	4130533.8,	42.0,	42.0,	1.5);
(674717.8,	4130537.4,	42.0,	42.0,	1.5);	(674734.1,	4130545.5,	42.0,	42.0,	1.5);
(674747.8,	4130554.2,	42.0,	42.0,	1.5);	(674764.1,	4130565.4,	42.0,	42.0,	1.5);
(674778.9,	4130574.1,	42.0,	42.0,	1.5);	(674793.7,	4130583.8,	42.0,	42.0,	1.5);
(674811.0,	4130592.9,	42.0,	42.0,	1.5);	(675072.7,	4130258.8,	42.0,	42.0,	1.5);
(674940.2,	4130133.8,	42.0,	42.0,	1.5);	(675285.2,	4130214.6,	42.0,	42.0,	1.5);
(675331.8,	4130318.5,	42.0,	42.0,	1.5);	(675280.1,	4130310.9,	42.0,	42.0,	1.5);
(675120.9,	4130138.2,	42.0,	42.0,	1.5);	(675316.7,	4130699.3,	42.0,	42.0,	1.5);
(675317.9,	4130712.4,	42.0,	42.0,	1.5);	(675317.5,	4130724.0,	42.0,	42.0,	1.5);
(675315.9,	4130760.6,	42.0,	42.0,	1.5);	(675316.7,	4130774.5,	42.0,	42.0,	1.5);
(675317.9,	4130785.6,	42.0,	42.0,	1.5);	(675342.5,	4130696.5,	42.0,	42.0,	1.5);
(675361.2,	4130696.5,	42.0,	42.0,	1.5);	(675381.5,	4130699.7,	42.0,	42.0,	1.5);
(675393.9,	4130701.7,	42.0,	42.0,	1.5);	(675422.1,	4130700.5,	42.0,	42.0,	1.5);
(675436.8,	4130700.5,	42.0,	42.0,	1.5);	(675459.1,	4130699.7,	42.0,	42.0,	1.5);
(675473.8,	4130699.7,	42.0,	42.0,	1.5);	(675479.4,	4130717.6,	42.0,	42.0,	1.5);
(675477.8,	4130729.1,	42.0,	42.0,	1.5);	(675479.0,	4130741.5,	42.0,	42.0,	1.5);
(675477.8,	4130756.6,	42.0,	42.0,	1.5);	(675477.8,	4130766.5,	42.0,	42.0,	1.5);
(675479.8,	4130779.7,	42.0,	42.0,	1.5);	(675479.0,	4130795.6,	42.0,	42.0,	1.5);
(675472.6,	4130804.7,	42.0,	42.0,	1.5);	(675467.1,	4130815.5,	42.0,	42.0,	1.5);
(675448.4,	4130813.9,	42.0,	42.0,	1.5);	(675436.0,	4130813.9,	42.0,	42.0,	1.5);
(675411.4,	4130813.5,	42.0,	42.0,	1.5);	(675391.9,	4130813.1,	42.0,	42.0,	1.5);
(675083.9,	4130318.1,	42.0,	42.0,	1.5);					

**MODELOPTs: NonDFAULT CONC   FLAT   FLGPOL

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

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1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1
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NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54,   3.09,   5.14,   8.23, 10.80,

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.SFC Met Version: 14134
Profile file: ..\..\..\Met Data\Los Banos-SJVAPCD\LosBan04-08.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 66666 Upper air station no.: 66666
Name: UNKNOWN Name: UNKNOWN
Year: 2004 Year: 2004

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
04	01	01	1	01	-10.1	0.109	-9.000	-9.000	-999.	86.	11.4	0.05	0.65	1.00	3.10	121.	15.0	282.0	2.0
04	01	01	1	02	-9.8	0.106	-9.000	-9.000	-999.	83.	11.0	0.04	0.65	1.00	3.10	108.	15.0	281.9	2.0
04	01	01	1	03	-22.3	0.207	-9.000	-9.000	-999.	226.	35.7	0.04	0.65	1.00	4.10	104.	15.0	281.8	2.0
04	01	01	1	04	-26.8	0.258	-9.000	-9.000	-999.	315.	57.7	0.04	0.65	1.00	4.60	113.	15.0	281.6	2.0
04	01	01	1	05	-32.0	0.308	-9.000	-9.000	-999.	411.	82.5	0.05	0.65	1.00	5.10	123.	15.0	281.4	2.0
04	01	01	1	06	-35.5	0.360	-9.000	-9.000	-999.	517.	117.7	0.05	0.65	1.00	5.70	132.	15.0	281.2	2.0
04	01	01	1	07	-34.1	0.445	-9.000	-9.000	-999.	711.	231.6	0.05	0.65	1.00	6.70	135.	15.0	281.2	2.0
04	01	01	1	08	-29.3	0.524	-9.000	-9.000	-999.	910.	442.2	0.05	0.65	0.69	7.70	133.	15.0	281.0	2.0
04	01	01	1	09	-10.2	0.606	-9.000	-9.000	-999.	1131.	1959.4	0.05	0.65	0.38	8.70	127.	15.0	280.8	2.0
04	01	01	1	10	7.0	0.612	0.208	0.005	46.	1149.	-2954.0	0.05	0.65	0.27	8.70	131.	15.0	280.9	2.0
04	01	01	1	11	14.0	0.614	0.316	0.005	81.	1155.	-1490.1	0.05	0.65	0.23	8.70	134.	15.0	281.2	2.0
04	01	01	1	12	17.9	0.581	0.413	0.005	142.	1065.	-986.6	0.05	0.65	0.21	8.20	126.	15.0	281.8	2.0
04	01	01	1	13	59.7	0.558	0.797	0.005	305.	1001.	-261.4	0.05	0.65	0.21	7.70	123.	15.0	282.2	2.0
04	01	01	1	14	62.9	0.482	0.913	0.005	435.	809.	-159.8	0.04	0.65	0.22	6.70	109.	15.0	282.5	2.0
04	01	01	1	15	43.4	0.444	0.860	0.005	527.	712.	-181.1	0.04	0.65	0.25	6.20	112.	15.0	282.6	2.0
04	01	01	1	16	15.6	0.400	0.623	0.005	556.	610.	-369.5	0.04	0.65	0.34	5.70	114.	15.0	282.5	2.0
04	01	01	1	17	-17.7	0.236	-9.000	-9.000	-999.	295.	66.5	0.04	0.65	0.59	4.10	111.	15.0	282.6	2.0
04	01	01	1	18	-2.0	0.051	-9.000	-9.000	-999.	105.	5.9	0.04	0.65	1.00	1.50	87.	15.0	282.8	2.0
04	01	01	1	19	-11.3	0.123	-9.000	-9.000	-999.	104.	14.8	0.10	0.65	1.00	3.10	334.	15.0	282.4	2.0
04	01	01	1	20	-12.7	0.166	-9.000	-9.000	-999.	162.	32.2	0.09	0.65	1.00	3.10	327.	15.0	282.1	2.0
04	01	01	1	21	-8.0	0.103	-9.000	-9.000	-999.	80.	12.4	0.10	0.65	1.00	2.60	330.	15.0	281.9	2.0
04	01	01	1	22	-5.2	0.081	-9.000	-9.000	-999.	56.	9.4	0.09	0.65	1.00	2.10	302.	15.0	281.8	2.0
04	01	01	1	23	-5.5	0.083	-9.000	-9.000	-999.	57.	9.4	0.09	0.65	1.00	2.10	290.	15.0	281.2	2.0
04	01	01	1	24	-8.2	0.101	-9.000	-9.000	-999.	77.	11.3	0.09	0.65	1.00	2.60	300.	15.0	280.6	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
04	01	01	01	15.0	1	121.	3.10	282.1	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
675257.03	4130631.17	0.01479	675239.19	4130633.21	0.01677
675218.29	4130632.70	0.02005	675201.98	4130633.72	0.02120
675183.12	4130631.17	0.02452	675164.26	4130632.70	0.02470
675143.87	4130630.66	0.02708	675127.05	4130632.70	0.02628
675105.64	4130631.68	0.02748	675086.78	4130630.66	0.02844
675068.94	4130627.60	0.03073	675023.07	4130626.07	0.03153
675003.70	4130629.13	0.02916	674985.86	4130629.13	0.02886
674967.00	4130628.62	0.02877	674946.61	4130628.11	0.02859
674927.24	4130632.70	0.02593	674910.93	4130634.23	0.02504
675251.42	4130680.61	0.00562	675248.87	4130696.92	0.00449
675251.42	4130715.78	0.00356	675200.96	4130678.06	0.00715
675208.60	4130694.88	0.00508	675202.49	4130714.76	0.00386
675170.89	4130679.59	0.00812	675165.28	4130695.90	0.00615
675168.34	4130714.76	0.00445	675167.32	4130731.07	0.00355
675168.34	4130750.44	0.00281	675170.89	4130767.26	0.00236
675166.81	4130790.20	0.00197	675150.50	4130802.94	0.00188
675128.58	4130809.57	0.00192	675110.74	4130806.51	0.00210
675090.35	4130812.12	0.00218	675071.49	4130813.14	0.00233
675049.57	4130811.10	0.00261	675035.81	4130795.30	0.00320
675034.28	4130773.89	0.00397	675033.77	4130752.99	0.00495
675117.88	4130679.59	0.01007	675118.90	4130698.45	0.00727
675116.35	4130720.88	0.00523	675117.88	4130739.74	0.00403
675114.82	4130759.62	0.00323	675092.39	4130762.16	0.00350
675091.37	4130741.78	0.00446	675077.10	4130719.86	0.00626
675057.73	4130706.10	0.00803	675038.87	4130706.10	0.00846
675018.48	4130709.15	0.00856	675001.15	4130708.13	0.00899
674982.29	4130708.13	0.00931	674964.45	4130707.12	0.00968
674946.10	4130708.64	0.00976	674927.24	4130711.19	0.00973
674907.87	4130712.72	0.00980	674908.38	4130684.18	0.01309
674927.24	4130680.61	0.01348	674945.59	4130678.06	0.01373
674963.94	4130676.53	0.01380	674984.33	4130675.51	0.01373
675001.66	4130677.55	0.01312	675020.01	4130676.53	0.01301
675039.38	4130678.06	0.01237	675058.24	4130677.55	0.01207
675073.53	4130678.06	0.01162	675095.45	4130678.06	0.01104
675259.07	4130825.37	0.00150	675240.21	4130828.43	0.00147
675218.29	4130827.92	0.00148	675201.47	4130827.92	0.00149
675181.08	4130833.52	0.00148	675164.26	4130835.05	0.00149
675144.89	4130835.05	0.00154	675123.48	4130835.05	0.00163
675105.13	4130836.07	0.00171	675088.31	4130836.07	0.00181
675064.36	4130839.13	0.00193	674882.90	4130823.84	0.00408

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
674865.57	4130825.88	0.00418	674845.69	4130827.92	0.00428
674830.91	4130827.41	0.00440	674812.05	4130827.92	0.00451
674787.07	4130826.39	0.00468	674770.76	4130826.39	0.00475
674751.39	4130829.45	0.00472	674730.49	4130829.96	0.00473
674716.73	4130829.96	0.00472	674694.31	4130828.43	0.00471
674697.87	4130783.06	0.00574	674714.18	4130783.06	0.00587
674732.02	4130783.57	0.00597	674750.88	4130781.53	0.00613
674769.74	4130781.53	0.00617	674787.07	4130780.00	0.00624
674789.11	4130750.95	0.00748	674772.80	4130744.83	0.00765
674753.94	4130740.25	0.00763	674736.61	4130736.68	0.00750
674720.30	4130731.07	0.00739	674695.83	4130719.86	0.00715
674696.34	4130738.21	0.00677	674695.83	4130759.11	0.00628
674834.99	4130784.59	0.00587	674833.97	4130763.18	0.00686
674832.95	4130746.87	0.00774	674835.50	4130720.88	0.00943
674817.66	4130708.13	0.01023	674795.74	4130706.10	0.00999
674776.88	4130704.57	0.00963	674758.02	4130697.43	0.00942
674741.71	4130690.80	0.00913	674725.40	4130681.63	0.00880
674707.56	4130678.57	0.00824	674694.82	4130666.34	0.00795
674698.89	4130623.52	0.00833	674717.75	4130632.70	0.00916
674731.51	4130645.95	0.00970	674747.83	4130650.54	0.01046
674764.14	4130662.77	0.01097	674781.47	4130669.40	0.01158
674802.87	4130676.53	0.01216	674819.18	4130677.55	0.01275
674840.08	4130681.12	0.01307	674867.61	4130684.18	0.01315
674866.08	4130701.51	0.01116	674867.10	4130724.45	0.00912
674864.55	4130741.78	0.00791	674865.06	4130762.16	0.00672
674865.06	4130780.00	0.00586	674885.45	4130579.18	0.04667
674884.43	4130560.32	0.04979	674882.90	4130541.46	0.05057
674884.94	4130523.11	0.05404	674883.41	4130502.72	0.05252
674884.94	4130484.88	0.05368	674886.58	4130467.51	0.05423
674883.41	4130449.71	0.04777	674888.00	4130430.34	0.04875
674889.52	4130410.46	0.04289	674841.61	4130418.11	0.01772
674823.77	4130419.13	0.01420	674804.40	4130418.11	0.01152
674788.09	4130414.54	0.00979	674767.70	4130421.68	0.00863
674759.55	4130448.18	0.00904	674764.14	4130467.04	0.01005
674761.59	4130488.96	0.01064	674761.59	4130511.90	0.01136
674730.49	4130496.60	0.00868	674732.53	4130476.73	0.00829
674732.53	4130456.85	0.00776	674736.61	4130431.87	0.00730
674720.81	4130417.09	0.00635	674696.34	4130417.09	0.00562
674681.56	4130432.38	0.00549	674685.13	4130460.92	0.00604
674685.13	4130481.82	0.00639	674805.42	4130537.89	0.01750

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CON_DPM ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
674806.44	4130520.05	0.01733	674804.91	4130499.66	0.01634
674807.46	4130479.78	0.01578	674807.46	4130461.94	0.01469
674839.57	4130462.96	0.02215	674839.06	4130481.31	0.02350
674840.59	4130501.19	0.02516	674838.55	4130520.56	0.02505
674838.04	4130537.89	0.02500	674837.53	4130556.75	0.02452
674837.53	4130599.57	0.02206	674836.51	4130615.88	0.02038
674838.55	4130633.21	0.01881	674803.89	4130626.07	0.01538
674790.13	4130619.44	0.01428	674771.78	4130614.86	0.01277
674758.53	4130606.19	0.01184	674741.71	4130592.94	0.01070
674724.38	4130585.29	0.00959	674708.07	4130577.65	0.00866
674688.19	4130569.49	0.00766	674699.91	4130533.81	0.00781
674717.75	4130537.38	0.00877	674734.06	4130545.54	0.00989
674747.83	4130554.20	0.01100	674764.14	4130565.42	0.01248
674778.92	4130574.08	0.01397	674793.70	4130583.77	0.01559
674811.03	4130592.94	0.01772	675072.73	4130258.80	0.02757
674940.23	4130133.85	0.00687	675285.22	4130214.63	0.02012
675331.78	4130318.49	0.02877	675280.05	4130310.93	0.03724
675120.88	4130138.23	0.01415	675316.65	4130699.29	0.00471
675317.85	4130712.42	0.00408	675317.45	4130723.96	0.00361
675315.86	4130760.57	0.00255	675316.65	4130774.49	0.00228
675317.85	4130785.63	0.00210	675342.52	4130696.50	0.00505
675361.22	4130696.50	0.00519	675381.51	4130699.68	0.00516
675393.85	4130701.67	0.00514	675422.10	4130700.48	0.00538
675436.82	4130700.48	0.00546	675459.11	4130699.68	0.00561
675473.83	4130699.68	0.00567	675479.40	4130717.59	0.00487
675477.81	4130729.13	0.00440	675479.00	4130741.47	0.00396
675477.81	4130756.59	0.00348	675477.81	4130766.53	0.00320
675479.80	4130779.67	0.00288	675479.00	4130795.58	0.00253
675472.64	4130804.73	0.00233	675467.07	4130815.48	0.00212
675440.36	4130813.09	0.00208	675436.03	4130813.09	0.00204
675411.36	4130813.49	0.00196	675391.86	4130813.09	0.00191
675083.88	4130318.09	0.04658			

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.05423 AT (674886.58, 4130467.51, 42.00, 42.00, 1.50)	DC	
	2ND HIGHEST VALUE IS	0.05404 AT (674884.94, 4130523.11, 42.00, 42.00, 1.50)	DC	
	3RD HIGHEST VALUE IS	0.05368 AT (674884.94, 4130484.88, 42.00, 42.00, 1.50)	DC	
	4TH HIGHEST VALUE IS	0.05252 AT (674883.41, 4130502.72, 42.00, 42.00, 1.50)	DC	
	5TH HIGHEST VALUE IS	0.05057 AT (674882.90, 4130541.46, 42.00, 42.00, 1.50)	DC	
	6TH HIGHEST VALUE IS	0.04979 AT (674884.43, 4130560.32, 42.00, 42.00, 1.50)	DC	
	7TH HIGHEST VALUE IS	0.04875 AT (674888.00, 4130430.34, 42.00, 42.00, 1.50)	DC	
	8TH HIGHEST VALUE IS	0.04777 AT (674883.41, 4130449.71, 42.00, 42.00, 1.50)	DC	
	9TH HIGHEST VALUE IS	0.04667 AT (674885.45, 4130579.18, 42.00, 42.00, 1.50)	DC	
	10TH HIGHEST VALUE IS	0.04658 AT (675083.88, 4130318.09, 42.00, 42.00, 1.50)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: NonDFAULT CONC FLAT FLGPOL

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 1808 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1808 Calm Hours Identified

A Total of 0 Missing Hours Identified (0.00 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** AERMOD Finishes Successfully ***
****

WRA Biological Resources Assessment

D

APPENDIX

Biological Resources Assessment
Prince Road Residential Subdivision Project

CITY OF NEWMAN, STANISLAUS COUNTY, CALIFORNIA

Prepared For:
City of Newman
Planning Division
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Newman, California 95360
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Date:

October 2015

ENVIRONMENTAL CONSULTANTS

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LIST OF ACRONYMS

CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
ESA	Federal Endangered Species Act
Inventory	CNPS Inventory of Rare and Endangered Plants
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality Control Board
USFWS	U.S. Fish and Wildlife Service
WRA	WRA, Inc.

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EXECUTIVE SUMMARY

The purpose of this report is to provide an analysis of natural community and special-status species issues at the proposed Prince Road Subdivision (Project Area) in unincorporated Stanislaus County, California.

On December 17, 2014, WRA, Inc. (WRA) conducted a biological resources assessment within the Project Area. The majority of the Project Area is composed of ruderal grassland and developed areas, which are not considered a sensitive habitat under CEQA. No sensitive biological communities were identified. Based upon a review of the resources and databases given in Section 3.2.1 (CDFW 2014, CNPS 2014), a 9-Quad search of the USGS 7.5 minute Quadrangles surrounding the Project Area showed that 21 special-status plant species have been documented in the vicinity of the Project Area. All 21 of these species are unlikely or have no potential to occur in the Project Area because of lack of suitable hydrology, edaphic conditions, topographic position, and associated vegetation communities. In addition, 31 special-status wildlife species have been documented in the area. Of these, only five have a moderate potential to occur in the Project Area: Swainson's hawk, white-tailed kite, loggerhead shrike, pallid bat, and Yuma myotis.

Avoidance measures including pre-construction surveys, exclusion, and mitigation for loss of roost habitat if appropriate. Accordingly, all potential impacts to sensitive biological resources will be avoided or mitigated for the project.

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1 INTRODUCTION

On December 17, 2014, WRA performed an assessment of biological resources at the 20.24-acre proposed Prince Road Subdivision (Project Area) in Newman, California (**Error! Reference source not found.**). The purpose of the assessment was to gather information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA). The Project Area is located in the San Joaquin Valley at the southern edge of Newman, California. The surrounding area is otherwise farmland. To get to the Project Area from Interstate Highway 5, travel east on State Highway 140 toward Gustine for approximately 3 miles, then travel north on Whitworth Road for approximately 2.5 miles, east on West Sanchez Road for approximately 0.5 mile, and north on Prince Road for approximately 0.5 mile, and the Project Area will be to the west.

This report describes the results of the site visit, which assessed the Project Area for the (1) potential to support special-status species; and (2) presence of other sensitive biological resources protected by local, state, and federal laws and regulations. If special-status species were observed during the site visit, they were recorded. Specific findings on the habitat suitability or presence of special-status species or sensitive habitats may require that protocol-level surveys be conducted. This report also contains an evaluation of potential impacts to special-status species and sensitive biological resources that may occur as a result of the proposed project and potential mitigation measures to compensate for those impacts.

A biological resources assessment provides general information on the potential presence of sensitive species and habitats. The biological assessment is not an official protocol-level survey for listed species that may be required for project approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit.

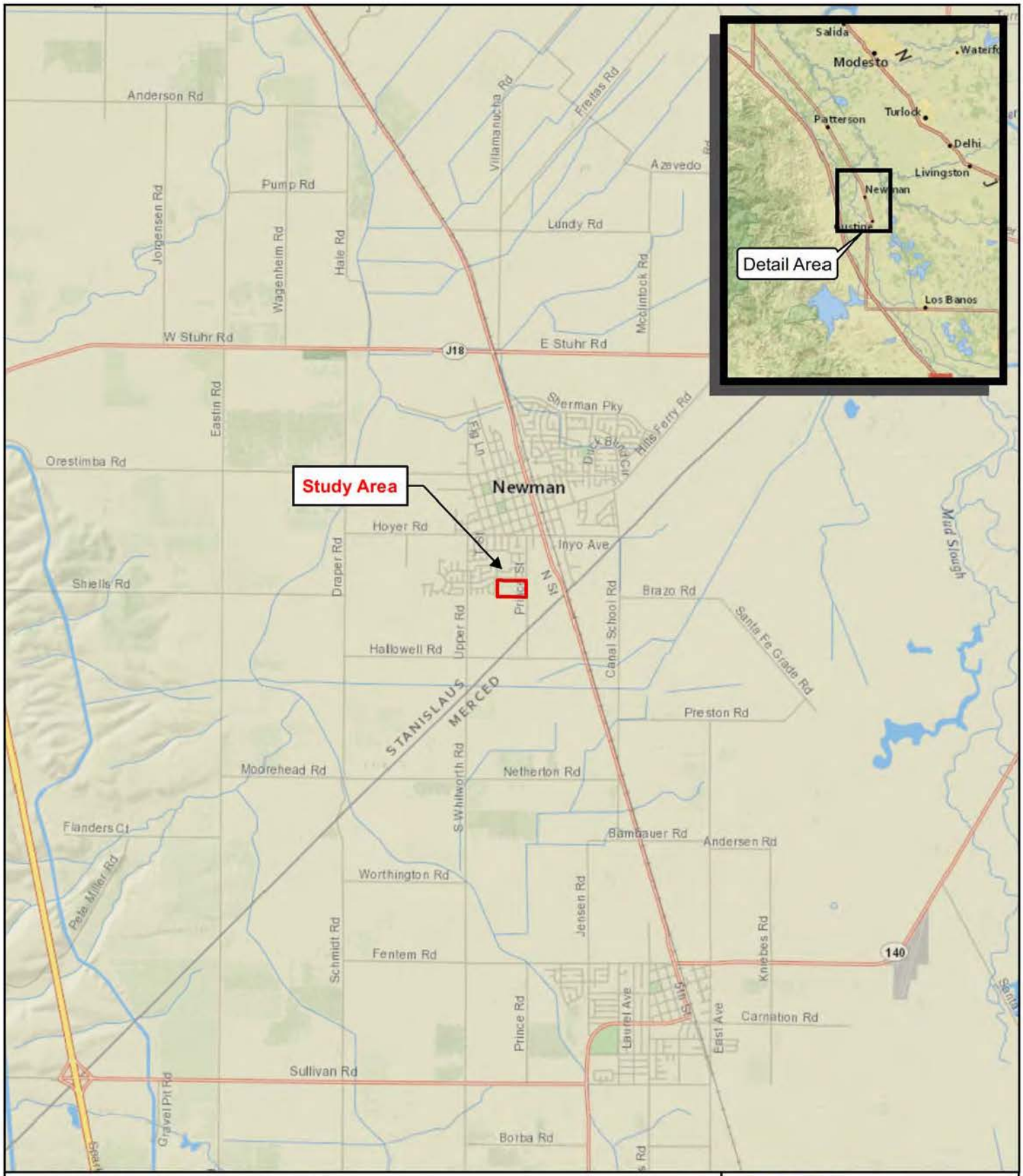

Figure 1. Study Area Location Map

N
W E
S

wra
ENVIRONMENTAL CONSULTANTS

Prince Road Subdivision
Stanislaus County, California

0 0.5 1 2 Miles

Map Prepared Date: 1/9/2015
Map Prepared By: pkobylarz
Base Source: Esri, National Geographic
Data Source(s): WRA

Path: L:\Acad 2000 Files\24000\24092\GIS\ArcMap\Figure 1 Location.mxd

2 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

2.1 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Clean Water Act; state regulations such as the Porter-Cologne Act, the CDFW Streambed Alteration Program, and CEQA; or local ordinances or policies such as city or county tree ordinances, Special Habitat Management Areas, and General Plan Elements.

Waters of the United States

The U.S. Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the Clean Water Act. Waters of the U.S. are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the U.S generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

Waters of the State

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of California Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream", which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). "Riparian" is defined as "on, or pertaining to, the banks of a stream." Riparian vegetation is defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2013). Sensitive plant communities are also identified by CDFW (2010). CNDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2010) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or USFWS must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in city or county general plans or ordinances.

2.2 Sensitive Special-Status Species

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW special-status invertebrates, are all considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). Bat species are also evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity; bats named as a "High Priority" species for conservation by the WBWG are typically considered special-status. Bat species designated as "High Priority" qualify for legal protection under Section 15380(d) of the CEQA Guidelines. Species designated "High Priority" are defined as "imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats" (CDFG, 2011). In addition to regulations for special-status species, most birds in the United States, including non-special-status native species, are

protected by the Migratory Bird Treaty Act of 1918 (MBTA) and the California Fish and Game Code (CFGC), i.e., sections 3503, 3503.5 and 3513. Under these laws, destroying active bird nests, eggs, and/or young is illegal.

Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Rank 3 and Rank 4 species are afforded little or no protection under CEQA, but are included in this analysis for completeness. A description of the CNPS Ranks is provided below in Table 1.

Table 1. Description of CNPS Ranks and Threat Codes

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

Critical Habitat

Critical habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

3 METHODS

On December 17, 2014, the Project Area was traversed on foot to determine (1) plant communities present within the Project Area, (2) if existing conditions provided suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats are present. All plant and wildlife species encountered were recorded and are summarized in Appendix A. Plant nomenclature follows Baldwin et al. (2012) and subsequent revisions by the Jepson Flora Project (2014), except where noted. Because of recent changes in classification for many of the taxa treated by Baldwin et al. and the Jepson Flora Project, relevant synonyms are provided in brackets. For cases in which regulatory agencies, CNPS, or other entities base rarity on older taxonomic treatments, precedence was given to the treatment used by those entities.

3.1 Biological Communities

Prior to the site visit, available reference materials were reviewed, including soil survey data for the Project Area (California Soil Resource Lab 2014), the U.S. Geological Survey (USGS) 7.5-minute quadrangle map for Newman and the eight quadrangle maps surrounding Newman (USGS 1917, 2012a-i), the USFWS National Wetland Inventory (USFWS 2014a), and aerial imagery of the Project Area (Google Earth 2014) to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Project Area. Biological communities present in the Project Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *A Manual of California Vegetation*, Second Edition (Sawyer et al. 2009). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

3.1.1 Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations and ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species and are identified or described in Section 4.1.1 below.

3.1.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below.

3.1.2.1 Wetlands and Waters

The Project Area was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFW were present. The assessment was based primarily on the presence of wetland hydrology or wetland soils but may also include any observed indicators of wetland plants. Any potential wetland areas were identified as areas

dominated by plant species with a wetland indicator status[1] of OBL, FACW, or FAC as given on the U.S. Army Corps of Engineers National Wetlands Plant List (Lichvar et al. 2014). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, algal mats, and oxidized root channels, or indirect (secondary) indicators, such as a water table within two feet of the soil surface during the dry season. Some indicators of wetland soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the Corps Manual (Environmental Laboratory 1987) and Field Indicators of Hydric Soils in the United States (NRCS 2010).

The preliminary waters assessment was based primarily on the presence of hydric soil indicators and wetland hydrology in manmade irrigation ditches. Collection of additional data will be necessary to prepare a delineation report suitable for submission to the Corps.

3.1.2.2 Other Sensitive Biological Communities

The Project Area was evaluated for the presence of other sensitive biological communities, including riparian areas and sensitive plant communities recognized by CDFW. Prior to the site visit, aerial photographs, local soil maps, the *List of Vegetation Alliances* (CDFG 2010), and *A Manual of California Vegetation* (Sawyer et al. 2009) were reviewed to assess the potential for sensitive biological communities to occur in the Project Area. All alliances within the Project Area with a ranking of 1 through 3 were considered sensitive biological communities and mapped, if found.

3.2 Special-Status Species

3.2.1 Literature Review

Potential occurrence of special-status species in the Project Area was evaluated by first determining which special-status species occur in the vicinity of the Project Area through a literature and database search. Database searches for known occurrences of special-status species focused on the USGS Newman 7.5 minute quadrangle and the eight surrounding USGS quadrangles. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Project Area:

- California Natural Diversity Database (CNDDB) records (CDFW 2014)
- USFWS quadrangle species lists (USFWS 2014b)
- CNPS Inventory records (CNPS 2014)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "Amphibians and Reptile Species of Special Concern in California" (Jennings 1994)
- California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. (Shuford and Gardali 2008)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- Fairy Shrimps of California's Puddles, Pools and Playas (Eriksen and Belk 1999)

[1] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

3.2.2 Site Assessment

A site visit was made to the Project Area to search for suitable habitats for special-status species. Habitat conditions observed in the Project Area were used to evaluate the potential for presence of special-status species based on these searches and the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Project Area was then evaluated according to the following criteria:

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Present. Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity in order to determine its potential to occur in the Project Area. The site visit does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, if a special-status species is observed during the site visit, its presence will be recorded and discussed.

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of WRA biologists with experience working with the species and habitats. If necessary, recognized experts in individual species biology were contacted to obtain the most up to date information regarding species biology and ecology.

If a special-status species was observed during the site visit, its presence is recorded and discussed below in Section 4.2. For some species, a site assessment visit at the level conducted for this report may not be sufficient to determine presence or absence of a species to the specifications of regulatory agencies. In these cases, a species may be assumed to be present or further protocol-level special-status species surveys may be necessary. Special-status species for which further protocol-level surveys may be necessary are described below in Section 5.

4 RESULTS

The Project Area borders the southern edge of Newman on land that is primarily an agricultural field used for row crops but also contains two residential sites. Residential development is located to the north and west of the Project Area, and agricultural land is located to the south and east. Elevations of the Project Area range from approximately 85 to 95 feet, though it is generally flat, with slight elevation changes occurring inconsistently throughout. The Project Area has been significantly altered from its natural state. The majority of the site is an agricultural field that has been used for row crops since at least 1999. In 2014, the field was used to grow corn (*Zea mays*). When crops are not planted, the field becomes dominated by non-native annual grasses. The eastern side of the Project Area also contains a developed area used as a residence. In addition, small, maintained, manmade ditches are present along the western, southern, and eastern boundaries of the Project Area. The ditch along the eastern border is completely isolated, but the ditch along the southern and western border connects to the Newman sewer system. The following sections present the results and discussion of the biological assessment within the Project Area.

4.1 Biological Communities

Table 1 summarizes the area of each biological community type observed in the Project Area. Non-sensitive biological communities in the Project Area include ruderal grassland and developed areas. One potentially sensitive biological community is found in the Project Area; irrigation ditches. Descriptions for each biological community are contained in the following sections. Biological communities within the Project Area are shown in Figure 2.

Table 2. Summary of Biological Communities in the Project Area.

Community Type	Area (acres)
Non-Sensitive	
Developed land	2.18
Ruderal grassland	17.90
Irrigation ditches (within Ruderal Grassland)	0.16
Total Project Area Size	20.24

Figure 2. Aerial Photo of Study Area

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ENVIRONMENTAL CONSULTANTS

Prince Road Subdivision
Stanislaus County, California

0 125 250 500 Feet

Map Prepared Date: 1/14/2015
Map Prepared By: pkobylarz
Base Source: USGS EROS 10/22/2013
Data Source(s): WRA

Path: L:\Acad 2000 Files\24000\24092\GIS\ArcMap\Figure 2 Aerial Imagery.mxd

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ENVIRONMENTAL CONSULTANTS

Prince Road Subdivision

Stanislaus County, California

Figure 3.

Biological Communities

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Feet

Map Prepared Date: 1/29/2015
Map Prepared By: pkobylarz
Base Source: USGS EROS 2013
Data Source(s): WRA

Path: L:\Acad 2000 Files\24000\24092\GIS\ArcMap\Figure 3 Biological Communities.mxd

4.1.1 Non-Sensitive Biological Communities

4.1.1.1 Developed land

Although not described in the literature, developed areas are those that have been altered by humans and may contain structures, landscaped areas, paved areas, or other non-natural surfaces. This land cover type is present at the east end of the Project Area and includes a gravel driveway, houses and other built structures, and landscape plantings. Vegetation present was sparse and typically non-native. Plant species observed in developed land in the Project Area was include giant reed (*Arundo donax*), bull mallow (*Malva nicaeensis*), and matted sandmat (*Euphorbia serpens* [*Chamaesyce s.*].

4.1.1.2 Ruderal grassland

Although not described in the literature, ruderal grassland includes areas that have been partially developed or have been used in the past for agriculture. However, these areas are not currently used for agricultural activities and have been allowed to revert to a semi-natural condition. The Project Area is composed primarily of ruderal grassland consisting of recently harvested fields. Approximately 17.90 acres of this habitat is present in the Project Area. Based on aerial imagery (Google Earth 2014), the Project Area has been used for row crops since at least 1999 and as recently as 2014. At the time of the site visit of December 17, 2014, the field had become a dense stand of wild oats. Other species observed in ruderal grassland in the Project Area include Johnson grass (*Sorghum halepense*), scarlet pimpernel (*Anagallis arvensis*), and black mustard (*Brassica nigra*). A row of planted trees, consisting of the non-native Lombardy poplar (*Populus nigra*) and almond (*Prunus dulcis*), exists along southwestern boundary of the Project Area. Many of these trees have been cut down and are resprouting, though some are uncut and tall.

4.1.1.3 Irrigation ditches

As defined in the Corps Regulatory Guidance Letter No. 07-02, "irrigation ditches" are defined as "a man-made feature and/or an upland swale that conveys water to an ultimate irrigation use or place of use, or moves and/or conveys irrigation water (e.g. 'run-off' from irrigation) away from irrigated lands" (Federal Register 2007). In the Project Area, manmade irrigation ditches exist along the eastern, western, and part of the southern boundaries. One ditch enters the Project Area from the south from an upland origin, runs along the southwestern and western boundaries, and then drains out of the Project Area via a concrete pipe. At that point, it appears to connect to the City of Newman sewer system. This ditch receives run-off from the agricultural field within the Project Area and the agricultural field adjacent to the southeastern part of the Project Area. A second ditch exists along the eastern boundary of the Project Area. It is an isolated ditch that is entirely contained within the Project Area. It receives run-off from the agricultural field and developed land within in the Project Area and may receive run-off from the adjacent Prince Road. Both ditches were sparsely vegetated and appear to have been maintained on a regular basis.

Both ditches had areas of saturation and patches of standing water that were approximately 1 to 2 inches deep, but because the Project Area and adjacent agricultural field had not been irrigated, the saturation and standing water is assumed to be a result of precipitation and run-off from the recent storm event. The length of time that this ditch remains inundated during the year from storm run-off is unknown. Vegetation in irrigation ditches was sparse and primarily unidentifiable grass seedlings, so it is unknown whether hydrophytic vegetation was present.

All ditches are excavated in uplands, are regularly maintained, are not re-routed "blue line" streams (USGS 1917, 2012h) drain only the agricultural field and, in the case of the eastern ditch, Prince Rd. As such, they are not assumed to be jurisdictional features.

4.2 Special-Status Species

4.2.1 Plants

Based upon a review of the resources and databases given in Section 3.2.1 (CDFW 2014, CNPS 2014), a 9-Quad search of the USGS 7.5 minute Quadrangles surrounding the Project Area showed that 21 special-status plant species have been documented in the vicinity of the Project Area (Figure 3). All 21 of these species, as listed below, are unlikely or have no potential to occur in the Project Area:

- Alkali milk-vetch (*Astragalus tener* var. *tener*); CRPR 1B.2
- Heartscale (*Atriplex cordulata* var. *cordulata*); CRPR 1B.2
- San Joaquin spearscale (*Extriplex joaquinana* [*Atriplex j.*]); CRPR 1B.2
- Lesser saltscale (*Atriplex minuscula*); CRPR 1B.1
- Vernal pool smallscale (*Atriplex persistens*); CRPR 1B.2
- Big tarplant (*Blepharizonia plumosa*); CRPR 1B.1
- Round-leaved filaree (*California macrophylla*); CRPR 1B.1
- Lemmon's jewelflower (*Caulanthus lemmonii*); CRPR 1B.2
- Hispid bird's-beak (*Chloropyron molle* ssp. *hispidum*); CRPR 1B.1
- Brewer's clarkia (*Clarkia breweri*); CRPR 4.2
- Small-flowered morning-glory (*Convolvulus simulans*); CRPR 4.2
- Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*); CRPR 1B.2
- Delta button-celery (*Eryngium racemosum*); State Endangered; CRPR 1B.1
- Spiny-sepaled button-celery (*Eryngium spinosepalum*); CRPR 1B.2
- Diamond-petaled California poppy (*Eschscholzia rhombipetala*); CRPR 1B.1
- Spring lessingia (*Lessingia tenuis*); CRPR 4.3
- Little mousetail (*Myosurus minimus* ssp. *apus*); CRPR 3.1
- Lime Ridge navarretia (*Navarretia gowenii*); CRPR 1B.1
- Prostrate vernal pool navarretia (*Navarretia prostrata*); CRPR 1B.1
- Sanford's arrowhead (*Sagittaria sanfordii*); CRPR 1B.2
- Slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*); CRPR 2B.2

These species are unlikely or have no potential to occur in the Project Area because of one or more of the following reasons:

- Hydrologic conditions (e.g. marsh habitat, seasonal wetlands) necessary to support the special-status plant(s) are not present in the Project Area;
- Edaphic (soil) conditions (e.g. sand, serpentine) necessary to support the special-status plant(s) are not present in the Project Area;
- Topographic positions (e.g. slopes) necessary to support the special-status plant(s) are not present in the Project Area;
- Associated vegetation communities (e.g. chaparral, chenopod scrub, cismontane woodland) necessary to support the special-status plant(s) are not present in the Project Area.

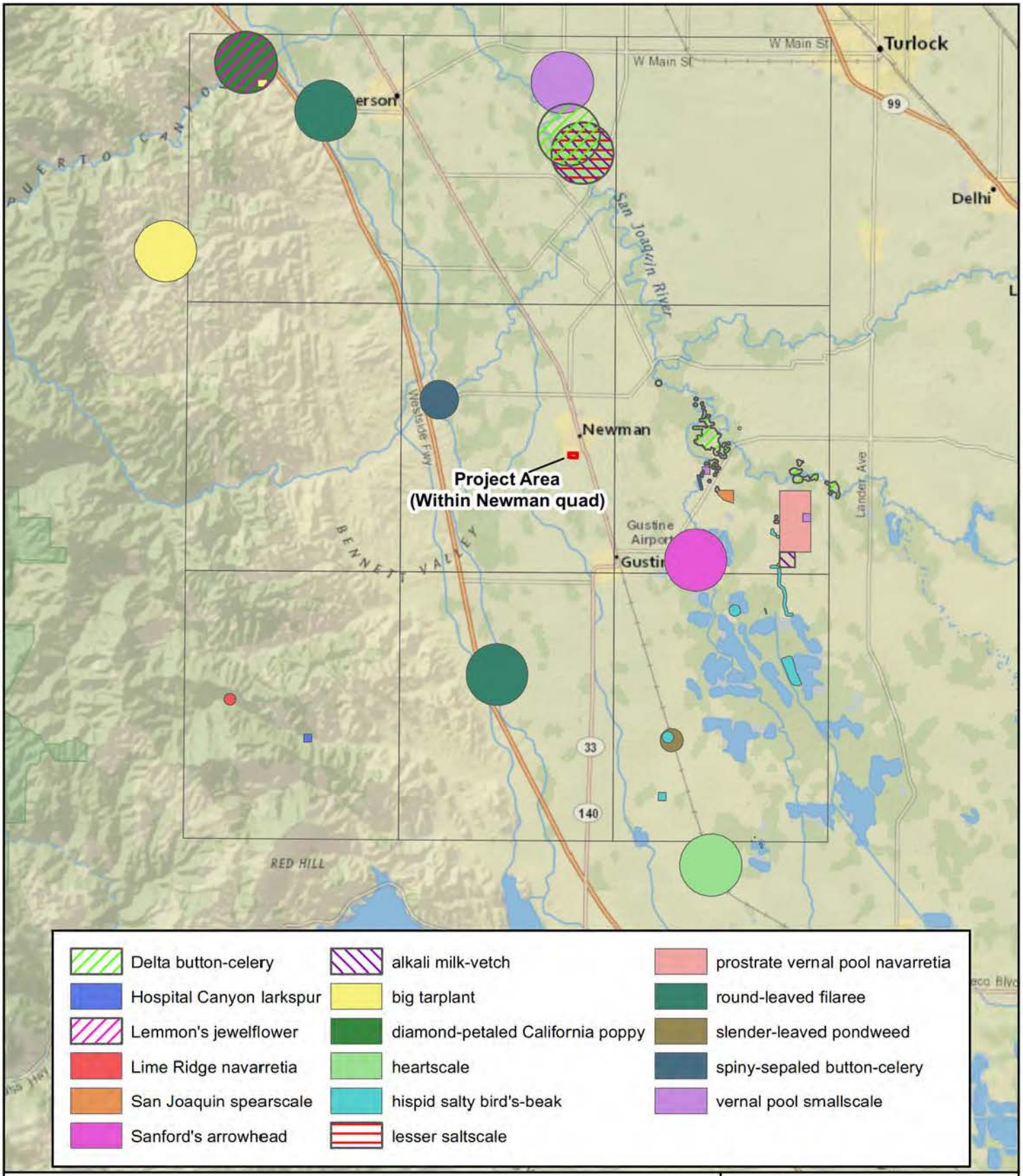

Figure 4. Special Status Plant Species within Adjacent USGS Quads

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ENVIRONMENTAL CONSULTANTS

Prince Road Subdivision
Stanislaus County, California

Map Prepared Date: 1/22/2015
Map Prepared By: pkobylarz
Base Source: National Geographic
Data Source(s): CNDDB (December 2014)

Path: L:\Acad 2000 Files\24000\24092\GIS\ArcMap\Figure 4 CNDDB Plants.mxd

No special-status plant species were observed in the Project Area during the assessment site visit. Federal- or state-listed species that are documented in the vicinity of the Project Area but are unlikely or have no potential to occur there are described below.

Delta button-celery (*Eryngium racemosum*). State Endangered, CRPR 1B.1. No Potential. Delta button-celery is an annual forb in the carrot family (Apiaceae) that blooms from June to October. It typically occurs on seasonally flooded mesic clay substrate in riparian scrub habitat at elevations ranging from 10 to 95 feet (CDFW 2014, CNPS 2014). Observed associated species include black willow (*Salix gooddingii*), common lippia (*Phyla nodiflora*), rough cocklebur (*Xanthium strumarium*), Bermuda grass (*Cynodon dactylon*), common sunflower (*Helianthus annuus*), creeping spikerush (*Eleocharis macrostachya*), Mediterranean barley (*Hordeum marinum*), iodine bush (*Allenrolfea occidentalis*), alkali heath (*Frankenia salina*), salt grass (*Distichlis spicata*), and alkali weed (*Cressa truxillensis*).

Four occurrences of Delta button-celery are documented within 3.5 to 10 miles of the Project Area. However, although the Project Area contains clay substrate, it does not contain riparian scrub habitat or seasonally flooded depressions and therefore has no potential to support this species.

4.2.2 Wildlife

Based upon a review of the resources and databases given in Section 3.2.1 (CDFW 2014, CNPS 2014), a 9-Quad search of the USGS 7.5 minute Quadrangles surrounding the Project Area showed that 31 special-status wildlife species have been documented in the vicinity of the Project Area (Figure 4).

Twenty-six of these species, as listed below, are unlikely or have no potential to occur in the Project Area:

- California red-legged frog (*Rana draytonii*); Federal Threatened, CDFW Species of Special Concern
- California tiger salamander (*Ambystoma californiense*); State Threatened, CDFW Species of Special Concern
- Western spadefoot (*Spea hammondii*); CDFW Species of Special Concern
- Bald eagle (*Haliaeetus leucocephalus*)(nesting & wintering); Federal Delisted, State Endangered, CDFW Fully Protected Species, USFWS Bird of Conservation Concern
- Burrowing owl (*Athene cunicularia*)(burrow sites & some wintering sites); CDFW Species of Special Concern, USFWS Bird of Conservation Concern
- California horned lark (*Eremophila alpestris actia*); CDFW Watch List
- Golden eagle (*Aquila chrysaetos*)(nesting & wintering); CDFW Fully Protected Species, CDFW Watch List, USFWS Bird of Conservation Concern
- Least Bell's vireo (*Vireo bellii pusillus*)(nesting); Federal Endangered, State Endangered
- Northern harrier (*Circus cyaneus*)(nesting); CDFW Species of Special Concern
- Prairie falcon (*Falco mexicanus*)(nesting); CDFW Watch List, USFWS Bird of Conservation Concern
- Tricolored blackbird (*Agelaius tricolor*)(nesting colony); CDFW Species of Special Concern, USFWS Bird of Conservation Concern
- American badger (*Taxidea taxus*); CDFW Species of Special Concern
- Fresno kangaroo rat (*Dipodomys nitratoides exilis*); Federal Endangered
- Hoary bat (*Lasiurus cinereus*); Western Bat Working Group: Medium Priority
- Western red bat (*Lasiurus blossevillii*), CDFW Species of Special Concern, WBWG High Priority.

- San Joaquin kit fox (*Vulpes macrotis mutica*); Federal Endangered, State Threatened
- Blunt-nosed leopard lizard (*Gambelia sila*); Federal Endangered
- Giant garter snake (*Thamnophis gigas*); Federal Threatened, State Threatened
- San Joaquin whipsnake (*Masticophis flagellum ruddocki*); CDFW Species of Special Concern
- Pacific pond turtle (*Emys marmorata*); CDFW Species of Special Concern
- California Linderiella (*Linderiella occidentalis*); CDFW Special Status Invertebrate
- Conservancy fairy shrimp (*Branchinecta conservatio*); Federal Endangered, CDFW Special Status Invertebrate
- Longhorn fairy shrimp (*Branchinecta longiantenna*); Federal Endangered, CDFW Special Status Invertebrate
- Vernal pool fairy shrimp (*Branchinecta lynchi*); Federal Threatened, CDFW Special Status Invertebrate
- Vernal pool tadpole shrimp (*Lepidurus packardi*); Federal Endangered, CDFW Special Status Invertebrate
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*); Federal Threatened, CDFW Special Status Invertebrate

These species were determined to be unlikely to occur or have no potential to occur due to lack of appropriate microhabitat, edaphic conditions, or associated species. Several of these species, such as Pacific pond turtle, California red-legged frog, and several fairy shrimp species, depend on wetlands or vernal pools not found in the Project Area, for a portion or all of

their life cycle. Burrowing owl was determined to be unlikely to occur in the area due to active agricultural activities in the Project Area and the absence of mammal burrows the owl could potential use for nesting. Other species are unlikely to occur due to lack of appropriate vegetation these species require for foraging or nesting; tricolored blackbirds, for example, utilize primarily dry or fallow croplands for nesting. Federal listed species unlikely to occur are discussed in greater detail in Section

No special-status wildlife species were observed in the Project Area during the site assessment. No special-status wildlife species have a high potential to occur in the Project Area, and five special-status wildlife species have a moderate potential to occur in the Project Area. Special-status wildlife species that have a high potential to occur in the Project Area are discussed below.

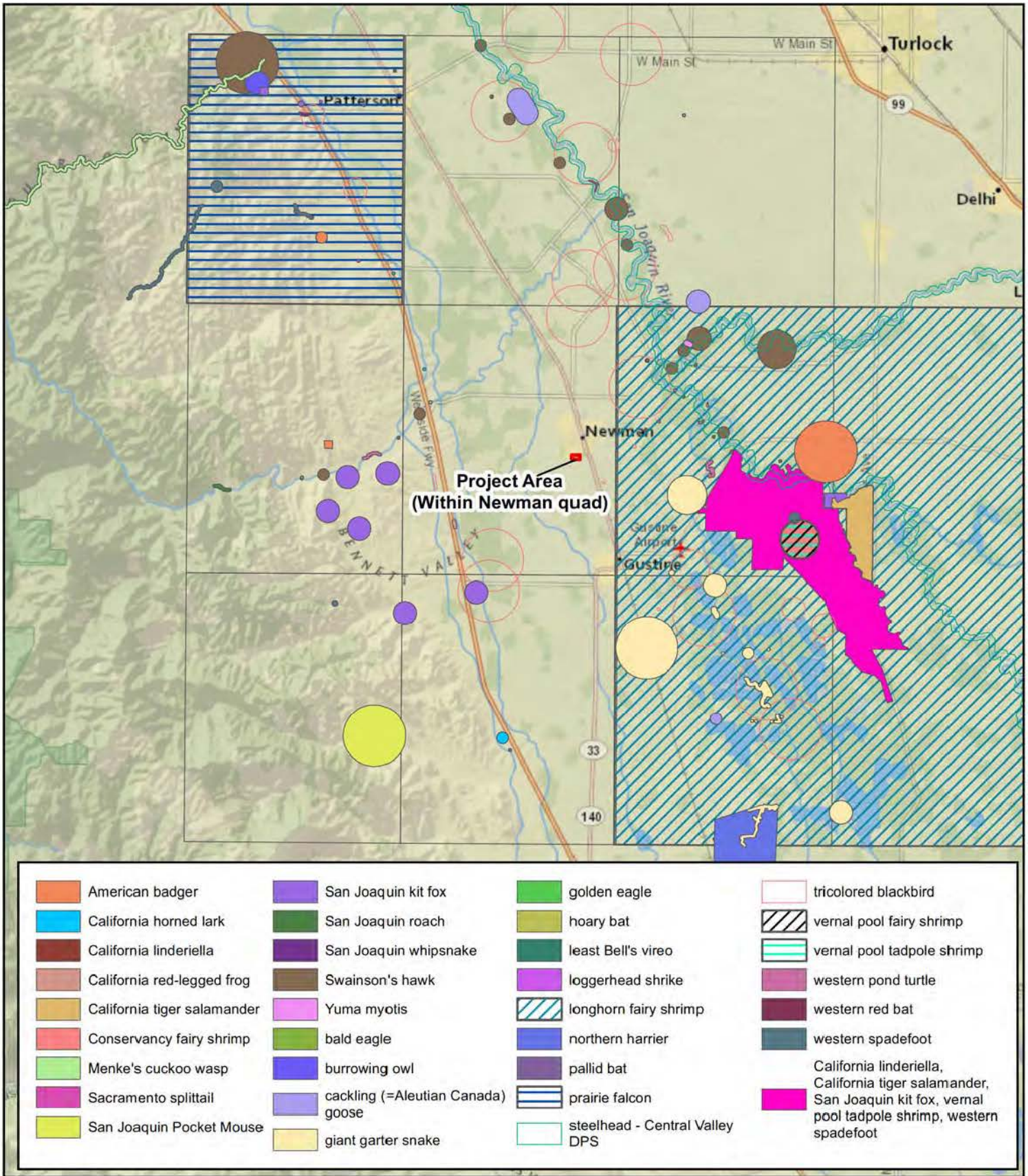

Figure 4. Special Status Plant Species within Adjacent USGS Quads

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ENVIRONMENTAL CONSULTANTS

Prince Road Subdivision
Stanislaus County, California

Map Prepared Date: 1/22/2015
Map Prepared By: pkobylarz
Base Source: National Geographic
Data Source(s): CNDDB (December 2014)

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Swainson's hawk (*Buteo swainsoni*). State Threatened. Swainson's hawk is a summer resident and migrant in California's Central Valley and scattered portions of the southern California interior. Nests are constructed of sticks and placed in trees located in otherwise largely open areas. Areas typically used for nesting include the edge of narrow bands of riparian vegetation, isolated patches of oak woodland, lone trees, and also planted and natural trees associated with roads, farmyards and sometimes adjacent residential areas. Foraging occurs in open habitats including grasslands, open woodlands, and agricultural areas. While breeding, adults feed primarily on rodents (and other vertebrates); for the remainder of the year, large insects (e.g., grasshoppers, dragonflies) comprise most of the diet. In many areas, Swainson's hawks have adapted to foraging primarily in and around agricultural plots (particularly alfalfa, wheat and row crops), as prey is both numerous and conspicuous at harvest and/or during flooding or burning (Bechard et al. 2010). Swainson's hawks have been documented nesting as close as 2 miles away from the project site. A few isolated trees located immediately adjacent to the site are suitable for nesting; though no nest structures were observed. Swainson's hawks are not anticipated to forage for vertebrate prey in the Project Area as the site is regularly disked, precluding small burrowing mammals from inhabiting the site. This species may occasionally forage for insects over the site, particularly during disking events but otherwise are likely to utilize fallow fields present in the general vicinity of the Project Area.

White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates. There is a moderate potential for the white-tailed kite to occur in the Project Area, as this species may use the area as both foraging and nesting habitat. White-tailed kite (and other raptors) are not anticipated to forage for vertebrate prey in the Project Area as the site is regularly disked, precluding small burrowing mammals from inhabiting the site but they may occasionally forage for insects over the site, particularly during disking events.

Loggerhead shrike (*Lanius ludovicianus*). CDFW Species of Special Concern. A common resident of lowlands and foothills throughout California, this species prefers open habitats with scattered trees, shrubs, posts, fences, utility lines or other perches. Nests are usually built on a stable branch in a dense shrub or small tree. This species is found most often in open-canopied valley foothill hardwood, conifer, pinyon-juniper, or desert riparian habitats. While this species eats mostly arthropods, they also take amphibians, small reptiles, small mammals or birds, and have been known to scavenge carrion. There is a moderate potential for the loggerhead shrike to nest in the Project Area. Loggerhead shrike is not anticipated to forage for vertebrate prey in the Project Area as the site is regularly disked, precluding small burrowing mammals from inhabiting the site but they may occasionally forage for insects over the site, particularly during disking events.

Pallid bat (*Antrozous pallidus*), CDFW Species of Special Concern, WBWG High Priority. Pallid bats are distributed from southern British Columbia and Montana to central Mexico, and east to Texas, Oklahoma, and Kansas. This species occurs in a number of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. They are most abundant in the arid Sonoran life zones below 6,000 feet, but have been found up to

10,000 feet in the Sierra Nevada. Pallid bats often roost in colonies of between 20 and several hundred individuals. Roosts are typically in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented in large conifer snags (e.g., ponderosa pine), inside basal hollows of redwoods and giant sequoias, and within bole cavities in oak trees. They have also been reported roosting in stacks of burlap sacks and stone piles. Pallid bats are primarily insectivorous, feeding on large prey that is taken on the ground, or sometimes in flight. Prey items include arthropods such as scorpions, ground crickets, and cicadas (WBWG 2010). There is a moderate potential for this species to use the structures within the Project Area for roosting or the open fields for foraging.

Yuma myotis (*Myotis yumanensis*), WBWG Low Priority. The Yuma myotis is found throughout most of California at lower elevations in a wide variety of habitats. Day roosts are found in buildings, trees, mines, caves, bridges, and rock crevices. Night roosts are usually associated with buildings, bridges or other man-made structures (Philpott 1996). There is a moderate potential for this species to use the structures within the Project Area for roosting or the open fields for foraging.

4.2.2.1 Federal listed Species That Are Unlikely to Occur

Federally listed species that are documented to occur within the vicinity of the Project Area, but are unlikely to occur include: California red-legged frog, California tiger salamander, Conservancy fairy shrimp, longhorn fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, giant garter snake, least Bell's vireo, and San Joaquin kit fox. These species are discussed below.

California Red-legged Frog (*Rana draytonii*), Federal Threatened Species, CDFW Species of Special Concern. The California red-legged frog is dependent on suitable aquatic, estivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, red-legged frogs disperse away from their estivation sites to seek suitable breeding habitat. Aquatic and breeding habitat is characterized by dense, shrubby, riparian vegetation and deep, still or slow-moving water. Breeding occurs between late November and late April. California red-legged frogs estivate (period of inactivity) during the dry months in small mammal burrows, moist leaf litter, incised stream channels, and large cracks in the bottom of dried ponds. The Project Area does not have any suitable aquatic or upland habitat for this species; therefore, this species is unlikely to occur within the Project Area.

California Tiger Salamander (*Ambystoma californiense*), Federal Threatened Species, State Threatened Species. The California tiger salamander is restricted to grasslands and low-elevation foothill regions in California (generally under 1500 feet) where it uses seasonal aquatic habitats for breeding. The salamanders breed in natural ephemeral pools, or ponds that mimic ephemeral pools (stock ponds that go dry), and occupy substantial areas surrounding the breeding pool as adults. California tiger salamanders spend most of their time in the grasslands surrounding breeding pools. They survive hot, dry summers by living underground in burrows (such as those created by ground squirrels and other mammals and deep cracks or holes in the ground) where the soil atmosphere remains near the water saturation point. During wet periods, the salamanders may emerge from refugia and feed in the surrounding grasslands. This species is unlikely to occur in the Project Area due to the lack of aquatic habitat in or within 1.3 miles of the site.

Conservancy Fairy Shrimp (*Branchinecta conservatio*), Federal Endangered Species. Conservancy fairy shrimp range in size from about 0.5 to 1.0 inch long. Conservancy fairy shrimp inhabit rather large, cool-water vernal pools with moderately turbid water (Eriksen and Belk 1999). They have been collected from early November, when pools start to fill, to early April. Hatching can begin within the same week that a pool starts to fill. Average time to maturity is forty-nine days. In warmer pools, it can be as little as nineteen. (Eriksen and Belk 1999). This species is unlikely to occur in the Project Area due to the lack of vernal pools.

Longhorn Fairy Shrimp (*Branchinecta longiantenna*), Federal Endangered Species. Longhorn fairy shrimp range from 0.5 to 0.8 inch long. Only eight populations of the longhorn fairy shrimp are known (USFWS 1996); occurrences are rare and highly disjunct with specific pool characteristics largely unknown (USFWS 2003). Longhorn fairy shrimp in Contra Costa and Alameda Counties are primarily reported from water pooled in sandstone depressions. Vernal pools in other parts of California that support these fairy shrimp are either; loam and sandy loam or shallow, alkaline pools (USFWS 1994). The longhorn fairy shrimp is capable of living in vernal pools of relatively short duration (pond 6 to 7 weeks in winter and 3 weeks in spring) (Eriksen and Belk 1999). This species is unlikely to occur in the Project Area due to the lack of vernal pools.

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*), Federal Threatened Species. The vernal pool fairy shrimp is widespread but not abundant; populations are known from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County (additional disjunct populations exist at various locations throughout state). Vernal pool fairy shrimp occupy a variety of different vernal pool habitats, from small, clear sandstone rock pools to large, turbid, alkaline, grassland valley floor pools (USFWS 2003). This species is unlikely to occur in the Project Area due to the lack of vernal pools or seasonal wetland habitats.

Vernal Pool Tadpole Shrimp (*Lepidurus packardi*), Federal Endangered Species. VPTS has compound eyes, a large shield-like carapace (shell) that covers most of the body, a pair of long cercopods (appendages) at the end of the last abdominal segment and approximately 35 pairs of legs (USFWS 2007). Suitable habitats vary considerably, including vernal pools, clay flats, alkaline pools, ephemeral stock tanks, roadside ditches, and road ruts (Rogers 2001, CNDDB 2007). Vernal pools may range in size from small, clear, and well-vegetated to highly turbid, alkali scald pools to large winter lakes (Rogers 2001). They may be seasonal or ephemeral, and may exhibit a wide range of salinity levels. However, VPTS survival requires that water bodies must be deeper than 5 inches, pond for 40 days or more, and not experience wide daily temperature fluctuations (Rogers 2001). VPTS cysts (resting eggs) also must have the opportunity to dry out before they will hatch. They inhabit sites in the Central Valley from Shasta County to northern Tulare County, and in the Central Coast Range from Solano County to Alameda County (USFWS 2003). This species is unlikely to occur in the Project Area due to the lack of vernal pools.

Giant Garter Snake (*Thamnophis gigas*), State Threatened Species, Federal Threatened Species. The endemic giant garter snake is the largest species of garter snake, ranging from 26 to 65 inches long. It is found only in the Sacramento and San Joaquin Valleys. The giant garter snake prefers freshwater marshes and low gradient streams, but has adapted to agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. This species is active during daylight and at night in hot weather. It uses vegetation near water in spring and summer for basking site but is secretive and difficult to approach; it will quickly drop into the water from its basking site. The giant garter snake hibernates in animal burrows and

emerges from overwintering sites in March. This species is unlikely to occur in the Project Area due to the lack of aquatic habitat in or adjacent to the site; irrigation ditches on the site lack connectivity to suitable garter snake habitat.

Least Bell's Vireo (*Vireo bellii pusillus*), Federal Endangered, State Endangered, CDFW Species of Special Concern. This subspecies of Bell's vireo is a neotropical migrant and summer resident in California and northern Baja California, wintering in southern Baja California (Brown 1993). Least Bell's vireo breeding habitat consists of riparian vegetation, usually in an early successional state (i.e., between five and ten years old), and near water (USFWS 1998). Such habitat is preferred because it provides both dense cover in the lower shrub layer for nest concealment, and a stratified canopy structure favorable to insect abundance and thus vireo foraging (USFWS 1998). Riparian habitat types used for breeding include those dominated by willows, cottonwood, and/or oaks, with a dense understory of species such as willows, mulefat, California wild rose, poison oak, and mugwort (USFWS 1998). This species is unlikely to occur due to lack of suitable riparian habitat.

San Joaquin Kit Fox (*Vulpes macrotis mutica*) Federally Endangered. State Threatened. The San Joaquin kit fox is found in the San Joaquin Valley and in surrounding foothills, from Alameda east to Stanislaus County. It is a desert-adapted species which occurs mainly in arid, flat grasslands, scrublands, and alkali meadows where the vegetation structure is relatively short (generally less than 1.5 feet tall). This species uses dens year-round and needs loose-textured soils suitable for burrowing. Kit fox prey consists primarily of kangaroo rats and other small rodents, as well as large insects and occasionally rabbits. This species is unlikely to occur due to absence of suitable burrow habitat and agricultural activities including regular disking.

5 SUMMARY AND RECOMMENDATIONS

One sensitive biological community was identified within the Project Area. No special-status plant species and five special-status wildlife species have a moderate or high potential to occur within the Project Area. The following sections present recommendations for future studies and/or measures to avoid or reduce impacts to these species and sensitive habitats.

5.1 Biological Communities

Most of the Project Area is comprised of ruderal grassland and developed land, which are not sensitive biological communities. However, the Project Area does contain 0.16 acre of irrigation ditches, which are not assumed to be within the jurisdiction of the Corps under Section 404 of the Clean Water Act and RWQCB under the Porter Cologne Act and Section 401 of the Clean Water Act.

5.2 Special-Status Plant Species

Of the 21 special-status plant species known to occur in the vicinity of the Project Area, none were determined to have the potential to occur in the Project Area. Most of the species found in the review of background literature occur in habitats not present in the Project Area, such as vernal pools, chaparral, and marsh, or in edaphic conditions not present in the Project Area, such as serpentine or sand. No further special-status plant surveys are recommended.

5.3 Special-Status Wildlife Species

Of the 31 special-status wildlife species known to occur in the vicinity of the Project Area, five were determined to have a moderate or greater potential to occur in the Project Area. Most of the species found in the review of background literature occur in habitats not found in the Project Area. Habitat suitability for species associated with grasslands or vernal pools is reduced due to the use of the Project Area for agriculture.

This assessment determined that three species of special-status birds and two species of special-status bats may occur in the Project Area. In addition, common bird species that are protected under the Migratory Bird Treaty Act may be found in the area.

6 POTENTIAL IMPACTS AND MITIGATION

The proposed project includes the annexation of 19.45 acres of land located adjacent to the southern limits of the City of Newman. Procedures to annex the land into the City are described below in Section 3.3. The project proposes to pre-zone the parcels located within this annexation to Medium Density Residential, as stated in the 2030 City of Newman General Plan. The project includes a Tentative Tract Map for 63 Low Density single-family residential lots (Lots 1 through 63) and 54 Medium Density condominiums for a total of 117 residential units (Figure 7). The project also includes a 1.75-acre park and on-site streets to access the residential lots and park. Project density would be approximately six units per acre for the entire site. The lots are located west of Prince Road and south of existing single-family homes situated along the south side of Canyon Creek Drive. The gross acreage of residential development is 12.19 acres, and the net acreage of residential development is 8.72 acres. The gross acreage for the new streets is 4.19 acres.

Water, stormwater, and sanitary sewer lines would be installed beneath the new roads and driveways. New utility lines would connect with existing lines located beneath Canyon Creek Drive and Prince Road. Utility poles along Prince Road would be relocated as necessary. In addition, irrigation and drainage ditches currently on the site would be relocated as necessary.

The lighting needs at the site would vary according to the type and intensity of use. The Project Area would be illuminated with indoor and outdoor night lighting. Lighting will be provided for safety, security, and an attractive nighttime environment. Varying illumination levels would be developed which address the particular needs of outdoor spaces and activities: safety, security, vehicular and pedestrian movement, signage, etc. Excessive illumination would be avoided and lighting would be designed and placed so as to minimize glare and reflection and to maintain 'dark skies.'

Potentially significant impacts as a result of the project and mitigation measures are discussed below.

6.1 Discussion of Impacts

6.1.1 Sensitive Biological Communities

Level of Significance: Not Significant

The project proposes to fill irrigation ditches that are not assumed to be within Corps jurisdiction under Section 404 of the Clean Water Act or under the jurisdiction of the RWQCB under the Porter-Cologne Act. Therefore, no significant impact is expected.

6.1.2 Special-Status Plant Species

Level of Significance: Not Significant

All 21 special-status plant species documented to occur within the vicinity of the Project Area are unlikely or have no potential to occur in the Project Area because of lack of suitable hydrology, edaphic conditions, topographic position, and associated vegetation communities. Therefore, the project would have no impact on special-special status plant species.

6.1.3 Special-Status Wildlife Species

Impact BIO-1: Impacts to Birds

Significance of Impact Before Mitigation: Potentially Significant

Special-status birds, including the Swainson's hawk, loggerhead shrike, and white-tailed kite, have the potential to occur in the Project Area, though foraging habitat is of low quality. Other nesting birds protected by the Migratory Bird Treaty Act and California Fish and Game Code may also be impacted by construction activities conducted during the breeding season from February through August. This project would require clearing of vegetation, which could potential have a direct impact on nesting birds if conducted during the breeding season. If construction occurs between February 1 and August 31, then impacts to nesting birds could potentially be significant. Implementation of pre-construction nest surveys or conducting vegetation clearing and ground moving activities outside of the breeding season as detailed in Mitigation Measures BIO-1a to BIO-1c would lessen potential impacts to a less-than-significant level.

Mitigation Measure BIO-1a: Impacts to Swainson's Hawk.

The Project has the potential to impact Swainson's hawk nesting success if an active Swainson's hawk nest is present within 0.5 mile during construction and decommissioning activities and by modifying foraging habitat. These impacts would be considered significant under CEQA and Fish and Game Code.

To avoid Project-related impacts to Swainson's hawk the following measures shall be implemented:

a) To avoid potential Project-related impacts to Swainson's hawk during the nesting season (March 1 – August 31), pre-construction surveys for nesting Swainson's hawk shall be conducted in accessible areas within 0.5 mile of the Project Area prior to initiating any Project-related activities. Surveys shall follow the methodology developed by the Swainson's hawk Technical Advisory Committee (SWHA TAC 2000). If Swainson's hawk is detected nesting within 0.5 mile of the Project Area during pre-construction surveys and avoidance is not possible, the biologist shall consult with CDFW to determine an appropriate no-disturbance buffer based on proximity to disturbance, timing, and visual barriers. A no-disturbance buffer shall be clearly delineated on the ground with fencing, stakes, or flagging and maintained until August 31 or the young have fledged and are no longer dependent on the nest or parents for

survival as determined by a qualified biologist and approved in writing by the Department.

a) Based on the presence of suitable foraging habitat for Swainson's hawk, removal of foraging habitat shall be mitigated in accordance with the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks* (Buteo swainsoni) *in the Central Valley of California* (CDFG 1994b). If a Swainson's hawk nest is discovered during pre-construction surveys within one half mile, degradation of foraging habitat shall be mitigated through one of two ways:

    i. Through purchase of credits at a CDFW approved bank (for prey-managed lands) at a 0.5:1 ratio; or

    ii. Through fee title acquisition or conservation easement acceptable to CDFW on agricultural lands or other suitable habitats at a 1:1 ratio.

c) If work occurs outside the nesting season for Swainson's hawk or if no nest is detected during pre-construction surveys, then the removal of foraging habitat shall be mitigated as stated above at a CDFW approved bank at a 0.5:1 ratio or through fee title acquisition or conservation easement at a 0.75:1 ratio.

Compensation shall be established prior to the start of project activities. With the implementation of the above-described avoidance, minimization and mitigation measures, Project-related impacts to Swainson's hawk will be less than significant.

Mitigation Measure BIO-1b: Impacts to Raptors.

The following measure was designed to ensure that tree-nesting raptors (e.g., hawks, falcons, kites) are not disturbed during the breeding season.

A qualified biologist shall conduct a pre-construction survey for tree-nesting raptors in all trees occurring within 500 feet of the project route within 14 days of the onset of ground disturbance, if such disturbance will occur during the breeding season (February 1 through August 31). If nesting raptors are detected on the site during the survey, a construction buffer of 250 feet shall be established around each active nest for the duration of the breeding season or until it has been confirmed by a qualified biologist that all young have fledged.

Mitigation Measure BIO-1c: Impacts to Other Nesting Birds.

Harming or disrupting nesting migratory birds and/or their eggs or young is prohibited under state and federal law, and therefore, would be a potentially significant impact. The following measures are designed to ensure that nesting special status and common nesting birds are not disturbed during the breeding season.

To avoid impacting nesting birds (including Loggerhead Shrike), one of the following shall be implemented:

a) Conduct grading and construction activities, including branch or snag removal, from September 1st through January 31st, when birds are not likely to be nesting; or

b) Conduct pre-construction surveys for nesting birds if construction is to take place during the nesting season (February 1 through August 31). A qualified wildlife biologist shall conduct a

pre-construction nest survey no more than 14 days prior to initiation of grading to provide confirmation of the presence or absence of active nests on or immediately adjacent to the project area. If active nests are encountered, species-specific measures shall be prepared by a qualified biologist and implemented to prevent abandonment of the active nest. At a minimum, grading in the vicinity of the nest shall be deferred until the young birds have fledged. A minimum exclusion buffer of 50 feet for special status birds such as loggerhead shrike shall be maintained during construction.

Level of Significance after Mitigation: Less than Significant

Impact BIO-2: Impacts to Bats

Significance of Impact Before Mitigation: Potentially Significant

Two special-status bat species, Yuma myotis and pallid bat, have the potential to occur within the Project Area. Habitats that support large, mature trees and snags or contain abandoned buildings have the potential to support roosting habitat for common and special-status bats. Potential bat habitat is found in large trees adjacent to the Project Area and in the abandoned farm buildings found at the site. Bat roosts are protected by CDFW and removal of occupied roosts would be considered a significant impact. Trees, snags, and buildings may be removed outside of the maternity roosting season between September and March without performing pre-construction bat surveys. If construction occurs during the maternity roosting season, impacts to bats would be potentially significant. Pre-construction bat surveys conducted as required in Mitigation Measure BIO-2 would lessen potential impacts to a less-than-significant level.

No obvious signs of bats were observed on-site. Construction activities including noise impacts near tree roosts, and the removal of existing structures, could impact roosting bats and available bat roost habitat. Because all bat species are protected from disturbance during maternal roosting and winter hibernation (CFGC Section 86; 2000; 2014; 3007; 4150, along with Title 14 of CCR), any impact to roosting bats during this period would be potentially significant.

Mitigation Measure BIO-2: Impacts to Bats.

Preconstruction surveys for bats shall take place during the maternity roosting season (defined as: April 1 through August 31) within trees and all old wooden buildings within the Project Area. Surveys shall be conducted by a qualified biologist no less than 14 days prior to removal of trees, snags or buildings within the Project Area. Ultrasonic acoustic surveys and/or other site appropriate survey method may be performed to determine the presence or absence of bats utilizing the Project Area as roosting or foraging habitat. Additionally the following measures shall be implemented to lessen impacts to bats:

a) If special-status bat species are detected during surveys, appropriate, species and roost specific mitigation measures shall be developed by the qualified biologist. Such measures may include postponing removal of trees, snags or structures until the end of the maternity roosting season or construction of species appropriate roosting habitat within, or adjacent to the Project Area.

b) Trees, snags and buildings may be removed outside of the maternity roosting season without performing preconstruction bat surveys.

c) Felled trees shall remain on the ground for 24 hours prior to being removed or chipped.

d) For all buildings to be demolished, internal entrance surveys shall be performed by a qualified bat biologist no less than 14 days prior to demolition to determine if buildings currently or previously support roosting bats. If bats are determined to be present, appropriate methods shall be used to exclude bats from the building. Such methods may include installation of one way "valves" to allow bats to exit, but not allow them to reenter the building.

e) If an identified maternity roost location is removed, species and roost appropriate mitigation shall be developed in consultation with CDFW. Mitigation shall include at minimum the replacement of a suitable roost structure within or immediately adjacent to the Project Area, such that similar structure shape and thermal properties are met with the replacement roost.

f) If no active roosts are identified then work may commence as planned. Survey results are valid for 30 days from the survey date. Should work commence later than 30 days from the survey date, surveys should be repeated. No preconstruction bat surveys are required for work conducted between the hibernation season and maternity season (i.e., September 1 through October 31).

g) Implementation of the above measure would mitigate impacts to bats to a less-than-significant level should they occur on-site prior to construction.

Level of Significance after Mitigation: Less than Significant

6.1.4 Wildlife Corridors and Nursery Sites

Level of Significance: Not Significant

The project area does not contain any nursery sites and is not located along a wildlife corridor; therefore, project impacts are not significant.

6.1.5 Local Policies or Ordinances

Level of Significance: Not Significant

The project proposes to develop ruderal grassland, developed areas, and irrigation ditches. Project activity does not conflict with any habitat, species, or other resource as described in and protected by any local policies and ordinances, including the Stanislaus County General Plan. Therefore, project impacts are not significant.

6.1.6 HCPs, NCCPs, or other approved habitat conservation plans

Level of Significance: Not Significant

The project proposes to develop ruderal grassland, developed areas, and irrigation ditches. There are no HCPs, NCCPs, or other approved habitat conservation plans that apply to the Project Area. Therefore, project impacts are not significant.

6.2 Cumulative Impacts

In the absence of project-specific mitigation, the impacts resulting from the project that are considered "less than significant with mitigation" would all contribute to cumulative biological resource impacts in the region. The overall cumulative effect of development is dependent on the degree to which significant vegetation and wildlife resources are protected or mitigated as part of individual developments. This includes preservation of areas of sensitive natural communities, protection of essential habitat for special-status plant and animal species, and avoidance of wetlands. Further environmental review of any specific development proposals in the vicinity of the site should generally serve to ensure that important biological and wetland resources are identified, protected and properly managed, and should serve to prevent any significant adverse development-related impacts.

Cumulative development contributes to an incremental reduction in the amount and connectivity of existing natural communities and wildlife habitat. Measures recommended to mitigate the proposed project's potential impacts on sensitive natural resources would serve to address much of the project's contribution to cumulative impacts. Implementation of the mitigation measures listed in Section 6.0 (Potential Impacts and Mitigation) would reduce the proposed project's potentially significant impacts to biological resources to less-than-significant levels. Therefore, potential cumulative impacts to biological resources would be less than significant.

7 CONCLUSION

Based on the results of the Site assessment, it is not anticipated that the Project will result in impacts to sensitive biological communities, special-status plant species, or special-status wildlife species. The jurisdictional status of the irrigation ditches needs to be determined by a jurisdictional delineation and Corps verification. If the irrigation ditches are not wetlands or non-wetland waters, then project activity will not be a significant impact. If the irrigation ditches are determined to be wetlands or non-wetland waters, then mitigation at a minimum ratio of 1:1 will be necessary and will reduce project impacts to less than significant. No special-status plants were observed during the site visits, and none are expected to occur within the Project Area; accordingly, no avoidance measures are required. No special-status wildlife species were observed during the site visits. Five special-status wildlife species have the potential to occur. Avoidance measures including pre-construction surveys, exclusion, and mitigation for loss of roost habitat if appropriate. Accordingly, all potential impacts to sensitive biological resources will be avoided or mitigated for the project.

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APPENDIX A

LIST OF OBSERVED PLANT AND WILDLIFE SPECIES

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Taxonomic Group is (Fish or Amphibians or Reptiles or Birds or Mammals or Mollusks or Arachnids or Crustaceans or Insects) and Quad is (Patterson (3712142) or Crows Landing (3712141) or Hatch (3712048) or Orestimba Peak (3712132) or Newman (3712131) or Gustine (3712038) or Crevison Peak (3712122) or Howard Ranch (3712121) or Ingomar (3712028))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Branchinecta conservatio Conservancy fairy shrimp	ICBRA03010	Endangered	None	G1	S1	
Branchinecta longiantenna longhorn fairy shrimp	ICBRA03020	Endangered	None	G1	S1	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S2S3	
Branta hutchinsii leucopareia cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	G5T3	S2	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Ceratochrysis menkei Menke's cuckoo wasp	IIHYM71050	None	None	G1	S1	
Circus cyaneus northern harrier	ABNKC11010	None	None	G5	S3	SSC
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T3Q	S3	WL
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	FP
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4?	

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lavinia symmetricus ssp. 1 San Joaquin roach	AFCJB19021	None	None	G4T3Q	S3	SSC
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G3	S2S3	
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Masticophis flagellum ruddocki San Joaquin whipsnake	ARADB21021	None	None	G5T2T3	S2?	SSC
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4?	
Oncorhynchus mykiss irideus steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Perognathus inornatus San Joaquin Pocket Mouse	AMAFD01060	None	None	G2G3	S2S3	
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	G2	S2	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis gigas giant garter snake	ARADB36150	Threatened	Threatened	G2	S2	
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 33

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Taxonomic Group is (Ferns or Gymnosperms or Monocots or Dicots or Lichens or Bryophytes) and Quad is (Ingomar (3712028) or Howard Ranch (3712121) or Crevison Peak (3712122) or Hatch (3712048) or Gustine (3712038) or Crows Landing (3712141) or Patterson (3712142) or Orestimba Peak (3712132) or Newman (3712131))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2
Atriplex cordulata var. cordulata heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
Atriplex minuscula lesser saltscale	PDCHE042M0	None	None	G2	S2	1B.1
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Blepharizonia plumosa big tarplant	PDAST1C011	None	None	G2	S2	1B.1
California macrophylla round-leaved filaree	PDGER01070	None	None	G2	S2	1B.1
Caulanthus lemmonii Lemmon's jewelflower	PDBRA0M0E0	None	None	G3	S3	1B.2
Chloropyron molle ssp. hispidum hispid salty bird's-beak	PDSCR0J0D1	None	None	G2T2	S2	1B.1
Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
Eryngium racemosum Delta button-celery	PDAPI0Z0S0	None	Endangered	G1Q	S1	1B.1
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Eschscholzia rhombipetala diamond-petaled California poppy	PDPAP0A0D0	None	None	G1	S1	1B.1
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Navarretia gowenii Lime Ridge navarretia	PDPLM0C120	None	None	G1	S1	1B.1
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.1
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Stuckenia filiformis ssp. alpina slender-leaved pondweed	PMPOT03091	None	None	G5T5	S3	2B.2

Record Count: 17

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 141209025009

Current as of: December 9, 2014

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio
- Conservancy fairy shrimp (E)
- Critical habitat, Conservancy fairy shrimp (X)

Branchinecta longiantenna
- Critical habitat, longhorn fairy shrimp (X)
- longhorn fairy shrimp (E)

Branchinecta lynchi
- Critical habitat, vernal pool fairy shrimp (X)
- vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
- valley elderberry longhorn beetle (T)

Lepidurus packardi
- Critical habitat, vernal pool tadpole shrimp (X)
- vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
- green sturgeon (T) (NMFS)

Hypomesus transpacificus
- delta smelt (T)

Oncorhynchus mykiss
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
- Central Valley spring-run chinook salmon (T) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
- California tiger salamander, central population (T)

Rana draytonii
- California red-legged frog (T)
- Critical habitat, California red-legged frog (X)

Reptiles

Gambelia (=Crotaphytus) sila
- blunt-nosed leopard lizard (E)

Thamnophis gigas
- giant garter snake (T)

Mammals

Dipodomys nitratoides exilis

Fresno kangaroo rat (E)

Vulpes macrotis mutica
San Joaquin kit fox (E)

Quads Containing Listed, Proposed or Candidate Species:

INGOMAR (403B)
HOWARD RANCH (404A)
CREVISON PEAK (404B)
HATCH (423B)
GUSTINE (423C)
CROWS LANDING (424A)
PATTERSON (424B)
ORESTIMBA PEAK (424C)
NEWMAN (424D)

Key:

(E) *Endangered* - Listed as being in danger of extinction.
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
(NMFS) Species under the Jurisdiction of the NationalOceanic&AtmosphericAdministration FisheriesService. Consult with them directly about these species.
Critical Habitat - Area essential to the conservation of a species.
(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
(C) *Candidate* - Candidate to become a proposed species.
(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory

ofRareandEndangeredPlants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and RecoveryPermits pages.

For plant surveys, we recommend using the GuidelinesforConductingandReporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a

separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our MapRoom page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. Moreinfo

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be March 09, 2015.

APPENDIX B

SITE PHOTOGRAPHS

View 1. View of the project area looking west from the southern boundary.

View 2. View of the project area looking northwest from southern boundary.

View 3. View of the project area looking north from southern boundary.

View 4. View of the project area northeast from southern boundary.

Figure 5. Views of the Project Area

Prince Road Residential Subdivision
City of Newman, California

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View 1. View of the project area looking west from southern boundary.

View 2. View of the project area looking south from Caton Drive.

View 3. View of the project area looking northwest from Prince Road.

View 4. View of the project area looking west from Prince Road.

Figure 6. Views of the Project Area

Prince Road Residential Subdivision
City of Newman, California

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Photo Plates.indd

View 1. View looking north from Caton Drive.

View 2. View looking south from Canyon Creek Drive.

View 3. View looking south from southern boundary of project site.

View 4. View looking south from Prince Road.

Figure 3. Views of Surrounding Land Uses

Prince Road Residential Subdivision
City of Newman, California

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Photo Plates.indd

View 1. View looking north from Prince Road.

View 2. View looking south from Prince Road.

View 3. View looking north from Prince Road.

View 4. View looking east from Prince Road.

Figure 4. Views of Surrounding Land Uses

Prince Road Residential Subdivision
City of Newman, California

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Special-Status Species in the Project Vicinity

APPENDIX E

Appendix E Special-Status Plant Species with Potential to Occur in the Project Vicinity

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on Project Site
Alkali milk-vetch *(Astragalus tener* var. *tener)*	--/--/1B.2	Alkaline sites in playas, valley and foothill grassland (on adobe clay), and vernal pools; elevation 1-60m. Blooming Period: March - June.	Unlikely. Suitable habitat not found at the project site.
Alkali-sink goldfields (*Lasthenia chrysantha*)	--/--/1B.1	Vernal pools. Alkaline; elevation 0-200m.	Unlikely. Suitable habitat not found at the project site.
Big tarplant *(Blepharizonia plumosa)*	--/--/1B.1	Valley and foothill grassland. Dry hills and plains in annual grassland. Clay to clay-loam soils, usually on slopes and often in burned areas; elevation 15-445m. Blooming Period: July - October.	Unlikely. Suitable habitat not found at the project site.
California alkali grass *(Puccinellia simplex)*	--/--/1B.2	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Alkaline, vernally mesic. Sinks, flats,and lake margins; elevation 1-915m. Blooming Period: March - May.	Unlikely. Suitable habitat not found at the project site.
Coulter's goldfields *(Lasthenia glabrata* ssp. *coulteri)*	--/--/1B.1	Coastal salt marshes, playas, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands; elevation 1-1375m. Blooming Period: February – June.	Unlikely. Suitable habitat not found at the project site.
Delta button-celery *(Eryngium racemosum)*	--/SE/1B.1	Riparian scrub; prefers seasonally inundated floodplain on clay soils; elevation 3-75m. Blooming Period: June - August.	Unlikely. Suitable habitat not found at the project site.
Diamond-petaled California poppy *(Eschscholzia rhombipetala)*	--/--/1B.1	Valley and foothill grassland. Alkalin, clay slopes and flats; elevation 0-97m. Blooming Period: March - April.	Unlikely. Suitable habitat not found at the project site.
Heartscale *(Atriplex cordulata* var. *cordulata)*	--/--/1B.2	Chenopod scrub, valley and foothill grassland, and meadows. Prefers alkaline flats and scalds in the Central Valley, on sandy soils; elevation 1-150m. Blooming Period: April - October.	Unlikely. Suitable habitat not found at the project site.
Hispid's salty bird's-beak *(Chloropyron molle* ssp. *hispidum)*	--/--/1B.1	Meadows, playas, valley and foothill grassland. In damp alkaline soils, especially in alkaline meadows and alkali sinks with Distichlis sp.; elevation 10-155m. Blooming Period: June - September.	Unlikely. Suitable habitat not found at the project site.
Hospital Canyon larkspur *(Delphinium californicum* ssp. *interius)*	--/--/1B.2	Cismontane woodland and chaparral, in wet, boggy meadows, openings in chaparral, and in canyons; elevation 225-1060m. Blooming Period: April - June.	Unlikely. Suitable habitat not found at the project site.
Lemmon's jewel-flower *(Caulanthus lemmonii)*	--/--/1B.2	Pinyon-juniper woodland, valley and foothill grassland; elevation 80-1220m. Blooming Period: March - May.	Unlikely. Suitable habitat not found at the project site.
Lesser saltscale *(Atriplex minuscula)*	--/--/1B.1	Chenopod scrub, playas, and valley and foothill grassland. In alkali sinks in sandy, alkaline soils; elevation 20-100m. Blooming Period: May - October.	Unlikely. Suitable habitat not found at the project site.
Lime Ridge navarretia *(Navarretia gowenii)*	--/--/1B.2	Chaparral, on calciumcarbonate-rich soil with high clay content; elevation 180-305m. Blooming Period: May - June.	Unlikely. Suitable habitat not found at the project site.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on Project Site
Northern slender pondweed *(Stuckenia filiformis* ssp. *alpina)*	--/--/2B.2	Marshes and swamps. Shallow, clear water of lakes and drainage channels; elevation 5-2325m. Blooming Period: May – July.	Unlikely. Suitable habitat not found at the project site.
Prostrate vernal pool navarretia *(Navarretia prostrata)*	--/--/1B.1	Coastal scrub, valley and foothill grassland, and vernal pools. Alkaline soils in grassland, or in vernal pools; elevation 15-700m. Blooming Period: April - July.	Unlikely. Suitable habitat not found at the project site.
San Joaquin spearscale *(Extriplex joaquinana)*	--/--/1B.2	Alkaline sites in chenopod scrub, meadows and seeps, playas, and valley and foothill grassland; elevation 1-320m. Blooming Period: April - October.	Unlikely. Suitable habitat not found at the project site.
Sanford's arrowhead *(Sagittaria sanfordii)*	--/--/1B.2	Marshes and swamps. Found in standing or slow-moving freshwater ponds, marshes, and ditches; elevation 0-610m. Blooming Period: May - October.	Unlikely. Suitable habitat not found at the project site.
Shining navarretia *(Navarretia nigelliformis* ssp. *radians)*	--/--/1B.2	Cismontane woodland, valley and foothill grassland, and vernal pools; elevation 200-1000m. Blooming Period: May - July.	Unlikely. Suitable habitat not found at the project site.
Spiny-sepaled button-celery *(Eryngium spinosepalum)*	--/--/1B.2	Vernal pools within valley and foothill grassland. Some sites on clay soils of granitic origin; elevation 100-420m. Blooming Period: April - May.	Unlikely. Suitable habitat not found at the project site.
Vernal pool smallscale *(Atriplex persistens)*	--/--/1B.2	Vernal pools on alkaline soils; elevation 10-115m. Blooming Period: July - October.	Unlikely. Suitable habitat not found at the project site.
Wright's trichocoronis *(Trichocoronis wrightii* var. *wrightii)*	--/--/2B.1	Marshes and swamps, riparian forest, meadows and seeps, vernal pools. Mud flats of vernal lakes, drying river beds, alkali meadows; elevation 5-435m. Blooming Period: May – September.	Unlikely. Suitable habitat not found at the project site.

SOURCE: CDFW 2022, CNPS 2022

NOTE: Status Codes:

Federal (USFWS)

FE: Listed as Endangered under the Federal Endangered Species Act.

FT: Listed as Threatened under the Federal Endangered Species Act.

FC: A Candidate for listing as Threatened or Endangered under the Federal Endangered Species Act.

FSC: Species of Special Concern.

FD: Delisted under the Federal Endangered Species Act.

State (CDFW)
SE: Listed as Endangered under the California Endangered Species Act.
ST: Listed as Threatened under the California Endangered Species Act.
SR: Listed as Rare under the California Endangered Species Act.
SC: A Candidate for listing as Threatened or Endangered under the California Endangered Species Act.
SSC: Species of Special Concern.
SFP: Fully Protected species under the California Fish and Game Code.
SD: Delisted under the California Endangered Species Act.

CNPS Rare Plant Ranks and Threat Code Extensions
1B: Plants that are considered Rare, Threatened, or Endangered in California and elsewhere.
2B: Plants that are considered Rare, Threatened, or Endangered in California, but more common elsewhere.
.1: Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat).
.2: Fairly endangered in California (20-80% occurrences threatened).
.3: Not very endangered in California (<20% of occurrences threatened or no current threats known).

Appendix E Special-Status Wildlife Species with Potential to Occur in the Project Vicinity

Species	Status (Federal/State)	Suitable Habitat Description	Potential to Occur on Project Site
American badger *(Taxidea taxus)*	--/SSC	Most abundant in drier, open stages of most shrub, forest, and herbaceous habitats. Need sufficient food and open, uncultivated ground with friable soils to dig burrows. Prey on burrowing rodents.	Unlikely. Suitable habitat not found at the project site.
Bald eagle *(Haliaeetus leucocephalus)*	FD/SE	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within one mile of water. Nests in large, old-growth, or dominant live tree with open branches.	Unlikely. Suitable habitat not found at the project site.
Burrowing owl *(Athene cunicularia)*	--/SSC	Open, dry, annual or perennial grasslands, desert, or scrubland, with available small mammal burrows.	Low Potential. Species known to occur within the vicinity of the project site.
California horned lark *(Eremophila alpestris actia)*	--/SSC	Coastal regions, chiefly from Sonoma County to San Diego County, also within the main part of the San Joaquin Valley and east to the foothills. Prefers short-grass prairie, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Unlikely. Suitable habitat not found at the project site.
California linderiella *(Linderiella occidentalis)*	FSC/--	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools typically has very low alkalinity, conductivity, and total dissolved solids.	Unlikely. Suitable habitat not found at the project site.
California red-legged frog *(Rana draytonii)*	FT/SSC	Rivers, creeks, and stock ponds with pools and overhanging vegetation. Requires dense, shrubby or emergent riparian vegetation, and prefers short riffles and pools with slow-moving, well-oxygenated water. Needs upland habitat to aestivate (remain dormant during dry months) in small mammal burrows, cracks in the soil, or moist leaf litter.	Unlikely. Suitable habitat not found at the project site.
California tiger salamander *(Ambystoma californiense)*	FT/ST	Grasslands and oak woodlands near seasonal pools and stock ponds in central and coastal California. Needs upland habitat to aestivate (remain dormant during dry months) in small mammal burrows, cracks in the soil, or moist leaf litter. Requires seasonal water sources that persist into late March for breeding habitat.	Unlikely. Suitable habitat not found at the project site.
Conservancy fairy shrimp *(Branchinecta conservatio)*	FE/--	Endemic to the grasslands of the northern two-thirds of the central valley; found in large, turbid pools. Also occurs in swales formed by old, braided alluvium filled by winter/spring rains.	Unlikely. Suitable habitat not found at the project site.
Foothill yellow-legged frog *(Rana boylii)*	--/SSC	Partly shaded, shallow streams and riffles with rocky substrate in a variety of habitats. Requires at least some cobble-sized substrate for egg-laying and 15 weeks of available water to attain metamorphosis.	Unlikely. Suitable habitat not found at the project site.

Species	Status (Federal/State)	Suitable Habitat Description	Potential to Occur on Project Site
Giant garter snake *(Thamnophis gigas)*	FT/ ST	Prefers freshwater marsh and low gradient streams. Adapted to drainage canals and irrigation ditches. The most aquatic garter snake in California.	Unlikely. Suitable habitat not found at the project site.
Golden eagle *(Aquila chrysaetos)*	--/SFP	Rolling foothill mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range. Also uses large trees in open areas.	Unlikely. Suitable habitat not found at the project site.
Hoary bat *(Lasiurus cinereus)*	--/SSC	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Low Potential. Species known to occur within the vicinity of the project site.
Least Bell's vireo *(Vireo bellii pusillus)*	FE/SE	Summer resident of southern and central California in riparian habitats below 2,000 feet in elevation. Often nests in large shrubs, along margins of bushes or on twigs projecting into pathways.	Unlikely. Suitable habitat not found at the project site.
Loggerhead shrike *(Lanius ludovicianus)*	--/SSC	(Nesting) Broken woodlands, savannah, pinyon-juniper, Joshua tree and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning and fairly dense shrubs and brush for nesting.	Low Potential. Species known to occur within the vicinity of the project site.
Long-horn fairy shrimp *(Branchinecta longiantenna)*	FE/--	Endemic to the eastern margin of the Central Coast mountains in seasonally astatic grassland vernal pools. Inhabits small, clear-water depressions in sandstone and clear to turbid clay/grass-bottomed pools in shallow swales.	Unlikely. Suitable habitat not found at the project site.
Northern California legless lizard *(Anniella pulchra)*	--/SSC	Sandy or loose loamy soils under sparse vegetation, moist soils. Anniella pulchra is traditionally split into two subspecies: *A. pulchra pulchra* (silvery legless lizard) and *A. pulchra nigra* (black legless lizard), but these subspecies are typically no longer recognized.	Unlikely. Suitable habitat not found at the project site.
Northern harrier *(Circus cyaneus)*	--/SSC	Found near coastal salt and freshwater marshes. Nests and forages in grasslands. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Unlikely. Suitable habitat not found at the project site.
Pallid bat *(Antrozous pallidus)*	--/SSC	Deserts, grasslands, scrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures.	Low Potential. Species known to occur within the vicinity of the project site.
Prairie falcon *(Falco mexicanus)*	--/SSC	Nesting Habitats. Open terrain, either level or hilly breeding sites located on cliffs. Forages far distances, including to marshlands and ocean shores.	Unlikely. Suitable habitat not found at the project site.

Species	Status (Federal/State)	Suitable Habitat Description	Potential to Occur on Project Site
Sacramento splittail *(Pogonichthys macrolepidotus)*	--/SSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes. Slow moving river sectins, dead end sloughs, requires flooded vegetation for spawning and foraging for young.	Unlikely. Suitable habitat not found at the project site.
San Joaquin coachwhip *(Masticophis flagellum ruddocki)*	--/SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Requires mammal burrows for refuge and oviposition sites.	Unlikely. Suitable habitat not found at the project site.
San Joaquin kit fox *(Vulpes macrotis mutica)*	FE/ST	Annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing, and suitable prey base.	Low Potential. Species known to occur within the vicinity of the project site.
Steelhead *(Oncorhynchus mykiss irideus)*	FT/--	Coastal stream with clean spawning gravel. Requires cool water and pools. Needs migratory access between natal stream and ocean.	Unlikely. Suitable habitat not found at the project site.
Swainson's hawk *(Buteo swainsoni)*	--/ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas, such as grasslands or agricultural fields supporting rodent populations.	Low Potential. Species known to occur within the vicinity of the project site.
Tricolored blackbird *(Agelaius tricolor)*	--/SE	Areas adjacent to open water with protected nesting substrate, which typically consists of dense, emergent freshwater marsh vegetation.	Unlikely. Suitable habitat not found at the project site.
Vernal pool fairy shrimp *(Branchinecta lynchi)*	FT/--	Endemic to the grasslands of the Central Valley, Central Coast Mtns., and South Coast Mtns. in astatic rain-filled pools. Inhabits small, clear-water sandstone depression pools and grass swale, earth slump, or basalt-flow depression pools.	Unlikely. Suitable habitat not found at the project site.
Vernal pool tadpole shrimp *(Lepidurus packardi)*	FE/--	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in swales of unplowed grasslands.	Unlikely. Suitable habitat not found at the project site.
Western pond turtle *(Emys marmorata)*	--/SSC	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs basking sites (such as rocks or partially submerged logs) and suitable upland habitat for egg-laying (sandy banks or grassy open fields).	Unlikely. Suitable habitat not found at the project site.
Western red bat *(Lasiurus blossevillii)*	--/SSC	Roosts primarily in trees, 2-40 feet above the ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Low Potential. Species known to occur within the vicinity of the project site.

Species	Status (Federal/State)	Suitable Habitat Description	Potential to Occur on Project Site
Western spadefoot *(Spea hammondii)*	--/SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands, breeds in winter and spring (January - May) in quiet streams and temporary pools.	Unlikely. Suitable habitat not found at the project site.

SOURCE: CDFW 2022

NOTE: Status Codes:

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Acoustical Analysis

F

APPENDIX

ACOUSTICAL ANALYSIS

CATON RANCH SUBDIVISION, PHASE II
NEWMAN, CALIFORNIA

WJVA Report No. 22-13

PREPARED FOR

EMC PLANNING
301 LIGHTHOUSE AVENUE, SUITE C
MONTEREY, CA 93940

PREPARED BY

WJV ACOUSTICS, INC.
VISALIA, CALIFORNIA

wjv acoustics

OCTOBER 21, 2022

1. INTRODUCTION

Project Description:

The project proposes pre-zoning, annexation, and a subdivision map to allow for construction of 112 low density and medium density single-family homes on the site. The project also includes a 1.91-acre dual usage park site on the eastern side of the property along with the development of various rights-of-way onsite with new water, sewer, and storm drain facilities. The project site plan is provided as Figure 1.

Environmental Noise Assessment:

This environmental noise assessment has been prepared to determine if significant noise impacts will be produced by the project and to describe mitigation measures for noise if significant impacts are determined. The environmental noise assessment, prepared by WJV Acoustics, Inc. (WJVA), is based upon the project Tentative Subdivision Map (dated 4/21/21), traffic data provided by VRPA Technologies, Inc., and a project site visit on February 15, 2022. Revisions to the Subdivision Map, project traffic information or other project-related information available to WJVA at the time the analysis was prepared may require a reevaluation of the findings and/or recommendations of the report.

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides examples of sound levels for reference.

2. THRESHOLDS OF SIGNIFICANCE

The CEQA Guidelines apply the following questions for the assessment of significant noise impacts for a project:

a. Would the project 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?

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

c. 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 project expose people residing or working in the project area to excessive noise levels?

a. Noise Level Standards

CITY OF NEWMAN

General Plan

The City of Newman General[1] Plan provides noise level criteria for land use compatibility for both transportation and non-transportation noise sources. The General Plan sets noise compatibility standards for transportation noise sources in terms of the Day-Night Average Level (L_{dn}). The L_{dn} represents the time-weighted energy average noise level for a 24-hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The L_{dn} represents cumulative exposure to noise over an extended period of time and are therefore calculated based upon *annual average* conditions. Table I provides the General Plan noise level standards for transportation noise sources.

The exterior noise level standard of the noise element is 60 dB L_{dn} for outdoor activity areas of single-family residential uses. While not explicitly stated in the General Plan, exterior noise level standards typically apply at outdoor activity areas of residential land uses. Outdoor activity areas generally include backyards of single-family residences and individual patios or decks and common outdoor activity areas of multi-family developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation.

The General Plan also requires that interior noise levels attributable to exterior noise sources not exceed 45 dB L_{dn}. The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep.

TABLE I

CITY OF NEWMAN GENERAL PLAN NOISE LEVEL STANDARDS
TRANSPORTATION (NON-AIRCRAFT) NOISE SOURCES

Noise-Sensitive Land Use	Outdoor Activity Areas[1]
	L_{dn} dB
Single-Family Residential	60
Multi-Family Residential, Hotels, and Motels	65
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds	65
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches	60
Office Buildings, Business Commercial, and Professional	70
Auditoriums, Concert Halls, Amphitheaters	70

Source: City of Newman General Plan

The General Plan provides noise level standards for stationary (non-transportation) noise sources. Table II provides the City of Newman noise level standards applicable to stationary noise sources.

TABLE II

NON-TRANSPORTATION NOISE LEVEL STANDARDS, dBA
CITY OF NEWMAN

Daytime (7 a.m.-10 p.m.)		Nighttime (10 p.m.-7 a.m.)	
L_{eq}	L_{max}	L_{eq}	L_{max}
55	75	45	65

Each of the noise level standards specified in Table HS-4 shall be reduced by five (5) dBA for pure tone noises, noise consisting primarily of speech or music, or for recurring impulsive noises. Where measured ambient noise levels exceed the standards, the standards shall be increased to the ambient levels.

The standards in Table HS-4 apply at residential or other noise- sensitive land uses, and not on the property of a noise-generating land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures. These noise level standards do not apply to residential units established in conjunction with industrial of commercial uses (e.g. caretaker dwellings).

Source: City of Newman General Plan

The General Plan also provides the following Policies and Actions in regards to noise level exposure, noise level standards and land use compatibility:

- Policy HS-6.1 As a guide for future planning and development decisions the City shall use the Noise and Land Use Compatibility Standards shown in Figure HS-5 (Table I above), the noise level performance standards indicated in Table HS-4 (Table II above) and the projected future noise contours for the buildout of the General Plan.

- Policy HS-6.2 Noise increases at noise sensitive land uses resulting from new projects shall be minimized. Noise-sensitive uses include residential, hotel/motel, schools, libraries, museums, meeting halls, care facilities, churches and hospitals. Exterior noise levels would be measured in residential backyards, patios, outdoor instructional areas of schools, outdoor courtyards and play areas at care facilities or at the property line of undeveloped lands designated as noise-sensitive uses.

- Policy HS-6.3 New non-transportation noise sources, including, but not limited to, industrial and commercial noise sources, mechanical equipment, amplified sound, and on-site truck circulation and deliveries, shall be mitigated so as not to exceed the noise level standards as indicated in Table HS-4 (Table II above).

- Policy HS-6.4 Noise can be mitigated through site design, building design and materials, landscaping, hours of operation and other techniques. This policy does not apply to noise sources as- sociated with operations on lands zoned for agricultural uses.

- Policy HS-6.5 The City shall minimize potential transportation-related noise through the use of setbacks, street circulation design, coordination of routing and other traffic control measures, the construction of noise barriers, and consider use of "quiet" pavements when resurfacing roadways.

- Policy HS-6.6 Where proposed new development of noise-sensitive uses is anticipated to exceed the noise level standards, an acoustical analysis shall be required so that noise mitigation may be included in the project design.

- Policy HS-6.7 New development of noise sensitive land uses shall not be permitted in noise impacted areas unless effective mitigation measures are incorporated into the project design to reduce exterior and interior noise levels to acceptable levels, as specified in Policy HS-6.1 and as follows:

  For new single-family residential development, maintain a standard of 60 L_{dn} (day/night average noise level) for exterior noise in private use areas.

  For new multi-family residential development maintain a standard of 65 L_{dn} in community outdoor recreation areas. Noise standards are not applied to private decks and balconies.

  Interior noise levels shall not exceed 45 L_{dn} in all new residential units (single- and multi-family). Development sites exposed to noise levels exceeding 60 L_{dn} shall be analyzed following protocols in Appendix Chapter 12, Section 1208, A, Sound Transmission Control, 2001 California Building Code.

  Where new residential units (single- and multi-family) would be exposed to intermittent noise levels generated during train operations, maximum

railroad noise levels inside homes shall not exceed 50 dBA in bedrooms or 55 dBA in other occupied spaces. These single event limits are only applicable where there are normally 4 or more train operations per day.

- Policy HS-6.8 Where noise mitigation measures are required to achieve the noise level standards, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered after practical design-related noise mitigation measures have been integrated into the project.

- Policy HS-6.10 No project shall be approved that would create noise levels at school sites that would exceeds 55 dBA, measured at the property lines of the school site.

- Policy HS-6.11 Land uses that emit excessive noise shall not be located adjacent to schools and other sensitive uses unless noise levels can be mitigated to an acceptable level.

- Action HS-6.1 Require the evaluation of mitigation measures for projects that would cause the following criteria to be exceeded or would cause a significant adverse community response:

  Cause the L_{dn} at noise-sensitive uses to increase by 3 dB or more and exceed the "normally acceptable" level, or

  Cause the L_{dn} at noise-sensitive uses to increase 5 dB or more and remain "normally acceptable".

- Action HS-6.2 Coordinate with the County Sheriff's Department to enforce the California Vehicle Code as it relates to adequate vehicle mufflers, modified exhaust systems and vehicle stereo systems.

- Action HS-6.3 Establish a noise abatement protocol for existing sensitive land uses located in areas anticipated to experience significant noise increases with the implementation of the General Plan. Cumulative traffic noise impacts on existing noise sensitive uses could be reduced through the inclusion of exterior and/or interior sound reduction measures such as set- backs, noise barriers, forced-air mechanical ventilation and sound rated window construction. The City should research sources of funding for these actions.

State of California

There are no state noise standards that are applicable to the project.

Federal Noise Standards

There are no federal noise standards that are applicable to the project.

b. Construction Noise and Vibration

The City of Newman General Plan provides the following guidance in relation to construction noise:

- Policy HS-6.9 During all phases of construction activity, reasonable noise reduction measures shall be utilized to minimize the exposure of neighboring properties to excessive noise levels.

  Noise reduction measures could include, but would not be limited to:

  Construction activities shall normally be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday, and 8 a.m. to 7 p.m. Saturday.

  Use available noise suppression devices and properly maintain and muffle loud construction equipment.

  Avoid staging of construction equipment and unnecessary idling of equipment within 200 feet of noise-sensitive land uses.

There are no state or federal standards that specifically address construction vibration. Some guidance is provided by the Caltrans Transportation and Construction Vibration Guidance Manual[2]. The Manual provides guidance for determining annoyance potential criteria and damage potential threshold criteria. These criteria are provided below in Table III and Table IV, and are presented in terms of peak particle velocity (PPV) in inches per second (in/sec).

TABLE III

GUIDELINE VIBRATION ANNOYANCE POTENTIAL CRITERIA

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.1
Severe	2.0	0.4

Source: Caltrans

TABLE IV

GUIDELINE VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile, historic buildings, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans

3. SETTING

The proposed Project is located on approximately 20.11-acres near the southern portion of the City of Newman, California. The project site is located west of (and adjacent to) Prince Road, approximately 0.5 miles south of Inyo Avenue. The site is comprised of two parcels: APN 026-071-001 and APN 026-071-004, to be annexed into the City of Newman. The project site currently consists of undeveloped agricultural land, with an existing residential structure and agricultural-related outbuildings.

a. Background Noise Level Measurements

Existing noise levels in the project vicinity are dominated by traffic noise along Prince Road and other local roadways and noise associated with various agricultural land uses near the project site. Measurements of existing ambient noise levels in the project vicinity were conducted on February 15 & 16, 2022. Long-term (24-hour) ambient noise level measurements were conducted at one (1) location (site LT-1). Ambient noise levels were measured for a period of 24 continuous hours at the long-term ambient noise measurement site. Site LT-1 was located within the eastern portion of the project site, along Prince Road. The location of long-term ambient noise monitoring site LT-1 is provided as Figure 2.

Measured hourly energy average noise levels (L_{eq}) at site LT-1 ranged from a low of 50.3 dB between 10:00 p.m. and 11:00 p.m. to a high of 63.4 dBA between 5:00 p.m. and 6:00 p.m. Hourly maximum (L_{max}) noise levels at site LT-1 ranged from 72.7 to 89.9 dBA. Residual noise levels at the monitoring site, as defined by the L_{90}, ranged from 35.0 to 49.0 dBA. The L_{90} is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The L_{90} is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources. The measured L_{dn} value at site LT-1 was 63.1 dB L_{dn}. Figure 3 graphically depicts hourly variations in ambient noise levels at site LT-1. Figure 4 provides a photograph of measurement site LT-1.

Additionally, short-term (15-minute) ambient noise level measurements were conducted at three (3) locations (Sites ST-1 through ST-3). Two (2) individual measurements were taken at each of the six short-term sites to quantify ambient noise levels in the morning and afternoon hours. The locations of the long-term and short-term noise monitoring sites are shown in Figure 2.

Table V summarizes short-term noise measurement results. The noise measurement data included energy average (L_{eq}) maximum (L_{max}) as well as five individual statistical parameters. Observations were made of the dominant noise sources affecting the measurements. The statistical parameters describe the percent of time a noise level was exceeded during the measurement period. For instance, the L_{90} describes the noise level exceeded 90 percent of the time during the measurement period, and is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources.

Short-term noise measurements were conducted for 15-minute periods at each of the three sites. Site ST-1 was located within the southwest portion of the project site; site ST-2 was located along Canyon Brook Lane, west of the project site; and site ST-3 was located near the northern portion of the project site, at the southern terminus of Caton Drive, south of Canyon Creek Drive. The locations of the short-term ambient noise measurement sites are provided as Figure 2.

TABLE V

SUMMARY OF SHORT-TERM NOISE MEASUREMENT DATA
CATON RANCH SUBDIVISION, NEWMAN
FEBRUARY 15 & 16, 2022

Site	Time	A-Weighted Decibels, dBA							Sources
		L_{eq}	L_{max}	L_2	L_8	L_{25}	L_{50}	L_{90}	
ST-1	8:30 a.m.	46.2	64.2	56.1	53.2	50.1	42.2	36.5	TR, AG, C
ST-1	5:05 p.m.	45.1	65.7	55.4	52.8	49.0	41.2	35.3	TR
ST-2	8:55 a.m.	47.2	67.3	58.0	56.4	52.0	43.7	38.1	TR, AG
ST-2	5:55 p.m.	48.4	66.6	57.4	55.2	52.3	44.8	37.6	TR, AG
ST-3	9:15 p.m.	51.1	78.2	64.0	56.0	51.1	44.8	36.2	TR, AG
ST-3	6:15 p.m.	48.4	71.5	61.3	53.6	49.5	42.0	35.2	TR, AG

TR: Traffic AC: Aircraft AG: Agricultural Activities C: Construction Activities B: Birds D: Barking Dogs
Source: WJV Acoustics, Inc.

4. NOISE IMPACTS TO OFF-SITE SENSITIVE RECEPTORS

a. Project Traffic Noise Impacts on Existing Noise-Sensitive Land Uses Outside Project Site (No Impact)

WJVA utilized the FHWA Traffic Noise Model[3] to quantify expected project-related increases in traffic noise exposure along roadways in the project vicinity. The FHWA Model is a standard analytical method used by state and local agencies for roadway traffic noise prediction. The model is based upon reference energy emission levels for automobiles, medium trucks (2 axles) and heavy trucks (3 or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within ±1.5 dB. To predict L_{dn} values, it is necessary to determine the hourly distribution of traffic for a typical day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Average Daily Traffic (ADT) volumes for the analyzed receptor locations were provided by the project traffic engineer, VRPA Technologies, Inc. Truck percentages and the day/night distribution of traffic were estimated by WJVA, based upon previous studies conducted in the project vicinity since project-specific data were not available from government sources. The Noise modeling assumptions used to calculate project traffic noise are provided as Appendix C.

Traffic noise exposure levels for 2024 Without Project, 2024 With Project, 2044 Cumulative Without Project and 2044 Cumulative With Project traffic scenarios were calculated based upon the FHWA Model and the above-described model inputs and assumptions. Project-related significant impacts would occur if an increase in traffic noise associated with the project would result in noise levels exceeding the City's applicable noise level standards at the location(s) of sensitive receptors. For the purpose of this analysis a significant impact was also assumed to occur if traffic noise levels were to increase by 3 dB at sensitive receptor locations where noise levels already exceed the City's applicable noise level standards (without the project), as 3 dB generally represents the threshold of perception in change for the human ear.

The City's exterior noise level standard for residential land uses is 60 dB L_{dn} for single-family residential land uses and 65 dB L_{dn} for multi-family residential land uses. Traffic noise was modeled at seven (7) receptor locations (six receptor locations for 2024 conditions). The seven modeled receptors are located at roadway setback distances representative of the sensitive receptors (residences) along each analyzed roadway segment with adjacent sensitive receptors. The receptor locations are described below and provided graphically on Figure 5.

- R-1: Residential land use located approximately 50 feet from the centerline of Inyo Ave.
- R-2: Residential land use located approximately 120 feet from the centerline of Inyo Ave.
- R-3: Residential land use located approximately 75 feet from the centerline of Prince Rd.
- R-4: Residential land use located approximately 140 feet from the centerline of SR 33.
- R-5: Residential land use located approximately 210 feet from the centerline of SR 33.

- R-6: Residential land use located approximately 85 feet from the centerline of SR 33. (R-6 Future Conditions Only)
- R-7: Residential land use located approximately 100 feet from the centerline of Inyo Ave.

2024 Conditions

Table VI provides 2024 traffic noise exposure levels at the six analyzed representative receptor locations, and also provides what the project contribution would be to 2024 plus project conditions.

TABLE VI

PROJECT CONTRIBUTION TO TRAFFIC NOISE, dB, L_{dn}
OPENING YEAR 2024 CONDITIONS
CATON RANCH, NEWMAN

Modeled Receptor	2024 Conditions Without Project Contribution	2024 Conditions Plus Project	Project Contribution	Significant Impact?
R-1	54	54	0	No
R-2	52	52	0	No
R-3	53	54	+1	No
R-4	54	54	0	No
R-5	51	51	0	No
R-7	46	46	0	No

Source: WJV Acoustics, Inc.
VRPA Technologies, Inc.

Reference to Table VI indicates that the project's contribution to 2024 traffic conditions noise exposure levels at the modeled representative receptor locations would not result in noise levels to exceed the City's noise level standard, nor result in an increase of 3 dB in any sensitive receptor locations where noise levels already exceed the City's noise level standard without the implementation of the project.

2044 Cumulative Conditions

Table VII provides 2044 Cumulative traffic noise exposure levels at the seven analyzed representative receptor locations, and also provides what the project contribution would be to 2044 Cumulative plus project conditions.

TABLE VII

PROJECT CONTRIBUTION TO TRAFFIC NOISE, dB, L_{dn}
HORIZON YEAR 2044 CUMULATIVE CONDITIONS
CATON RANCH, NEWMAN

Modeled Receptor	2044 Conditions Without Project Contribution	2044 Conditions Plus Project	Project Contribution	Significant Impact?
R-1	57	57	0	No
R-2	53	53	0	No
R-3	53	53	0	No
R-4	58	58	0	No
R-5	55	55	0	No
R-6	59	59	0	No
R-7	49	49	0	No

Source: WJV Acoustics, Inc.
VRPA Technologies, Inc.

Reference to Table VII indicates that the project's contribution to Cumulative 2044 traffic conditions noise exposure levels at the modeled representative receptor locations would not result in noise levels to exceed the City's noise level standard, nor result in an increase of 3 dB in any sensitive receptor locations where noise levels already exceed the City's noise level standard without the implementation of the project.

b. Noise from Construction (No Impact)

Construction noise would occur at various locations within and near the project site through the buildout period. Existing sensitive receptors could be located as close as 50 feet from construction activities. Table VIII provides typical construction-related noise levels at distances of 50, 100 feet, 200 feet, and 300 feet.

Construction noise is not considered to be a significant impact if construction is limited to the allowed hours and construction equipment is adequately maintained and muffled. Extraordinary noise-producing activities (e.g., pile driving) are not anticipated. The City of Newman provides hourly limitations on construction activities and provides best management practices that should be employed to minimize construction noise impacts.

TABLE VIII

TYPICAL CONSTRUCTION EQUIPMENT MAXIMUM NOISE LEVELS, dBA

Type of Equipment	50 Ft.	100 Ft.	200 Ft.	300 Ft.
Concrete Saw	90	84	78	74
Crane	81	75	69	65
Excavator	81	75	69	65
Front End Loader	79	73	67	63
Jackhammer	89	83	77	73
Paver	77	71	65	61
Pneumatic Tools	85	79	73	69
Dozer	81	76	70	66
Rollers	80	74	68	64
Trucks	86	80	72	70
Pumps	80	74	68	64
Scrapers	87	81	75	71
Portable Generators	81	74	68	64
Backhoe	86	80	74	70
Grader	86	80	74	70

Source: FHWA
Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987

A noise impact could occur if construction activities do not incorporate appropriate best management practices in regards to construction-related noise. The following construction-related guidelines and best management practices are provided within the City of Newman General Plan.

Guidelines and Best Management Practices:
The following guidelines and best management practices should be applied during periods of project construction.

- Construction activities shall normally be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday, and 8 a.m. to 7 p.m. Saturday.

- Use available noise suppression devices and properly maintain and muffle loud construction equipment.

- Avoid staging of construction equipment and unnecessary idling of equipment within 200 feet of noise-sensitive land uses.

c. Vibration Impacts (No Impact)

The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of these activities are anticipated to occur with construction or operation of the proposed project. Vibration from construction activities could be detected at the closest sensitive land uses, especially during movements by heavy equipment or loaded trucks and during some paving activities. Typical vibration levels at distances of 25, 100 feet and 300 feet are summarized by Table IX. These levels would not be expected to exceed any significant threshold levels for annoyance or damage, as provided above in Table III and Table IV.

TABLE IX

TYPICAL VIBRATION LEVELS DURING CONSTRUCTION

	PPV (in/sec)		
Equipment	**@ 25´**	**@ 100´**	**@ 300´**
Bulldozer (Large)	0.089	0.019	0.006
Bulldozer (Small)	0.003	0.0006	0.0002
Loaded Truck	0.076	0.017	0.005
Jackhammer	0.035	0.008	0.002
Vibratory Roller	0.210	0.046	0.013
Caisson Drilling	0.089	0.019	0.006

Source: *Caltrans*

5. NOISE IMPACTS TO PROPOSED ON-SITE SENSITIVE RECEPTORS

a. Traffic Noise Impacts To Proposed On-Site Receptors (No Impact)

The City of Newman General Plan Noise Element establishes an exterior noise level standard of 60 dB L_{dn} for outdoor activity areas of single-family residential uses. Outdoor activity areas generally include backyards of single-family residences. The noise element also requires that interior noise levels attributable to exterior noise sources not exceed 45 dB L_{dn}.

Exterior Noise Exposure

The proposed project includes sensitive receptors (residential land uses) that could be impacted by traffic noise exposure in the vicinity of Prince Road. WJVA used the above-described FHWA traffic noise model and traffic noise modeling assumptions to determine the distances from the center of Prince Road to the 60 dB L_{dn} noise exposure contours. Table X provides the distances from the center of the Prince Road, adjacent to the project site, to the 60 dB L_{dn} noise exposure contours. Table X provides the contour distances for 2044 Cumulative conditions as they represent a worst-case assessment of noise exposure at proposed sensitive receptor locations.

TABLE X

DISTANCES TO TRAFFIC NOISE CONTOURS
CATON RANCH SUBDIVISION, NEWMAN
CUMULATIVE 2044 CONDITIONS

Roadway Segment (Description)	Distance (feet)From Roadway Centerline to 60 dB L_{dn} Contour
Prince Road (n/o Project Site Entrance)	22
Prince Road (s/o Project Site Entrance)	17

Source: WJV Acoustics, Inc.

A noise impact could occur if the outdoor activity areas of proposed sensitive receptors are located within the cumulative conditions 60 dB L_{dn} traffic noise contours. As described in Table X, the distances from the center of Prince Road to the 60 dB Ldn noise exposure contour (2044 Cumulative conditions) was calculated to be 22 feet (north of Caton Ranch entrance) and 17 feet (south of Caton Ranch entrance). Based upon standard roadway widths as well as reference to the site plan (Figure 1) indicate that no outdoor activity areas would be expected to be located within the 60 dB L_{dn} traffic noise exposure contour, and therefore mitigation measures (e.g., sound wall) would not be required for compliance with the City of Newman exterior noise level standard for residential land use.

Interior Noise Exposure

The closest proposed lot to Prince Road (Lot 44) is located approximately 60 from the centerline of the roadway. The exact location of residential construction within Lot 44 was not known at the time this analysis was prepared. The worst-case exterior noise exposure at the property line (2044 Cumulative conditions) was calculated to be 52 dB L_{dn}.

The City of Newman interior noise level standard is 45 dB L_{dn}. In order to satisfy the City's interior noise level standard, the proposed residential construction must be capable of providing a minimum outdoor-to-indoor noise level reduction (NLR) of 7 dB (52-45=7).

A specific analysis of interior noise levels was not performed. However, it may be assumed that residential construction methods complying with current building code requirements will reduce exterior noise levels by a least 25 dB if windows and doors are closed. This will be sufficient for compliance with the City's 45 dB L_{dn} interior standard. Requiring that windows and doors remain closed for the required interior noise insulation means that air conditioning or mechanical ventilation will be required.

b. Noise Impacts from Nearby Airports or Airstrips (No Impact)

The Project site is not located within two miles of a public airport or private airstrip. The Gustine Municipal Airport is located approximately 4 miles southeast of the project site.

6. IMPACT SUMMARY

The proposed Caton Ranch Subdivision residential project will comply with all City of Newman exterior and interior noise level standards provided that air conditioning or mechanical ventilation is included in residential construction design, allowing doors and windows to remain closed for noise insulation purposes.

Construction Guidelines and Best Management Practices:
The following guidelines and best management practices should be applied during periods of project construction.

- Construction activities shall normally be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday, and 8 a.m. to 7 p.m. Saturday.

- Use available noise suppression devices and properly maintain and muffle loud construction equipment.

- Avoid staging of construction equipment and unnecessary idling of equipment within 200 feet of noise-sensitive land uses.

7. SOURCES CONSULTED

1. City of Newman, *Newman 2030 General Plan*, April 10, 2007

2. California Department of Transportation, *Transportation and Construction Vibration Guidance Manual,* April 2020

3. Federal Highway Administration, *Traffic Noise Model, Version 2.5,* April 14, 2004.

FIGURE 1: PROJECT SITE PLAN

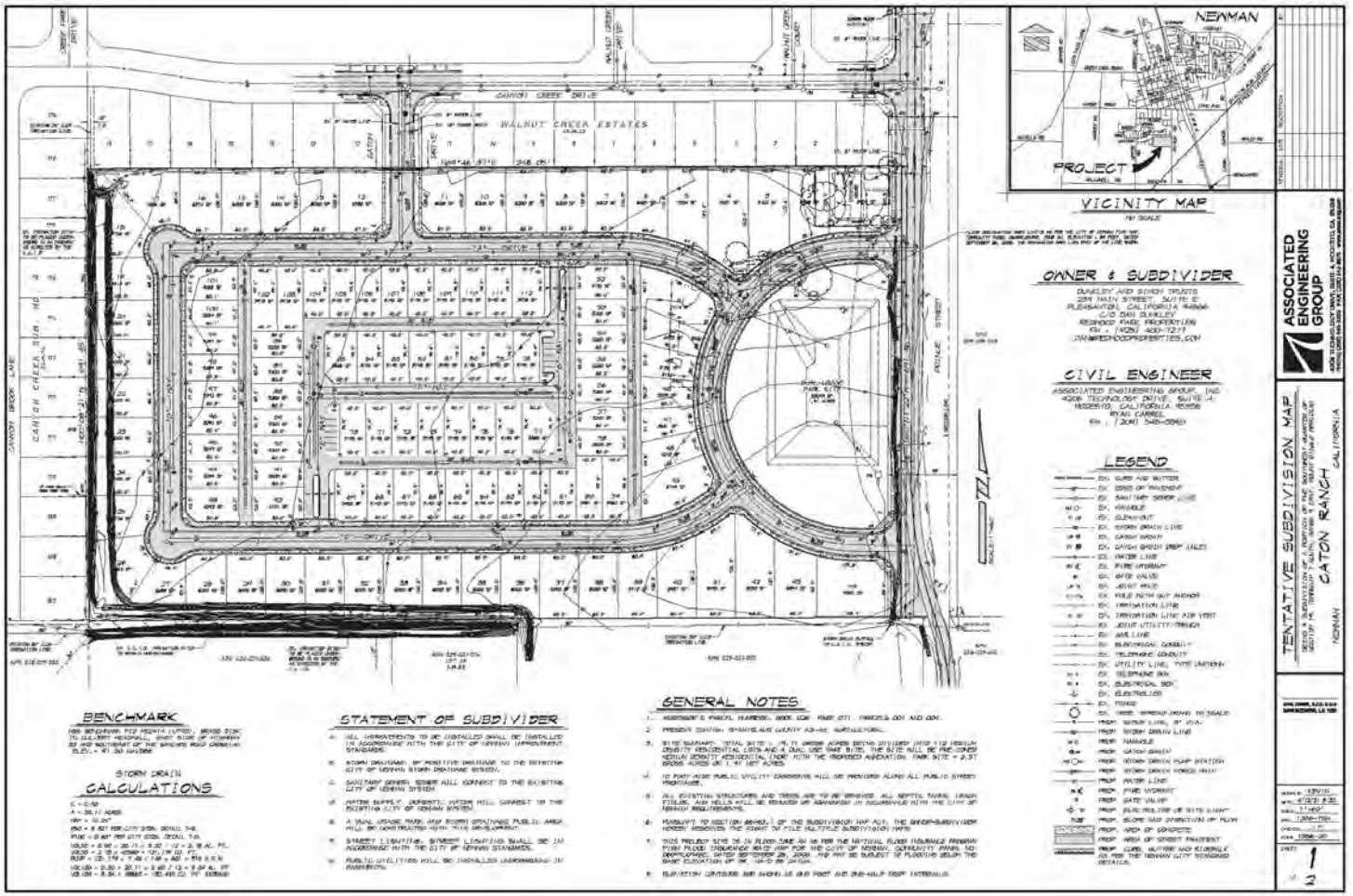

FIGURE 2: PROJECT VICINITY AND AMBIENT NOISE MONITORING SITES

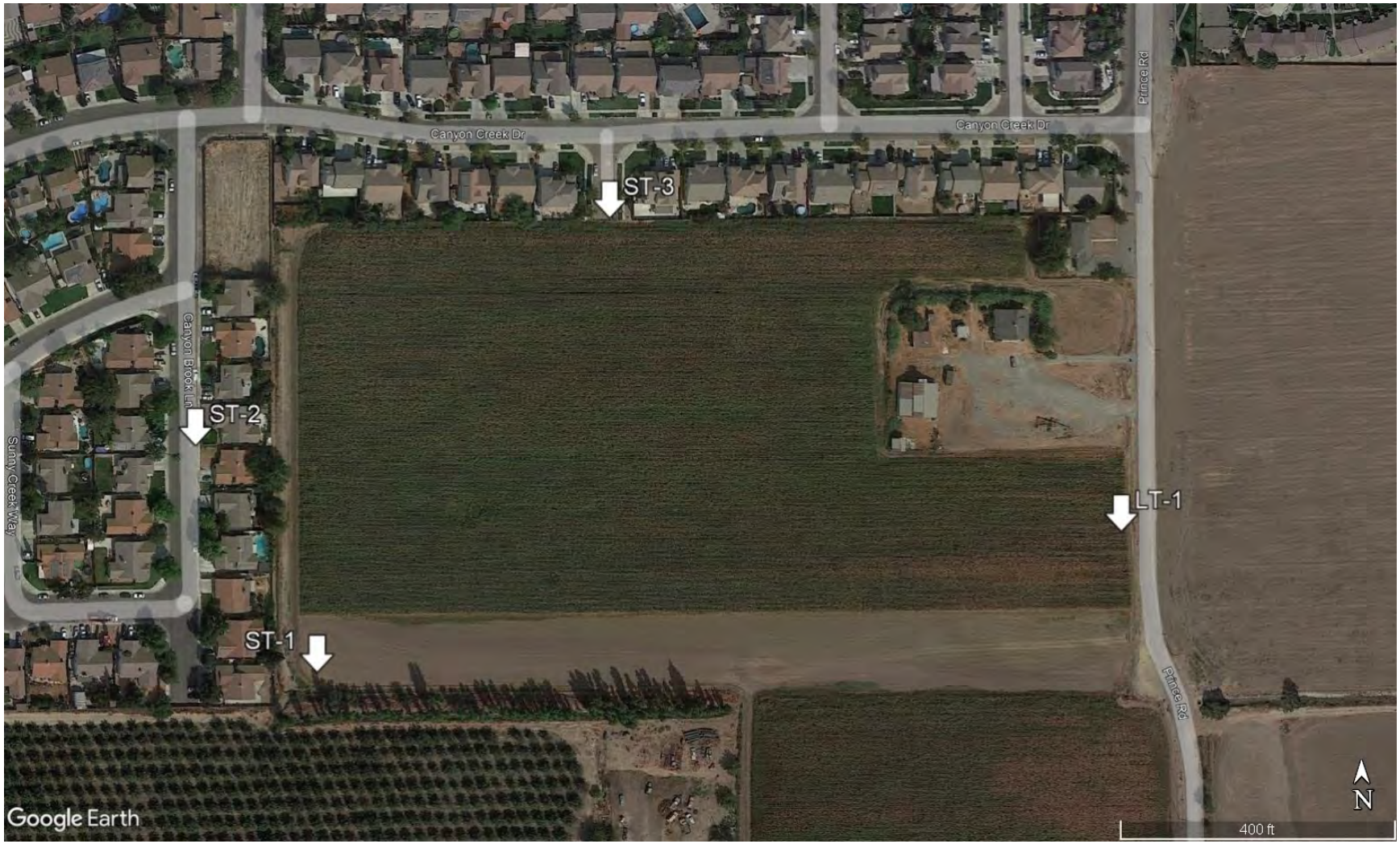

FIGURE 3: HOURLY NOISE LEVELS AT SITE LT-1

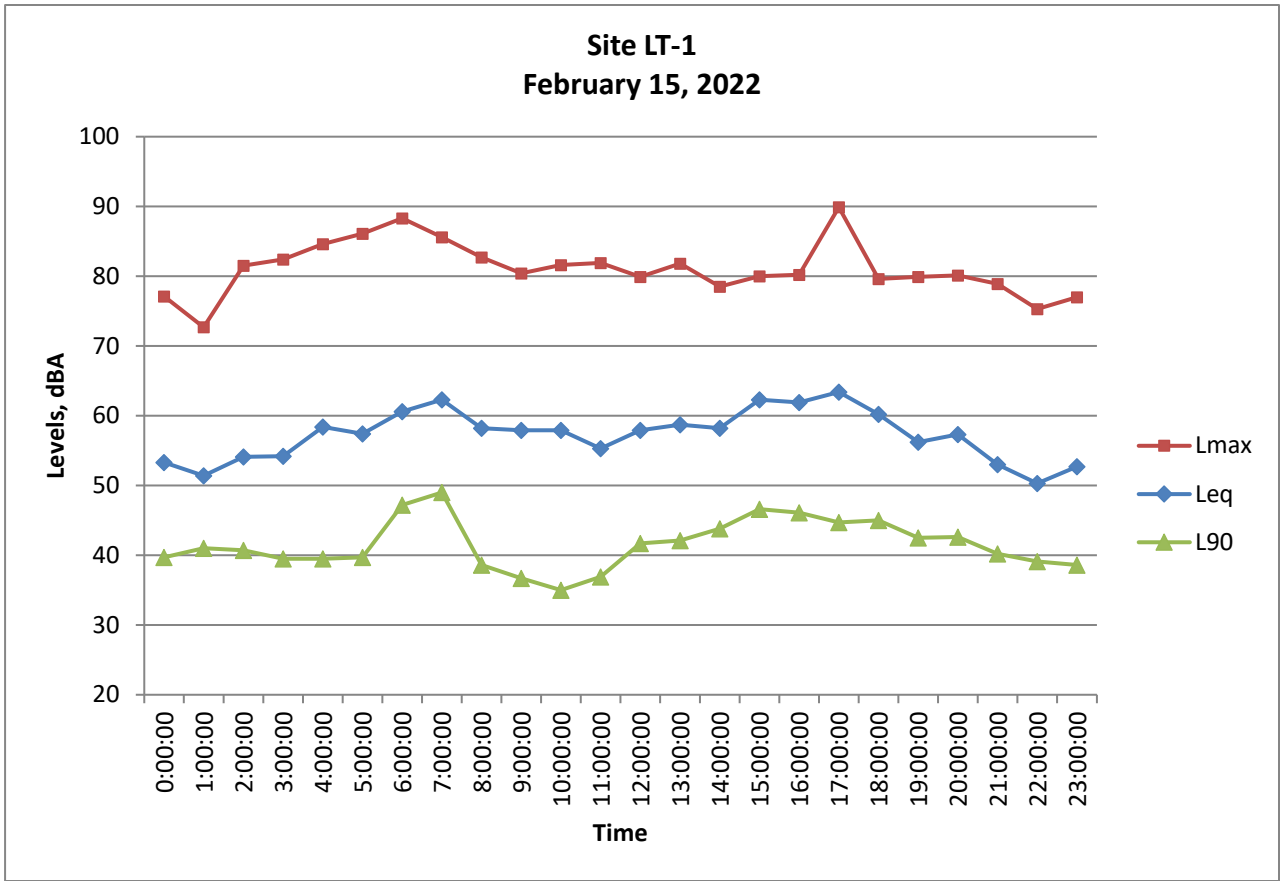

FIGURE 4: NOISE MEASUREMENT SITE LT-1

FIGURE 5: MODELED TRAFFIC NOISE RECEPTOR LOCATIONS

APPENDIX A-1

ACOUSTICAL TERMINOLOGY

AMBIENT NOISE LEVEL: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

DECIBEL, dB: A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

NOTE: The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

L_{max}: The maximum noise level recorded during a noise event.

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). For example, L_{10} equals the level exceeded 10 percent of the time.

ACOUSTICAL TERMINOLOGY

NOISE EXPOSURE CONTOURS: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

NOISE LEVEL REDUCTION (NLR): The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of "noise level reduction" combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL: The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

SOUND TRANSMISSION CLASS (STC): The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX B
EXAMPLES OF SOUND LEVELS

NOISE SOURCE	SOUND LEVEL	SUBJECTIVE DESCRIPTION
AMPLIFIED ROCK 'N ROLL ▸	120 dB	
JET TAKEOFF @ 200 FT ▸		DEAFENING
	100 dB	
BUSY URBAN STREET ▸		VERY LOUD
	80 dB	
FREEWAY TRAFFIC @ 50 FT ▸		LOUD
CONVERSATION @ 6 FT ▸	60 dB	
TYPICAL OFFICE INTERIOR ▸		MODERATE
SOFT RADIO MUSIC ▸	40 dB	
RESIDENTIAL INTERIOR ▸		FAINT
WHISPER @ 6 FT ▸	20 dB	
HUMAN BREATHING ▸		VERY FAINT
	0 dB	

APPENDIX C

TRAFFIC NOISE MODELING CALCULATIONS

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
October 20, 2022

Project #:	22-13
Description:	2024 NP
Ldn/Cnel:	Ldn
Site Type:	Soft

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	SR 33	n/o Inyo Ave R-4	10400	90		10	2	1	25	140	
2	SR 33	s/o Inyo Ave R-5	8630	90		10	2	1	25	210	
3	Inyo Ave	w/o SR 33	4280	90		10	2	1	25	100	
4	Inyo Ave	e/o SR 33 R-7	970	90		10	2	1	25	100	
5	Inyo Ave	w/o Prince Road R-1	2310	90		10	2	1	25	50	
6	Inyo Ave	e/o Prince Road R-2	4740	90		10	2	1	25	120	
7	Prince Road	s/o Inyo Ave R-3	2990	90		10	2	1	25	75	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
October 20, 2022

Project #:	22-13
Description:	2024 +Project
Ldn/Cnel:	Ldn
Site Type:	Soft

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	SR 33	n/o Inyo Ave R-4	11120	90		10	2	1	25	140	
2	SR 33	s/o Inyo Ave R-5	8740	90		10	2	1	25	210	
3	Inyo Ave	w/o SR 33	5160	90		10	2	1	25	100	
4	Inyo Ave	e/o SR 33 R-7	1020	90		10	2	1	25	100	
5	Inyo Ave	w/o Prince Road R-1	2360	90		10	2	1	25	50	
6	Inyo Ave	e/o Prince Road R-2	5620	90		10	2	1	25	120	
7	Prince Road	s/o Inyo Ave R-3	3920	90		10	2	1	25	75	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
October 20, 2022

Project #:	22-13
Description:	2044 No Project
Ldn/Cnel:	Ldn
Site Type:	Soft

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	SR 33	n/o Inyo Ave R-4	23310	90		10	2	1	25	140	
2	SR 33	s/o Inyo Ave R-5	22800	90		10	2	1	25	210	
3	Inyo Ave	w/o SR 33	5740	90		10	2	1	25	100	
4	Inyo Ave	e/o SR 33 R-7	1990	90		10	2	1	25	100	
5	Inyo Ave	w/o Prince Road R-1	3990	90		10	2	1	25	50	
6	Inyo Ave	e/o Prince Road R-2	6410	90		10	2	1	25	120	
7	Prince Road	s/o Inyo Ave R-3	3100	90		10	2	1	25	75	
8	SR 33	n/o MR	22630	90		10	2	1	25	100	
9	SR 33	s/o MR R-6	14870	90		10	2	1	25	85	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
October 20, 2022

Project #:	22-13
Description:	2044 + Project
Ldn/Cnel:	Ldn
Site Type:	Soft

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	SR 33	n/o Inyo Ave R-4	23890	90		10	2	1	25	140	
2	SR 33	s/o Inyo Ave R-5	23360	90		10	2	1	25	210	
3	Inyo Ave	w/o SR 33	5960	90		10	2	1	25	100	
4	Inyo Ave	e/o SR 33 R-7	2040	90		10	2	1	25	100	
5	Inyo Ave	w/o Prince Road R-1	4050	90		10	2	1	25	50	
6	Inyo Ave	e/o Prince Road R-2	6640	90		10	2	1	25	120	
7	Prince Road	s/o Inyo Ave R-3	3390	90		10	2	1	25	75	
8	SR 33	n/o MR	23240	90		10	2	1	25	100	
9	SR 33	s/o MR R-6	14980	90		10	2	1	25	85	
10	Prince Road	n/o CR	2570	90		10	2	1	25	100	
11	Prince Road	s/o CR	1680	90		10	2	1	25	60	

Vehicle Miles Traveled Analysis

G

APPENDIX

DRAFT

MEMORANDUM

TO: Justin Hendrix, City of Newman

FROM: Erik Ruehr, VRPA Technologies, Inc.

DATE: May 6, 2022

RE: Caton Ranch
Vehicle Miles Traveled (VMT) Analysis

This memorandum provides a vehicle miles traveled (VMT) analysis for the proposed Caton Ranch residential development in the City of Newman. The analysis was conducted to meet the requirements for transportation analysis under the California Environmental Quality Act (CEQA). The remainder of the memorandum includes sections describing background information, the project description, trip generation, VMT analysis methodology, VMT screening analysis, and VMT analysis.

BACKGROUND INFORMATION

Per the requirements of Senate Bill 743 (SB 743), VMT is the new performance measure used in CEQA transportation analysis. VMT became the required performance measure on July 1, 2020 replacing the previous performance measure which was level of service (LOS). The VMT generated by land development projects is compared to various screening criteria and significance thresholds to determine whether the level of VMT would be considered to be significant.

CEQA allows agencies to adopt formal methodologies and thresholds of significance that will be used for environmental evaluation or to use methodologies and thresholds of significance determined on a case-by-case basis. The City of Newman has not adopted methodologies and thresholds of significance for VMT analysis and the analysis conducted for this project was based on statewide guidance as well as regional guidance provided by other agencies located in the San Joaquin Valley.

Additional detail is provided in the sections that follow.

4630 W. Jennifer, Suite 105, Fresno, CA 93722 • Phone (559) 271-1200 • Fax (559) 271-1269
www.vrpatechnologies.com

PROJECT DESCRIPTION

The project is located west of Prince Road and south of Canyon Creek Drive. Plans call for development of 112 single-family residential units. Exhibit 1 shows the project site plan.

TRIP GENERATION

Exhibit 2 shows the expected trip generation for the project as determined by the Institute of Transportation Engineers Trip Generation Manual, 10th Edition. A total of 1,120 daily trips, 83 AM peak hour trips, and 111 PM peak hour trips are expected to be generated.

VMT ANALYSIS METHODOLOGY

The methodology for VMT analysis was developed in consideration of statewide and regional guidance. The Governor's Office of Planning and Research (OPR) has provided statewide guidance for VMT analysis in its Technical Advisory for Evaluating Transportation Impacts in CEQA (OPR 2018).

Rather than relying on statewide guidance, many agencies throughout California have prepared guidance that takes into account factors specific to regional and/or local conditions. At the time of this VMT analysis, regional guidance was not available through the Stanislaus Council of Governments (StanCOG) or Stanislaus County. Therefore, regional guidance prepared within the San Joaquin Valley was considered.

VMT guidance provided by three agencies in the San Joaquin Valley, the Fresno Council of Governments (Fresno COG), the City of Fresno, and the City of Visalia was considered to be applicable in the City of Newman. Although the guidance provided by these three agencies is very similar, the guidance provided by Fresno COG is specifically referenced for VMT analysis of the Caton Ranch project.

Both the statewide VMT analysis guidance prepared by OPR and the VMT guidance provided by Fresno COG mention the use of a screening process to determine whether projects can be screened out of requiring a detailed VMT analysis and be presumed to have a less than significant impact. The OPR guidance includes the following statement:

"Many agencies use 'screening thresholds' to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. (See e.g., CEQA Guidelines, §§ 15063(c)(3)(C), 15128, and Appendix G.) As explained below, this technical advisory suggests that lead agencies may screen out VMT impacts using project size, maps, transit availability, and provision of affordable housing."

Fresno COG recommends that a project may be screened out of requiring a detailed VMT analysis due to proximity to transit, project type (retail, affordable housing, or government/public service, small project size, or location within a low VMT area. Of these, only small project size was considered to be applicable to the Caton Ranch project.

The determination of maximum project size for which detailed VMT analysis is not required is based on the analysis on page 11 of the Fresno County SB 743 Implementation Regional Guidelines (Fresno COG 2021). The Fresno COG screening guidelines reference a GHG emission threshold of 3,000 metric tons of carbon dioxide equivalent per year. Fresno COG then uses a generalized assumption that 50% of the GHG emissions from a project result from vehicle emissions. This allows Fresno COG to relate the threshold of 3,000 metric tons of carbon dioxide per year to project size expressed in terms of VMT generated per day and daily trip generation.

For the Caton Ranch project, the GHG threshold of 3,000 metric tons of carbon dioxide per year from the Fresno COG guidance was used, but instead of using a generalized assumption that 50% of project GHG emissions from a project result from vehicle emissions, the CalEEmod air quality analysis model was used to determine VMT generation specific to the Caton Ranch project. This analysis is described in the section that follows.

In summary, the VMT analysis methodology can be described as follows:

- ✓ As described in OPR and Fresno COG guidance, a screening process was conducted to determine whether the project could be screened out of requiring a VMT analysis.

- ✓ The determination of maximum project size for which detailed VMT analysis is not required was based on a threshold of generation of no more than 3,000 metric tons of carbon dioxide equivalent per year as is used by Fresno COG.

- ✓ A model run of the CalEEMod air quality analysis model was used to relate the generation of metric tons of carbon dioxide to daily VMT generation and daily trips generation.

This analysis is described in the section that follows.

VMT SCREENING ANALYSIS

A screening analysis was conducted to determine whether the project exceeded the maximum project size for which detailed VMT analysis is not required. This analysis can be described as follows:

- ✓ A GHG emission threshold of significance of 3,000 was used as the starting point of the analysis.

- ✓ The CalEEMod air quality analysis model was run for this project, resulting in an estimate that 1,137 metric tons of carbon dioxide would be produced by vehicle trips associated with the project and that this would account for 79% of total project GHG. Results from the CalEEMod model are included as an attachment.

- ✓ Since project GHG emissions produced by vehicles are 1,137 metric tons per year, project total GHG emissions would be 1,439 metric tons per year (1,137 divided by 0.79).

- ✓ With estimated annual total GHG emissions of 1,439 metric tons per year, the project falls below the threshold of 3,000 metric tons per year at which a detailed VMT analysis would be necessary.

The project is screened out of requiring a detailed VMT analysis because the GHG emissions from vehicle trips plus trips from other sources falls below the threshold of 3,000 metric tons of carbon monoxide per year.

VMT ANALYSIS

The project is screened out of requiring a detailed VMT analysis due to small project size. It is therefore presumed to have a less than significant VMT impact.

Please contact me if you have any questions. I can be reached by email at eruehr@vrpatechnologies.com or by phone at 858/361-7151.

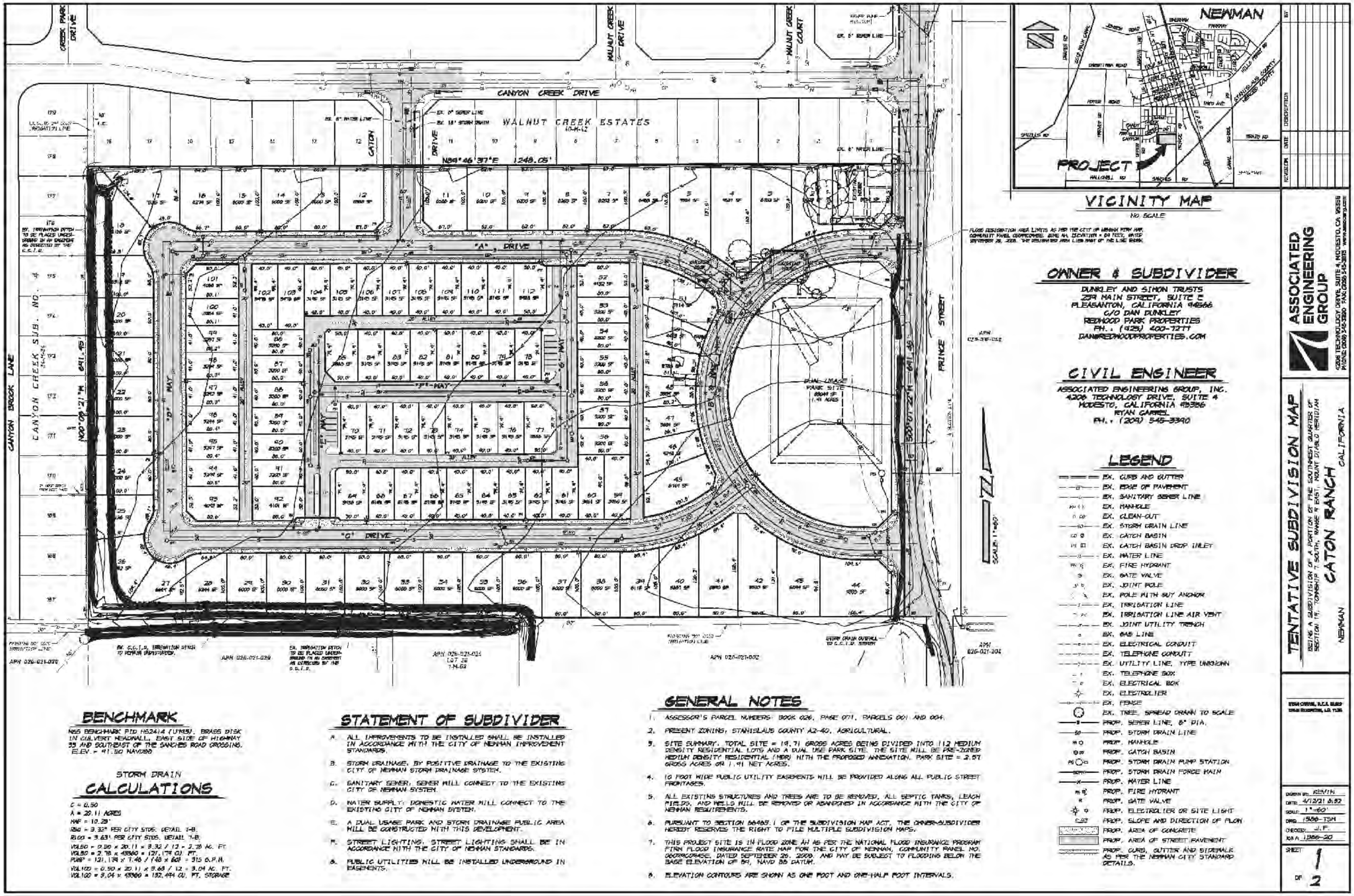
CANYON CREEK DRIVE
WALNUT CREEK ESTATES
WALNUT CREEK DRIVE
WALNUT CREEK COURT
"A" DRIVE
"C" DRIVE
"D" WAY
PRINCE STREET
CANYON BROOK LANE
CANYON CREEK SUB. NO.
DUAL USAGE PARK SITE
SCALE: 1"=60'
VICINITY MAP
NO SCALE
NEWMAN
PROJECT
OWNER & SUBDIVIDER
DUNKLEY AND SIMON TRUSTS
239 MAIN STREET, SUITE E
PLEASANTON, CALIFORNIA 94566
C/O DAN DUNKLEY
REDWOOD PARK PROPERTIES
PH.: (925) 400-7277
DAN@REDWOODPROPERTIES.COM
CIVIL ENGINEER
ASSOCIATED ENGINEERING GROUP, INC.
4206 TECHNOLOGY DRIVE, SUITE 4
MODESTO, CALIFORNIA 95356
RYAN CARREL
PH.: (209) 545-3390
LEGEND
EX. CURB AND GUTTER
EX. EDGE OF PAVEMENT
EX. SANITARY SEWER LINE
EX. MANHOLE
EX. CLEAN-OUT
EX. STORM DRAIN LINE
EX. CATCH BASIN
EX. CATCH BASIN DROP INLET
EX. WATER LINE
EX. FIRE HYDRANT
EX. GATE VALVE
EX. JOINT POLE
EX. POLE WITH GUY ANCHOR
EX. IRRIGATION LINE
EX. IRRIGATION LINE AIR VENT
EX. JOINT UTILITY TRENCH
EX. GAS LINE
EX. ELECTRICAL CONDUIT
EX. TELEPHONE CONDUIT
EX. UTILITY LINE, TYPE UNKNOWN
EX. TELEPHONE BOX
EX. ELECTRICAL BOX
EX. ELECTROLIER
EX. FENCE
EX. TREE, SPREAD DRAWN TO SCALE
PROP. SEWER LINE, 8" DIA.
PROP. STORM DRAIN LINE
PROP. MANHOLE
PROP. CATCH BASIN
PROP. STORM DRAIN PUMP STATION
PROP. STORM DRAIN FORCE MAIN
PROP. WATER LINE
PROP. FIRE HYDRANT
PROP. GATE VALVE
PROP. ELECTROLIER OR SITE LIGHT
PROP. SLOPE AND DIRECTION OF FLOW
PROP. AREA OF CONCRETE
PROP. AREA OF STREET PAVEMENT
PROP. CURB, GUTTER AND SIDEWALK AS PER THE NEWMAN CITY STANDARD DETAILS.
BENCHMARK
NGS BENCHMARK PID HS2414 (U145), BRASS DISK IN CULVERT HEADWALL, EAST SIDE OF HIGHWAY 33 AND SOUTHEAST OF THE SANCHES ROAD CROSSING. ELEV.= 91.50 NAVD88
STORM DRAIN CALCULATIONS
C = 0.50
A = 20.11 ACRES
MAP = 10.29"
R50 = 3.32" PER CITY STDS. DETAIL 7-B.
R100 = 3.63" PER CITY STDS. DETAIL 7-B.
VOL50 = 0.50 x 20.11 x 3.32 / 12 = 2.78 AC. FT.
VOL50 = 2.78 x 43560 = 121,179 CU. FT.
PUMP = 121,179 x 7.48 / (48 x 60) = 315 G.P.M.
VOL100 = 0.50 x 20.11 x 3.63 / 12 = 3.04 AC. FT.
VOL100 = 3.04 x 43560 = 132,494 CU. FT. STORAGE
STATEMENT OF SUBDIVIDER
A. ALL IMPROVEMENTS TO BE INSTALLED SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF NEWMAN IMPROVEMENT STANDARDS.
B. STORM DRAINAGE: BY POSITIVE DRAINAGE TO THE EXISTING CITY OF NEWMAN STORM DRAINAGE SYSTEM.
C. SANITARY SEWER: SEWER WILL CONNECT TO THE EXISTING CITY OF NEWMAN SYSTEM.
D. WATER SUPPLY: DOMESTIC WATER WILL CONNECT TO THE EXISTING CITY OF NEWMAN SYSTEM.
E. A DUAL USAGE PARK AND STORM DRAINAGE PUBLIC AREA WILL BE CONSTRUCTED WITH THIS DEVELOPMENT.
F. STREET LIGHTING: STREET LIGHTING SHALL BE IN ACCORDANCE WITH THE CITY OF NEWMAN STANDARDS.
G. PUBLIC UTILITIES WILL BE INSTALLED UNDERGROUND IN EASEMENTS.
GENERAL NOTES
1. ASSESSOR'S PARCEL NUMBERS: BOOK 026, PAGE 071, PARCELS 001 AND 004.
2. PRESENT ZONING: STANISLAUS COUNTY A2-40, AGRICULTURAL.
3. SITE SUMMARY: TOTAL SITE = 19.71 GROSS ACRES BEING DIVIDED INTO 112 MEDIUM DENSITY RESIDENTIAL LOTS AND A DUAL USE PARK SITE. THE SITE WILL BE PRE-ZONED MEDIUM DENSITY RESIDENTIAL (MDR) WITH THE PROPOSED ANNEXATION. PARK SITE = 2.57 GROSS ACRES OR 1.91 NET ACRES.
4. 10 FOOT WIDE PUBLIC UTILITY EASEMENTS WILL BE PROVIDED ALONG ALL PUBLIC STREET FRONTAGES.
5. ALL EXISTING STRUCTURES AND TREES ARE TO BE REMOVED. ALL SEPTIC TANKS, LEACH FIELDS, AND WELLS WILL BE REMOVED OR ABANDONED IN ACCORDANCE WITH THE CITY OF NEWMAN REQUIREMENTS.
6. PURSUANT TO SECTION 66463.1 OF THE SUBDIVISION MAP ACT, THE OWNER-SUBDIVIDER HEREBY RESERVES THE RIGHT TO FILE MULTIPLE SUBDIVISION MAPS.
7. THIS PROJECT SITE IS IN FLOOD ZONE AH AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM FLOOD INSURANCE RATE MAP FOR THE CITY OF NEWMAN, COMMUNITY PANEL NO. 06099C0945E, DATED SEPTEMBER 26, 2008, AND MAY BE SUBJECT TO FLOODING BELOW THE BASE ELEVATION OF 89, NAVD 88 DATUM.
8. ELEVATION CONTOURS ARE SHOWN AS ONE FOOT AND ONE-HALF FOOT INTERVALS.
ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
TENTATIVE SUBDIVISION MAP
CATON RANCH
NEWMAN
CALIFORNIA
SHEET 1 OF 2

Exhibit 2

Caton Ranch

Project Trip Generation

LAND USE (ITE LAND USE CODE)	Quantity	DAILY TRIP ENDS (ADT)		WEEKDAY AM PEAK HOUR					WEEKDAY PM PEAK HOUR				
		RATE	VOLUME	RATE	IN:OUT SPLIT	VOLUME			RATE	IN:OUT SPLIT	VOLUME		
						IN	OUT	TOTAL			IN	OUT	TOTAL
Single Family Residential (210)	112	10.0	1,120	0.74	25:75	21	62	83	0.99	63:37	70	41	111

ATTACHMENT

CALEEMOD RESULTS

Caton Ranch Residential Subdivision, Newman CA - Proposed - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Caton Ranch Residential Subdivision, Newman CA - Proposed

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	4.10	Acre	4.10	178,596.00	0
Other Non-Asphalt Surfaces	1.91	Acre	1.91	83,199.60	0
Single Family Housing	112.00	Dwelling Unit	14.93	201,600.00	320

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Storm basin and street infrastructure from TM

Demolition - SFDs and Ancillary Structures

Vehicle Trips - Trip Rate from VRPA Tech 2022

Woodstoves - .

Energy Use - Comliance with 2019 Title 24 BEES
100% Elec demand from renewable sources

Water And Wastewater - Project will connect to municipal sewer

Land Use Change -

Mobile Land Use Mitigation -

Area Mitigation - Compliance with AB 1346

Energy Mitigation -

Water Mitigation - Compliance with State MWELO

Waste Mitigation - Compliance with AB 341

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	250.00
tblEnergyUse	NT24E	6,155.97	0.00
tblEnergyUse	T24E	142.58	0.00
tblLandUse	LotAcreage	36.36	14.93
tblVehicleTrips	ST_TR	9.54	10.00
tblVehicleTrips	SU_TR	8.55	10.00
tblVehicleTrips	WD_TR	9.44	10.00
tblWater	AerobicPercent	87.46	97.79
tblWater	AerobicPercent	87.46	97.79
tblWater	AerobicPercent	87.46	97.79
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

Caton Ranch Residential Subdivision, Newman CA - Proposed - Stanislaus County, Annual

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
Year	tons/yr										MT/yr					
2023	0.3032	2.6302	2.8301	6.4400e-003	0.4209	0.1117	0.5326	0.1578	0.1043	0.2621	0.0000	574.0587	574.0587	0.1032	0.0186	582.1879
2024	3.4002	1.5213	1.9671	4.4800e-003	0.1403	0.0609	0.2012	0.0380	0.0572	0.0953	0.0000	400.7160	400.7160	0.0576	0.0161	406.9553
Maximum	**3.4002**	**2.6302**	**2.8301**	**6.4400e-003**	**0.4209**	**0.1117**	**0.5326**	**0.1578**	**0.1043**	**0.2621**	**0.0000**	**574.0587**	**574.0587**	**0.1032**	**0.0186**	**582.1879**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2023	3-31-2023	1.0479	1.0479
2	4-1-2023	6-30-2023	0.6239	0.6239
3	7-1-2023	9-30-2023	0.6308	0.6308
4	10-1-2023	12-31-2023	0.6360	0.6360
5	1-1-2024	3-31-2024	0.5925	0.5925
6	4-1-2024	6-30-2024	0.5874	0.5874
7	7-1-2024	9-30-2024	0.8504	0.8504
		Highest	1.0479	1.0479

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	1.3214	0.0946	3.4125	9.3100e-003		0.4576	0.4576		0.4576	0.4576	60.3579	49.4699	109.8277	0.2838	8.9000e-004	117.1871
Energy	0.0143	0.1221	0.0520	7.8000e-004		9.8700e-003	9.8700e-003		9.8700e-003	9.8700e-003	0.0000	158.0746	158.0746	5.4100e-003	2.9200e-003	159.0797
Mobile	0.5734	0.8941	5.3073	0.0121	1.2293	0.0109	1.2402	0.3289	0.0103	0.3392	0.0000	1,118.0164	1,118.0164	0.0635	0.0589	1,137.1495
Waste						0.0000	0.0000		0.0000	0.0000	5.8461	0.0000	5.8461	0.3455	0.0000	14.4836
Water						0.0000	0.0000		0.0000	0.0000	2.5818	5.0522	7.6340	0.0683	5.7100e-003	11.0444
Total	**1.9091**	**1.1108**	**8.7717**	**0.0222**	**1.2293**	**0.4784**	**1.7077**	**0.3289**	**0.4777**	**0.8066**	**68.7858**	**1,330.6131**	**1,399.3988**	**0.7665**	**0.0684**	**1,438.9443**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.61**	**0.18**	**2.22**	**0.09**	**0.00**	**0.24**	**0.07**	**0.00**	**0.24**	**0.14**	**20.32**	**0.04**	**1.27**	**57.50**	**0.01**	**2.96**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	-114.7000
Total	**-114.7000**

4.0 Operational Detail - 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					
Unmitigated	0.5734	0.8941	5.3073	0.0121	1.2293	0.0109	1.2402	0.3289	0.0103	0.3392	0.0000	1,118.0164	1,118.0164	0.0635	0.0589	1,137.1495

4.2 Trip Summary Information

Caton Ranch Residential Subdivision, Newman CA - Proposed - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,120.00	1,120.00	1120.00	3,282,677	3,282,677
Total	1,120.00	1,120.00	1,120.00	3,282,677	3,282,677

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	48.40	13.90	37.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.530702	0.051956	0.166139	0.152700	0.030655	0.007634	0.013363	0.016357	0.000829	0.000302	0.024359	0.001347	0.003656
Other Non-Asphalt Surfaces	0.530702	0.051956	0.166139	0.152700	0.030655	0.007634	0.013363	0.016357	0.000829	0.000302	0.024359	0.001347	0.003656
Single Family Housing	0.530702	0.051956	0.166139	0.152700	0.030655	0.007634	0.013363	0.016357	0.000829	0.000302	0.024359	0.001347	0.003656

5.0 Energy Detail

Historical Energy Use: N

	ROG	NOx	CO	SO2	Fugitive 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 Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	16.6719	16.6719	2.7000e-003	3.3000e-004	16.8367
NaturalGas Unmitigated	0.0143	0.1221	0.0520	7.8000e-004		9.8700e-003	9.8700e-003		9.8700e-003	9.8700e-003	0.0000	141.4027	141.4027	2.7100e-003	2.5900e-003	142.2430

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					
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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
Single Family Housing	2.64979e+006	0.0143	0.1221	0.0520	7.8000e-004		9.8700e-003	9.8700e-003		9.8700e-003	9.8700e-003	0.0000	141.4027	141.4027	2.7100e-003	2.5900e-003	142.2430
Total		**0.0143**	**0.1221**	**0.0520**	**7.8000e-004**		**9.8700e-003**	**9.8700e-003**		**9.8700e-003**	**9.8700e-003**	**0.0000**	**141.4027**	**141.4027**	**2.7100e-003**	**2.5900e-003**	**142.2430**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	180190	16.6719	2.7000e-003	3.3000e-004	16.8367
Total		**16.6719**	**2.7000e-003**	**3.3000e-004**	**16.8367**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

	ROG	NOx	CO	SO2	Fugitive 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					

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated	1.3214	0.0946	3.4125	9.3100e-003		0.4576	0.4576		0.4576	0.4576	60.3579	49.4699	109.8277	0.2838	8.9000e-004	117.1871

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	0.1947					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8043					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.3092	0.0870	2.7810	9.2800e-003		0.4542	0.4542		0.4542	0.4542	60.3579	48.5192	108.8771	0.2831	8.9000e-004	116.2194
Landscaping	0.0132	7.6000e-003	0.6314	3.0000e-005		3.4400e-003	3.4400e-003		3.4400e-003	3.4400e-003	0.0000	0.9506	0.9506	6.8000e-004	0.0000	0.9677
Total	**1.3214**	**0.0946**	**3.4125**	**9.3100e-003**		**0.4576**	**0.4576**		**0.4576**	**0.4576**	**60.3579**	**49.4699**	**109.8277**	**0.2838**	**8.9000e-004**	**117.1871**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	7.6340	0.0683	5.7100e-003	11.0444

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.29725 / 4.31981	7.6340	0.0683	5.7100e-003	11.0444
Total		**7.6340**	**0.0683**	**5.7100e-003**	**11.0444**

8.0 Waste Detail

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	5.8461	0.3455	0.0000	14.4836

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	28.8	5.8461	0.3455	0.0000	14.4836
Total		**5.8461**	**0.3455**	**0.0000**	**14.4836**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-114.7000	0.0000	0.0000	-114.7000

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	18.5 / 0	-114.7000	0.0000	0.0000	-114.7000
Total		**-114.7000**	**0.0000**	**0.0000**	**-114.7000**