Final Environmental Impact Report for Tract 936, Summers Pointe

July 2023

Prepared By:

4Creeks, Inc.
324 S Santa Fe, Suite A
Visalia, CA 93292

Prepared For:

County of Kings
1400 W. Lacey Blvd
Hanford, CA 93230

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County of Kings
1400 W. Lacey Blvd
Hanford, CA 93230

Executive Summary

Project Title: Tract 936 Summers Pointe

This Final Environmental Impact Report (EIR) has been prepared to address the environmental effects associated with the implementation of the proposed Tract 936 Map for the Summers Pointe residential project. Hollyhills Group has submitted an application to the County of Kings for the construction of 109 single-family homes on 20.08 acres of agricultural land within the Armona Community.

The County of Kings, as the Lead Agency under the California Environmental Quality Act (CEQA), has prepared this EIR for the proposed project. This EIR is an informational document for the general public and governmental agencies to review and evaluate the proposed project. The reader should not rely exclusively on the Executive Summary as the sole basis for judgment of the proposed project and alternatives; rather, the complete EIR should be consulted for specific information about the environmental effects and the implementation of associated mitigation measures.

ES.1.1 Summary of Proposed Project

The Project proposes a 109-unit, single-family residential development on 20.08 gross acres in the County of Kings, within the community of Armona. The Project site's existing and proposed zoning is R-1-6, Single-Family Residential. The project includes 109 single-family homes, with an average lot size of 5,094 square feet, as well as an existing home on approximately one acre. The Project also proposes a 1.7-acre onsite drainage basin.

The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities, new residential streets, and the continuation and improvement of Crocus Way. The Project would require no demolition as the site is currently on agricultural land, and the existing home on the site will remain.

ES.1.2 Project Location

The proposed project site is located within the County of Kings within the Armona Community Plan, South of W. Lacy Boulevard, North of Front Street, and East of 14th Avenue. The site is approximately .3 miles Northwest of the Armona downtown, and approximately 3 miles East of the Hanford Downtown. The Project involves construction on approximately 20.08 acres on Parcels 017-100-012 and 017-100-013. The site is topographically flat and is bounded by agricultural uses to the North, East, and West and single-family residential development to the South. The site is zoned R-1-6, Single-Family Residential, by the County of Kings Development Code and designated as Medium Density Residential by the Armona Community Plan. The site currently contains one single-family residence and agriculture uses.

Figure ES-1. Project Vicinity Map

ES.2 Environmental Review Process

The County of Kings has prepared and transmitted a Notice of Preparation (NOP) for this EIR. The Draft EIR is being released for agency and public review for a 45-day public review period. After completion of the public review period, all comments received on the Draft EIR will be reviewed and written responses will be prepared, along with any necessary revisions to the Draft EIR for the purposes of its finalization. The County of Kings Planning Commission would review and certify the Final EIR; following certification, the Planning Commission would make findings on any significant environmental effects and consider approval of the project.

ES.3 Areas of Controversy and Issues to be Resolved

As of the publication of the Draft EIR, all areas of controversy or issues in need of resolution have been communicated and addressed. Additionally, there are no remaining technical project description issues or environmental review issues left to be resolved.

ES.4 Summary of Alternatives Analysis

Section D (Alternatives) provides a description of the project alternatives. Also evaluated is The No Project Alternative, as required under §15126.6 (e) of the California Code of Regulations. The alternatives analysis includes a discussion of alternatives that were dismissed from further consideration, as well as a comparative analysis of a reasonable range of potentially feasible project alternatives. The alternatives in the comparative analysis include the following:

- No Project Alternative. Under this alternative, the proposed project would not be constructed, and the project site would remain in its current condition. However, due to the site being zoned R-1-6 (Residential), there is a high probability that it would be developed with residential uses in the future.
- Alternative 1 (Reduced Project Alternative). Alternative 1 consists of developing the site with residential homes, identical to the proposed project, but with a decrease in the number of homes. This alternative seeks to avoid or reduce significant and unavoidable transportation impacts of the proposed project by decreasing vehicle miles traveled (VMT) associated with the proposed project. However, the homes may not have the same affordability.

ES.4.1 Environmentally Superior Alternative

Based on the analysis contained in Section C (Environmental Impacts Analysis) and Section D (Alternatives) of this EIR, the proposed project is the environmentally superior alternative. The proposed project best accomplishes developing the site with residential uses while being consistent with the zoning designation of the site. Additionally, alternatives to the project were not found to substantially reduce or avoid VMT impacts associated with the project. As described in Section C (Alternatives), the No Project Alternative and Alternative 1 would result in similar impacts as the proposed project.

ES.5 Summary of Impacts and Mitigation Measures

Section C (Environmental Impacts Analysis) of this EIR presents the direct and indirect impacts associated with the proposed project, as well as its incremental contribution to cumulative effects. As discussed, the proposed project would result in significant and unavoidable VMT impacts. As discussed in Appendix B, Initial Study, all other impacts associated with the project were found to be less than significant or reduced to a level of less than significant with the implementation of mitigation measures, as summarized in Table ES-1.

Table ES-1. Summary of Impacts and Mitigation Measures

Criteria/Impact	Summary of Mitigation Measures	Level of Significance
Aesthetics		
a) Have a substantial adverse effect on a scenic vista?	▪ No mitigation is required.	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings with a state scenic highway?	▪ No mitigation is required.	No Impact
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 a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	▪ No mitigation is required	No Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	▪ **AES-1:** Preserve the existing nighttime environment by limiting the illumination of areas surrounding new development. New lighting that is part of residential, commercial, industrial, or recreational development shall be oriented away from sensitive uses, and should be hooded, shielded, and located to direct light pools downward and prevent glare.	Less than Significant Impact with Mitigation Incorporated
Agricultural and Forest Resources		
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 non-agricultural use?	▪ No mitigation is required	Less than Significant Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	▪ No mitigation is required	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section	▪ No mitigation is required	No Impact

12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned timberland Production (as defined by Government Code section 51104(g)?		
d) Result in the loss of forestland or conversion of forest land to non-forest use?	▪ No mitigation is required	No Impact
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	▪ No mitigation is required	Less than Significant Impact
Air Quality		
a) Conflict with or obstruct implementation of the applicable air quality plan?	▪ No mitigation is required	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	▪ No mitigation is required	Less than Significant Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	▪ No mitigation is required	Less than Significant Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	▪ No mitigation is required	Less than Significant Impact
Biological Resources		
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, or regulations, or by the California Department of Fish & Game or U.S. fish and Wildlife Service?	▪ See Appendix I	Less than Significant Impact With Mitigation Incorporated
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	▪ See Appendix I	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through director removal, filling, hydrological interruption, or other means?	▪ See Appendix I	No Impact

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?	▪ See Appendix I	Less than Significant Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	▪ See Appendix I	No Impact
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?	▪ See Appendix I	No Impact
Cultural Resources		
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	▪ **CUL-1: <u>Mitigation Measure CR-1: Protection of Cultural Resources</u>.** In order to avoid the potential for impacts on historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of the Summers Pointe Project: a) <u>*Cultural Resources Alert on Project Plans*</u>. The project proponent shall note on any plans that require ground-disturbing excavation that there is a potential for exposing buried cultural resources. b) <u>*Pre-Construction Briefing*</u>. The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground-disturbing activities, which will include information on potential cultural material finds and on the procedures to be enacted if resources are found. c) <u>*Stop Work Near any Discovered Cultural Resources*</u>. The project proponent shall retain a professional archaeologist on an "on-call" basis during ground-disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during the construction of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified immediately. The archaeologist	Less Than Significant With Mitigation Incorporation

	shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA. d) *Mitigation for Discovered Cultural Resources*. If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommend mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in place, recordation, additional archaeological testing, and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo-documented and collected by the archaeologist for submission to Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken. e) *Native American Monitoring.* Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground-disturbing activities during construction. Tribal participation would be dependent upon the availability and interest of the Tribe. f) *Disposition of Cultural Resources.* Upon coordination with the Kings County Community Development Agency, any prehistoric archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution	

	where they would be afforded applicable cultural resources laws and guidelines. ▪ **CUL-2: <u>Mitigation Measure CR-2: Protection of Buried Human Remains</u>**. *In order to avoid the potential for impacts on buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project:* a) *Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop within 25 feet of the discovery, the Kings County Coroner shall be notified immediately and the resource shall be protected in compliance with applicable state and federal laws. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD) pursuant to Public Resources Code Section 5097.98. The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed-upon treatment shall address the appropriate excavation and removal, California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(e) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains, and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."* ▪ *Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the*	

	California Historical Resources Information System, Southern San Joaquin Valley Information Center.	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	▪ See Mitigation Measures CUL-1 & CUL-2	Less Than Significant With Mitigation Incorporation
c) Disturb any human remains, including those interred outside of formal cemeteries?	▪ See Mitigation Measure CUL-2	Less Than Significant With Mitigation Incorporation
Energy		
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	▪ No mitigation is required	Less than Significant Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	▪ No mitigation is required	No Impact
Geology and Soils		
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	▪ No mitigation is required	No Impact
i) 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.	▪ No mitigation is required	No Impact
ii) Strong seismic ground shaking?	▪ No mitigation is required	No Impact
iii) Seismic-related ground failure, including liquefaction?	▪ No mitigation is required	No Impact
iv) Landslides?	▪ No mitigation is required	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	▪ No mitigation is required	Less than Significant Impact
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	▪ No mitigation is required	No Impact

landslide, lateral spreading, subsidence, liquefaction, or collapse?		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct and indirect risks to life or property?	▪ No mitigation is required	No Impact
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?	▪ No mitigation is required	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	▪ See Mitigation Measures CUL-1 & CUL-2	Less Than Significant With Mitigation Incorporation
Greenhouse Gas Emissions		
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	▪ No mitigation is required	Less than Significant Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	▪ No mitigation is required	No Impact
Hazards and Hazardous Materials		
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	▪ No mitigation is required	Less than Significant Impact
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?	▪ No mitigation is required	Less than Significant Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	▪ No mitigation is required	Less than Significant Impact
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, would it create a significant hazard or excessive noise to the public or the environment?	▪ No mitigation is required	No Impact
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 public use airport, would the project result in a safety	▪ No mitigation is required	No Impact

hazard 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?	▪ No mitigation is required	No Impact
g) Expose people or structures, either directly or indirectly, to significant risk of loss, injury or death involving wildland fires?	▪ No mitigation is required	No Impact
Hydrology and Water Quality		
a) Violate any water quality standards or waste discharge requirements or otherwise sustainably degrade surface or ground water quality?	▪ **HYD-1:** Prior to the issuance of any construction/grading and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project site to the California SWRCB Storm Water Permit Unit. ▪ **HYD-2:** The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the County 45 days prior to the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. An SWPPP for site construction shall be developed prior to the initiation of grading and implemented for all construction activity on the Project site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to stormwater and shall include specific BMPs to control the discharge of material from the site. The following BMP methods shall include, but would not be limited to: ▪ Dust control measures will be implemented to ensure the success of all onsite activities to control fugitive dust; ▪ A routine monitoring plan will be implemented to ensure the success of all onsite erosion and sedimentation control measures; ▪ Provisional detention basins, straw bales, erosion control blankets, mulching, silt fencing, sandbagging, and soil stabilizers will be used; ▪ Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours prior to and during extreme weather conditions; and, ▪ BMPs will be strictly followed to prevent spills and discharges of pollutants on site, such as material storage, trash disposal, construction entrances, etc.	Less Than Significant With Mitigation Incorporation

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	▪ No Mitigation is required	Less than Significant Impact
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:		
(i) result in substantial erosion or siltation on- or off-site?	▪ See Mitigation Measures HYD-1 & HYD-2	Less Than Significant With Mitigation Incorporation
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	▪ See Mitigation Measures HYD-2 ▪ H-1(a): Low Impact Development Design. Future development pursuant to the 2035 Kings County General Plan shall incorporate LID principles into the project design to minimize long-term stormwater runoff. Such principles shall include: ▪ Permeable paving, such as pavers, porous concrete, or pathway comprised of decomposed granite that is effective in stormwater infiltration to help prevent excess runoff. ▪ Use of "urban bio-swales" to redirect stormwater into planter strips, rather than capturing runoff in pipes and diverting it to a remote location. ▪ Use of water-efficient irrigation (e.g., drip irrigation system) to water trees, shrub beds, and areas of groundcover to eliminate evaporation losses and minimize runoff. ▪ Use of predominately (75 percent) native plants and drought-tolerant landscaping wherever possible.	Less Than Significant With Mitigation Incorporation
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	▪ See Mitigation Measures HYD-1 & HYD-2	Less Than Significant With Mitigation Incorporation
(iv) impede or redirect flood flows?	▪ See Mitigation Measure HYD-2	Less Than Significant With Mitigation Incorporation
d) In flood hazard, tsunami, or seiche zones risk the release of pollutants due to project inundation?	▪ No Mitigation is required	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or	▪ No Mitigation is required	No Impact

sustainable groundwater movement plan?		
Land Use and Planning		
a) Physically divide an established community?	▪ No Mitigation is required	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	▪ No Mitigation is required	No Impact
Mineral Resources		
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	▪ No Mitigation is required	No Impact
b) Result in the loss of availability of a locally - important mineral resource recovery site delineated on a local general plan, specific plan, or other lands use plan?	▪ No Mitigation is required	No Impact
Noise		
a) Generation of a substantial temporary or permeant 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?	▪ No mitigation is required	Less than Significant Impact
b) Generation of excessive ground-borne vibration or groundborne noise levels?	▪ No mitigation is required	Less than Significant Impact
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 public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	▪ No mitigation is required	No Impact
Population and Housing		
a) Induce substantial unplanned population growth in an area, either directly (for example, by new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	▪ No mitigation is required	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	▪ No mitigation is required	No Impact
Public Services		

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable serve ratios, response times of other performance objectives for any of the public services:		
Fire protection?	▪ No mitigation is required	Less than Significant Impact
Police protection?	▪ No mitigation is required	Less than Significant Impact
Schools?	▪ No mitigation is required	Less than Significant Impact
Parks?	▪ No mitigation is required	Less than Significant Impact
Other public facilities?	▪ No mitigation is required	Less than Significant Impact
Recreation		
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?	▪ **Mitigation Measure REC-1:** Prior to recording the final map, the applicant will designate a minimum of 0.802 acres of parkland on the Project site or within the Community of Armona. A cost estimate for continued maintenance of the parkland will be calculated and will be included in the project's zone of benefits.	Less than Significant Impact with Mitigation Incorporated
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?	▪ No mitigation is required	No Impact
Transportation		
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	▪ No mitigation is required	No Impact
b) Conflict or be inconsistent with the CEQA guidelines Section 15064.3, Subdivision (b)? **Impact TR-1:** The project would Generate VMT Exceeding the County's Thresholds.	▪ Mitigations to Lessen this Impact: • **Mitigation Measure LUT-1**: Prior to recording the final map, the applicant shall enter the project into a density bonus agreement, which will provide more housing units per acre than a typical neighborhood in the R-1-6 zone. • **Mitigation Measure LUT-3**: The project site will be located within ¼ mile of Medium Density	Significant and Unavoidable

	Residential, Medium High-Density Residential, Mixed Use, Downtown Mixed Use, Rural Commercial, Public/Quasipublic, and Agriculture land uses. • **Mitigation Measure LUT-4**: The project site shall be located approximately 3 to 3.5 miles from the Hanford Downtown. • **Mitigation Measure LUT-6**: Prior to recording the final map, the applicant shall enter the project into a density bonus agreement, which will include at least 10 below-market-rate houses out of 109 total houses. • **Mitigation Measure LUT-9**: The project shall include improved design elements to enhance walkability and connectivity. These elements will include an above-average amount of street intersections, pedestrian crossings, and sidewalks throughout the project site. • **Mitigation Measure SDT-1**: The project shall eliminate physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation. The project site will contain pedestrian sidewalks throughout and connect to nearby homes and commercial uses. • **Mitigation Measure SDT-2**: Prior to the start of construction, the applicant shall designate the location of appropriate traffic calming features such as marked crosswalks and on-street parking for the project site. The applicant will show these features on the improvement drawings for the project site. A cost estimate for continued maintenance of such features will be calculated and will be included in the project's zone of benefits. • **Mitigation Measure SDT-5**: Prior to recording the final map, the applicant shall designate the location of a Class 3 bike route. The applicant will show the location of appropriate bike route striping in their improvement drawings for the project site. A cost estimate for continued maintenance of such striping will be calculated and will be included in the project's zone of benefits. • **Mitigation Measure TRT-3**: Prior to recording the final map, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a ride-sharing program to residents of the project site. The applicant shall designate an on-street parking space to be used by ride-sharing vehicles. • **Mitigation Measure TRT-9**: Prior to recording the final map, the applicant shall coordinate with	

	the Kings Area Regional Transit (KART) service to provide a car-sharing program to residents of the project site. • **Mitigation Measure TST-2**: Prior to recording the final map, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide sidewalk/ crosswalk safety enhancements and bus shelter improvements for a new transit stop at or near the project site. • **Mitigation Measure TST-3**: Prior to recording the final map, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a new transit stop at or near the project site. • **Mitigation Measure TST-6**: Prior to recording the final map, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide shuttle service to residents of the project site.	
d) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	▪ No mitigation is required	No Impact
e) Result in inadequate emergency access?	▪ No mitigation is required	No Impact
Tribal Cultural Resources		
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:		
i) 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	▪ See Mitigation Measures CUL-1 & CUL-2	Less Than Significant With Mitigation Incorporation
ii) 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	▪ See Mitigation Measures CUL-1 & CUL-2	Less Than Significant With Mitigation Incorporation

the resource to a California Native American tribe.		
Utilities and Service Systems		
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relation of which could cause significant environmental effects?	▪ No mitigation is required	Less than Significant Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	▪ No mitigation is required	Less than Significant Impact
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	▪ No mitigation is required	Less than Significant Impact
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?	▪ No mitigation is required	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	▪ No mitigation is required	No Impact
Wildfire		
Substantially impair an adopted emergency response plan or emergency evacuation plan?	▪ No mitigation is required	No Impact
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 a wildfire?	▪ No mitigation is required	No Impact
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?	▪ No mitigation is required	Less than Significant Impact
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?	▪ No mitigation is required	No Impact
Mandatory Findings of Significance		

a)	Does the project have the potential substantially to 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 a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	▪ See Mitigation Measures: AES-1, CUL-1, CUL-2, HYD-1, H-1(a) HYD-2, REC-1, LUT-1, LUT-3, LUT-4, LUT-6, LUT-9, SDT-1, SDT-2, SDT-5, TRT-3, TRT-9, TST-2, TST-3, TST-6	Less Than Significant With Mitigation Incorporation *With the exception of Impact TR-1 which is Significant and Unavoidable
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)?	▪ See Mitigation Measures: AES-1, CUL-1, CUL-2, HYD-1, H-1(a) HYD-2, REC-1, LUT-1, LUT-3, LUT-4, LUT-6, LUT-9, SDT-1, SDT-2, SDT-5, TRT-3, TRT-9, TST-2, TST-3, TST-6	Less Than Significant With Mitigation Incorporation *With the exception of Impact TR-1 which is Significant and Unavoidable
c)	Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	▪ No Mitigation is required	Less than Significant Impact

County of Kings
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Hanford, CA 93230

SECTION A
Introduction

Project Title: Tract 936 Summers Pointe

A.1 Purpose and Intended Uses of the EIR

This Environmental Impact Report (EIR) has been prepared pursuant to the requirements of the California Environmental Quality Act (CEQA). The County of Kings is the Lead Agency under CEQA. CEQA requires the Lead Agency to consider the information contained in an environmental review document, in this case, an EIR, prior to taking any discretionary action. This EIR serves as an informational document for the County of Kings to consider when making their discretionary approval of the proposed project and for other agencies and interested parties during their respective review of the proposed project.

This EIR evaluates potential environmental impacts and identifies recommended mitigation measures to offset direct, indirect, and cumulative impacts associated with the proposed project's implementation. This EIR also identifies and evaluates the impacts of alternatives to the proposed project, discloses growth-inducing impacts, and identifies its significant and unavoidable effects and significant irreversible environmental changes.

A.2.1 Project Description and Purpose

The Project proposes a 109-unit, single-family development on 20.08 gross acres in the County of Kings, within the community of Armona. The Project site's existing and proposed zoning is R-1-6, Single-Family Residential. The project includes 109 single family homes, with an average lot size of 5,094 square feet, as well as an existing home on approximately one acre. The Project also proposes a 1.7-acre onsite drainage basin.

The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities, new residential streets, and the continuation and improvement of Crocus Way. The Project would require no demolition as the site is currently on agricultural land, and the existing home on site will remain.

A.2.2 Project Location

The proposed project site is located within the County of Kings within the Armona Community Plan, South of W. Lacy Boulevard, North of Front Street, and East of 14th Avenue. The site is approximately .3 miles Northeast of the Armona downtown, and approximately 3 miles west of the Hanford Downtown. The Project involves construction on approximately 20.08 acres on Parcels 017-100-012 and 017-100-013. The site is topographically flat and is bounded by agricultural uses to the North, East, and West and single-family residential development to the South. The site is zoned R-1-6, Single-Family Residential, by the

Kings County Development Code and is designated as Medium Density Residential by the Armona Community Plan. The site currently contains one single-family residence surrounded by agriculture uses.

A.3 Required Permits and Approvals

The following discretionary approvals are required from local agencies for the proposed project:

- County of Kings Density Bonus
- County of Kings Building and Encroachment Permits
- San Joaquin Valley Air Pollution Control District (SJVAPCD). The proposed project is within the area of the SJVAPCD and will be required to comply with Rules VIII, 3135, 4101, and 9510.
- Central Valley Regional Water Quality Control Board, SWPPP. The proposed project site is within the area of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB will require a Storm Water Pollution Prevention Plan (SWPPP) to prevent impacts related to stormwater because of project construction.
- Approval for services from the Armona Community Services District.

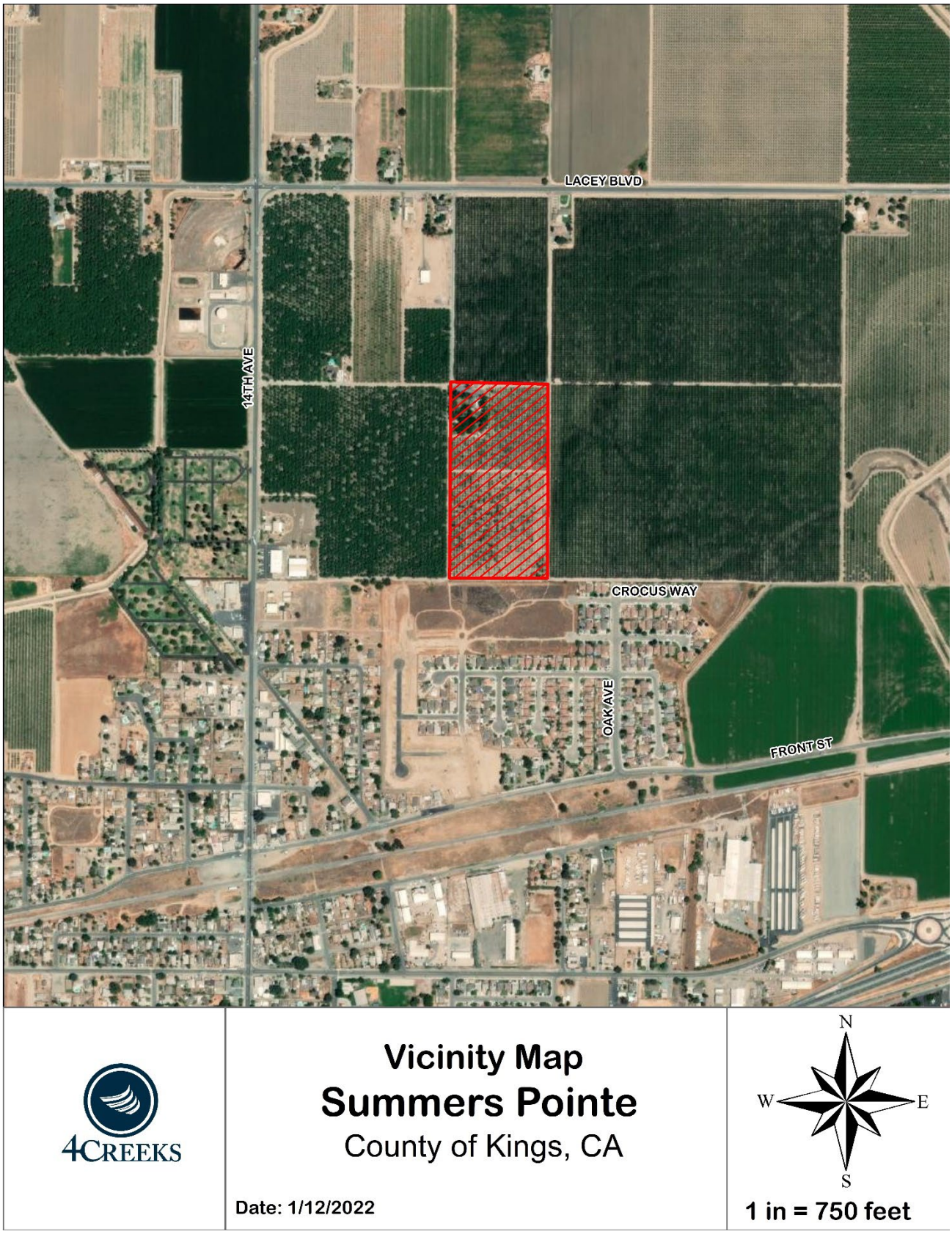

Figure A-1. Vicinity Map

A.4 EIR Process

A.4.1 Distribution of NOP

In compliance with Sections 15082 and 15375 of the State CEQA Guidelines, a Notice of Preparation (NOP) will be prepared by the County of Kings Community Development Agency and distributed to the State Clearinghouse, Office of Planning and Research, Trustee and Responsible Agencies and other interested parties. The NOP will be circulated for a 30-day public review period. The NOP will also be provided to property owners located within 300 feet of the project site. In addition to the distribution of the NOP, the County will create a newspaper notice and the notice will be posted in the County Clerk-Recorders office. The NOP includes a description of the project, the location of the project indicated on an attached map, a web link to the initial study containing the important environmental issues of the project, and the probable environmental effects of the project.

A.4.2 Public Scoping

The 30-day scoping comment period will begin with the release of the NOP. Scoping comment letters will be received on the NOP from any state, local, or federal agency such as the San Joaquin Valley Air Pollution Control District, California Department of Fish and Wildlife, California Department of Transportation, Armona Community Services District, Native American Heritage Commission, and the Santa Rose Rancheria Tachi Yokut Tribe; these comment letters, as well as the NOP, will be included in Appendix A. Furthermore, after issuing the NOP, a scoping meeting may be requested by a Responsible Agency, Trustee Agency, the Office of Planning and Research, or the project applicant (pursuant to CEQA Guidelines § 15082).

A.4.3 Availability of Draft EIR

The Draft EIR will be circulated for review and comment by the public and other interested parties, agencies, and organizations for a period of 45 days. Comments may be sent anytime during the 45-day EIR comment period. After completion of the 45-day review period, a Final EIR will be prepared that response to comments on the Draft EIR submitted during the review period and modifies the Draft EIR as necessary. Public hearings on the proposed project will be held after the completion of the Final EIR. Notice of the time and location of future public hearings will be provided before each public hearing date. All comments or questions about the Draft EIR should be addressed to:

Kings County Community Development Agency
1400 W. Lacey Blvd., Building #6
Hanford, CA 93230
Telephone: 559-852-2670
Fax: 559-584-8989

Figure A-2 provides a flowchart of the EIR process. The County will complete the initial steps of the EIR process as discussed in this section and will continue through the process as required by CEQA. An Initial Study was prepared for the proposed project and is included in Appendix B.

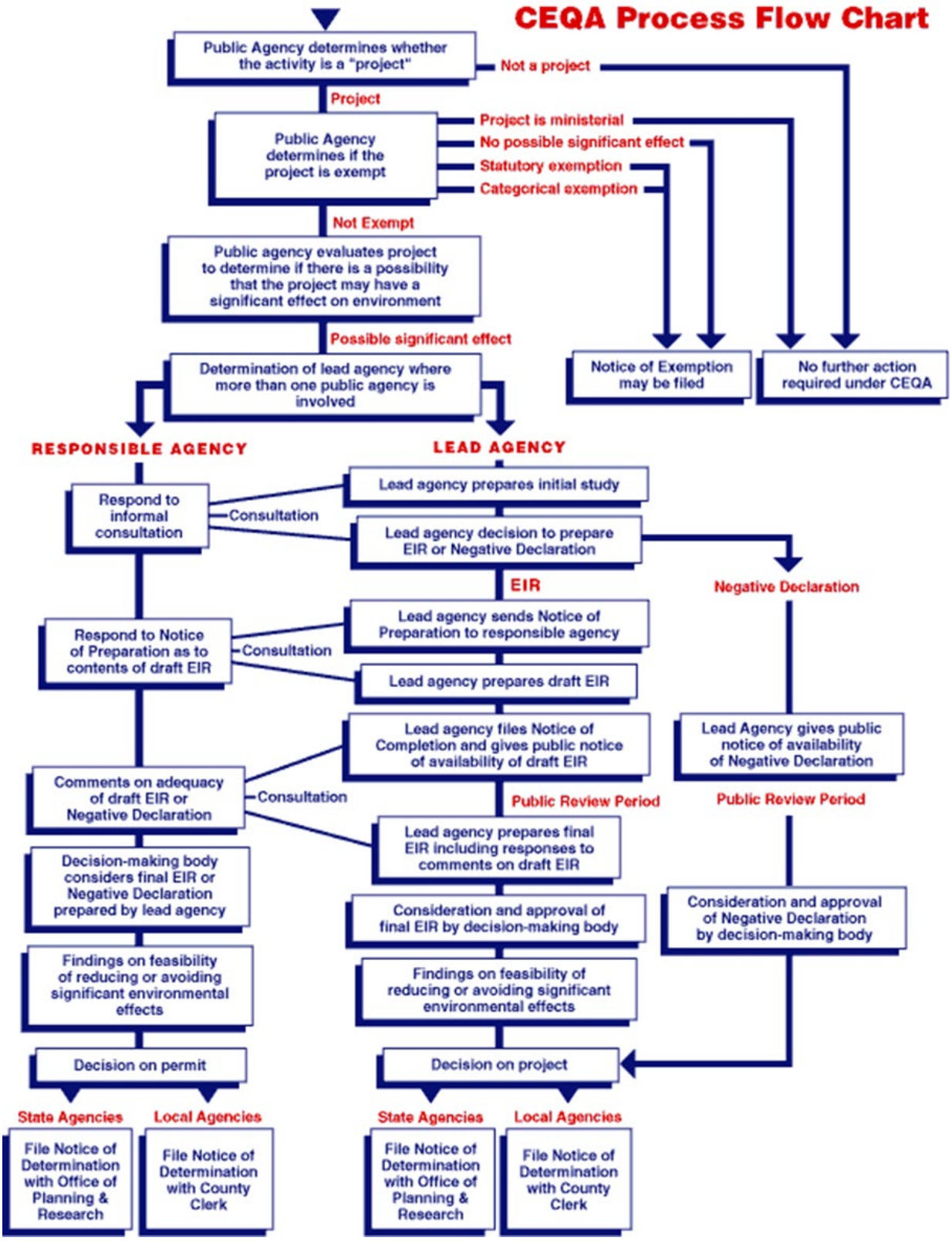

Figure A-2. The CEQA Process Flow Chart

A.5 Organization of the EIR

This EIR contains the information and analysis required by CEQA Guidelines Sections 15120 through 15132. Each of the required elements is covered in one of the EIR sections or their related appendices, which are organized as follows:

- **Executive Summary.** Provides a description of the proposed project's environmental review process, a summary of the proposed project attributes and its impacts, a brief description of the proposed project's alternatives and identification of the environmentally superior alternative, and a summary of the proposed project's areas of known controversy and issues in need of resolution.
- **Section A – Introduction** contains a summary of the EIR's purpose and the project objectives as well as comments received during project scoping.
- **Section B – Project Description** provides details on the proposed project, including the general environmental setting, project background, construction plan, operation, and maintenance, and required permits and approvals. Section B also includes the cumulative scenario, which provides a list of related projects and describes the methodology used in the cumulative assessment.
- **Section C – Environmental Impacts** Analysis details environmental setting information, applicable regulations and standards, proposed project impacts, and proposed mitigation measures for specific resource areas. Section C.1 provides the approach to the environmental analysis, as well as a discussion of the resource areas for which the proposed project would result in no impacts or less-than-significant impacts. Detailed analyses for potential direct, indirect, and cumulative environmental impacts of the proposed project are included in Section C.2, Transportation, and Appendix B, Initial Study, of this EIR.
- **Section D – Alternatives** provides a comparison of the proposed project's impacts with those of project alternatives developed by the County of Kings.
- **Section E – Other CEQA Considerations** addresses other applicable CEQA requirements, including an analysis of growth-inducing effects, significant irreversible commitment of resources, and significant effects that cannot be avoided.
- **Section F – References** lists all of the informational references cited in this EIR.
- **Section G – Consultation and EIR Preparers** lists the preparers of the EIR document.

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SECTION B
Project Description

Project Title: Tract 936 Summers Pointe

B.1 Introduction

The project site is on two parcels that currently holds one single-family residence and agriculture uses. The site is in the Northern part of the Armona Community, within the County of Kings. The proposed project is on APNs: 017-100-012 and 017-100-013, which is zoned R-1-6, Single Family Residential by the Kings County Development Code and designated as Medium Density Residential by the Armona Community Plan of the 2035 Kings County General Plan.

B.2 Project Objectives

The project objectives are to:

- Make productive use of the underutilized property by developing the site with residential uses consistent with the current Armona Community Plan and the Kings County Development Code.
- Increase the available single-family residential housing stock within the Armona Community.
- Build an integrated, high-quality development with a range of single-family home sizes to offer homeownership opportunities attainable to various household types and income levels.
- Connect future development with the existing community, reducing the strain on the utilities.
- Expand the Armona community.

B.3 Project Description

The Project proposes a 109-unit, single-family residential development. The average lot size for each home is 5,094 square feet. The project will keep an existing home on approximately one acre. The Project also proposes a 1.7-acre onsite drainage basin. Shown in Figure B-1 is the site plan for the proposed project.

The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities, new residential streets, and the continuation and improvement of Crocus Way. The Project would require no demolition as the site is currently on agriculture land.

B.3.1 Home Details

The planned 109 homes will follow five unique designs of one-story homes. The proposed stucco colors are grey, beige, and brown. The trim colors could be various shades of white, blue, or brown with the shutter colors being shades of brown. Several homes will include brick or stone on the façade. The roof materials will include multiple shades to create visual interest. The proposed elevations of the development would be subject to review by the Kings County Community Development Agency Deputy

Director Building Official prior to the issuance of construction permits. The overall proposed project's architecture would reflect an American Traditional/American Cottage design. Characteristic elements of this design include:

- Windows with wood shutters.
- The use of brick veneer and/or wood siding.
- A distinctive roof over the entry.
- Trim above doors and windows.
- Front porch with wood-like or stucco columns.





Figures B-1-5: Proposed Home Designs

B.3.2 Construction Details

The proposed new buried utilities and new/extended roads would be built first. This would involve minor grading and trenching, followed by installing new utility lines, backfilling, and paving the roads. Existing water and sewer lines exist to the south of the site. Completing these road extensions first would ensure that construction-related trips can use the proposed new extension of Crocus Way to access home sites. Once that is complete, the homes will be constructed simultaneously. Construction for all 109 of the homes is expected to last approximately 22 months. Construction is expected to be completed by the end of 2024.

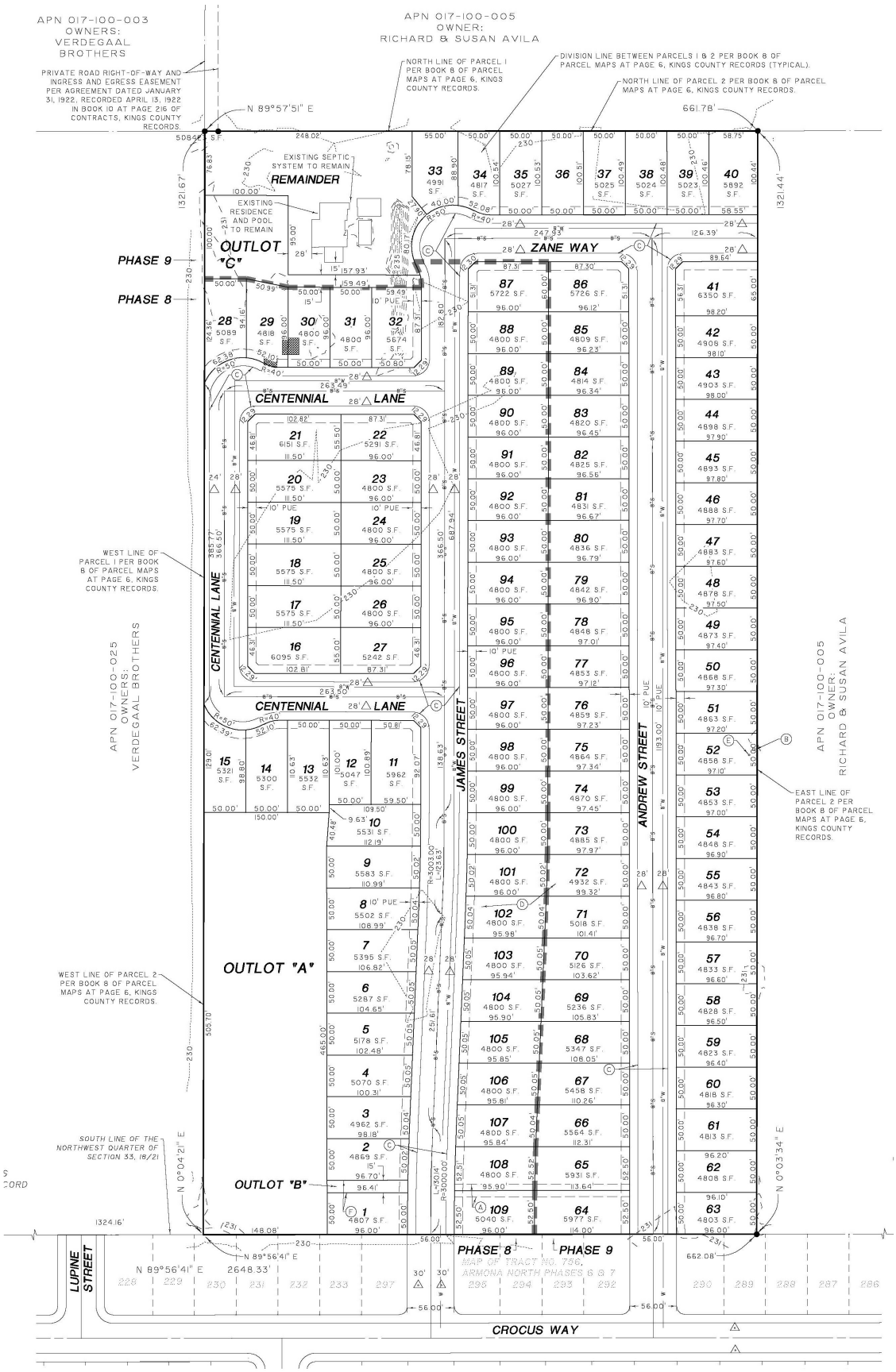

Figure B-6: Project Site Plan

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SECTION C
Environmental Setting, Analysis, and Mitigation Measures

Project Title: Tract 936 Summers Pointe

C.1 Introduction to Environmental Analysis

Section C presents the analysis of the potential direct, indirect, and cumulative environmental impacts of the proposed project. Addressed in Section D are the Alternatives. CEQA requires that an EIR address potentially significant environmental effects; this analysis is included in Section C.2, Transportation, Vehicle Miles Traveled [VMT] Impacts, of this EIR.

For all remaining environmental resource areas, this EIR has determined that the impacts of the proposed project would not be significant. Appendix B, Initial Study, provides a summary and explanation of the conclusions for each of these resource areas (as allowable under CEQA Guidelines Section 15128). CEQA Guidelines Section 15128 also requires that an EIR briefly explain the reasons why certain effects associated with a project have been determined not to be significant, and therefore not discussed in detail in the EIR. As presented in Appendix B, Initial Study, the proposed project would result in no impact, less than significant impacts, or less than significant impacts with mitigation to the following resources:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation (All Except VMT)
- Tribal Cultural Resources
- Utilities
- Wildfire

Presented in Appendix B are descriptions of each of these resources and an explanation of why the proposed project would not result in significant impacts.

C.1.1 Organization of Section C

Based on the analysis presented in the Initial Study (Appendix B), this EIR addresses one issue, transportation impacts associated with the proposed project, specifically impacts related to operational VMT. This detailed analysis is presented in Section C.2, Transportation.

C.1.2 Environmental Assessment Methodology

The methodology used to determine potential project impacts identified in the Initial Study (Appendix B) and Section C of this EIR comprises four key components. Each of these components is summarized below and discussed under the resource area addressed in Section C.

- **Environmental Setting.** In most cases, the description of existing conditions in the environmental setting focuses on the immediate vicinity of the project site (sensitive receptors, public roadways, existing water system infrastructure, etc.). For some resources, such as air quality (as discussed in Appendix B), regional information may also be presented.
- **Applicable Regulations, Plans, and Standards.** This includes a description of federal, State, and local regulatory framework applicable to the assessment of project impacts.
- **Environmental Impacts and Mitigation Measures.** This includes the procedures followed to determine the type and magnitude of impacts that would occur, thresholds of significance, and project impacts and mitigation measures.
    - **Thresholds of Significance.** Resource-specific thresholds, where appropriate, are used to evaluate the significance of environmental impacts. They are based on available County of Kings or the Armona Community thresholds, augmented where appropriate with those identified in the Initial Study included in Appendix G of the CEQA Guidelines (refer to Appendix B).
    - **Project Impacts.** Each resource area analysis identifies direct and indirect impacts that would occur absent mitigation measures. Direct impacts are those that are caused by and immediately related to the proposed project. Indirect impacts would occur later in time or farther removed in distance but are still reasonably foreseeable effects of the proposed project. The following determinations are used for classifying project-related impacts:
        - *Significant and unavoidable impact:* an adverse impact that cannot be mitigated to a level that is less than significant;
        - *Significant impact:* that can be mitigated to a level of less than significant through the implementation of recommended mitigation measures;
        - *Less than significant impact:* an impact that is adverse but less than significant and mitigation is therefore not required;
        - *Beneficial impact:* an impact that improves environmental conditions either directly or indirectly and mitigation is therefore not required; and
        - *No Impact:* circumstances under which no direct or indirect effect would occur, and mitigation is therefore not required.
- **Level of Significance after Mitigation.** This section identifies the level of significance under CEQA, after the implementation of environmental commitments and mitigation measures identified by the County of Kings to mitigate significant project impacts.

Impact Significance

Based on the impact assessment methodology presented above, each specific impact for each resource area is assigned one of the following impact levels:

- **Class I: Significant impact:** cannot be mitigated to a level that is less than significant.
- **Class II: Significant impact:** can be mitigated to a level that is less than significant through the implementation of recommended mitigation measures.
- **Class III: Adverse impact:** but less than significant so mitigation is not normally recommended.

- **Class IV: Beneficial impact;** mitigation is not required.
- **No Impact:** The specific impact question or resource would not be affected by the proposed project.

C.1.3 Cumulative Scenario and Methodology

Cumulative effects are those impacts from related projects that would occur in conjunction with the proposed project. To document the process used to determine cumulative impacts, this section provides the CEQA requirements, the methodology used in the cumulative assessment, and the projects identified and applicable to the cumulative analysis. Section C.2 provides the analysis of cumulative impacts for transportation VMT.

CEQA Requirements

CEQA requires that cumulative impacts be analyzed in an EIR when the resulting impacts are cumulatively considerable, and therefore, potentially significant. The discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion does not need to be as detailed as the discussion of environmental impacts attributable to the proposed project alone. Further, the discussion is intended to be guided by the standards of practicality and reasonableness. As stated in Public Resources Code Section 21083(b), "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable."

According to Section 15355 of the 2021 CEQA Statute and Guidelines:

> *Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*
>
> > *(a) The individual effects may be changes resulting from a single project or a number of separate projects.*
> >
> > *(b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

Further, according to CEQA Guidelines Section 15130 (a)(1):

> *As defined in Section 15355, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.*

In addition, as stated in the CEQA Guidelines, Section 15064(h)(4) it should be noted that:

> *The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.*

Therefore, the cumulative discussion in an EIR focuses on whether the impacts of the project under review are cumulatively considerable within the context of impacts caused by other past, present, or future projects. The technical analysis in Section C.2 (Cumulative Impact Analysis) includes the discussion of cumulative impacts for transportation VMT associated with the project.

Cumulative Development Scenario

Table C.1-1 lists current development projects within the area of Armona. Currently, there is only one significant project in the area. It is currently on hold and is uncertain if it will move forward or reach completion. Depicted in Figure C.1-1 is the location of this project.

Table C.1-1. Community of Armona Cumulative Project List

Project	*Location*	*Zone*	*Number of Lots*	*Map No.*
Mobile Home Park	Southeast Corner of Oak and Hood Avenue	R-1-6	100	1

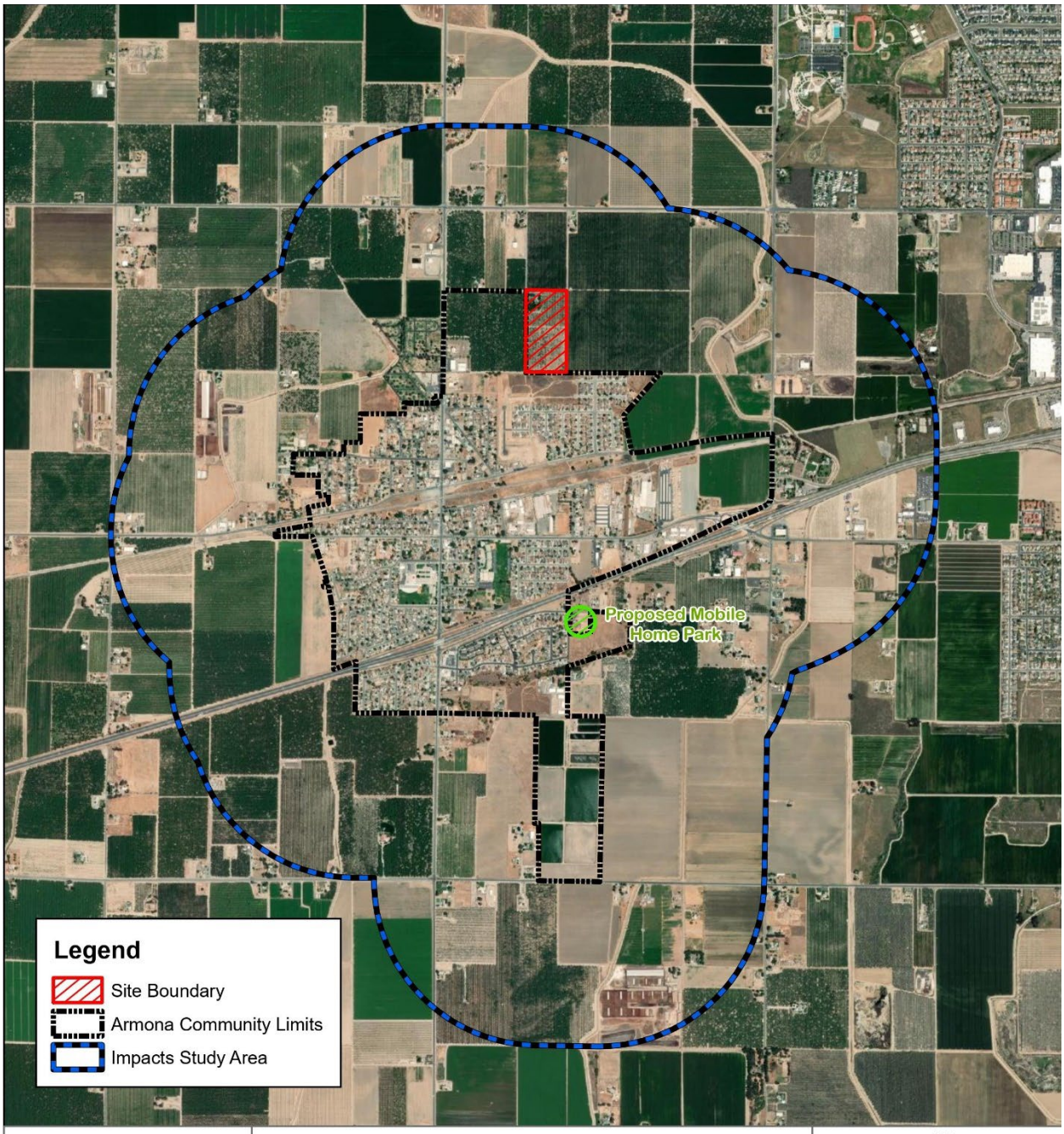

Figure C.1-1: Cumulative Projects

Cumulative Impact Methodology

Section C, Environmental Impacts Analysis, of this EIR presents the direct and indirect impacts associated with the proposed project, which are limited to transportation VMT impacts. As discussed in Appendix B, all other impacts associated with the proposed project were found to be less than significant or reduced to a level of less than significant with the implementation of mitigation measures. Therefore, the cumulative impact assessment is limited to transportation VMT impacts. The area within which a cumulative VMT effect can occur is within a one-mile radius of the proposed project site, however, the entire Community of Armona and surrounding areas were considered. This is because related VMT effects are typically localized around nearby residential and other uses that are more likely to generate trips and associated VMT. For this reason, the geographic scope for the analysis of cumulative impacts is identified for transportation within the Community of Armona and the surrounding area (Figure C.1-1).

The analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of the analysis is based on other residential projects planned within the Community of Armona and surrounding areas, as these projects have been identified by the County and would generate similar trip characteristics as the proposed project. While the geographic scope of cumulative VMT effects may extend beyond the scope of the direct effects, extending beyond this scope or estimating the indirect VMT effects of the proposed project would be speculative. In addition, each cumulative project (as identified in Table C.1-1) will have its own assumptions with respect to population and VMT generated, which may or may not coincide or overlap with the proposed project's effects.

Cumulative impacts may represent a "worst-case" scenario because some of the related projects may not be built or some related projects may be completed prior to the initiation of the proposed project. In addition, related projects would be subject to unspecified mitigation measures, which may reduce their potential VMT impacts.

C.1.4 Mitigation Measures

Where potentially significant impacts are identified in this EIR or the Initial Study (Appendix B), mitigation measures are recommended. Each mitigation measure defines the specific requirements to reduce impacts and defines the relevant milestone (the timeframe within which the measure must be implemented).

C.1.5 Mitigation Monitoring

Public Resources Code Section 21081.6 establishes two distinct requirements for agencies involved in the CEQA process. Subdivisions (a) and (b) of the section relate to mitigation monitoring and reporting, and the obligation to mitigate significant effects where possible. Pursuant to subdivision (a), whenever a public agency completes an EIR and makes a finding pursuant to Section 21081(a) of the Public Resources Code taking responsibility for mitigation identified in the EIR, the agency must adopt a program of monitoring or reporting, which will ensure that mitigation measures are complied with during the implementation of the project.

As required by CEQA and depending on the decision on the proposed project, the County would adopt a mitigation and monitoring program to ensure compliance with the recommended mitigation measures identified in this EIR including the measures identified in the Initial Study (Appendix B). The mitigation and

monitoring program for the proposed project will be included in the Final EIR consistent with CEQA requirements.

C.2 Transportation

This section describes the surface transportation qualities of the project vicinity and evaluates the significance of impacts related to VMT that may occur because of the proposed project. This section only focuses on potential VMT. As provided in Appendix B, the proposed project is found to not result in potential impacts related to adopted policies, plans, or programs supporting the transportation and circulation system, increase hazards due to a geometric design feature, or impact the flow of emergency service vehicles.

This analysis utilizes the findings of *Vehicle Miles Traveled Discussion, Proposed Tract 936, Summers Pointe* prepared by Peters Engineering Group (May 26, 2022), which is provided as Appendix C.

C.2.1 Environmental Setting

Commute Characteristics: Community of Armona

As shown in Figure C.2-1, 1,284, or 95.2%, of working Armona residents worked outside of the Armona Community (2019 U.S. Census). Only 65, or 4.8% of the working Armona residents worked inside Armona. The remaining 591 available jobs in Armona commute from other areas.

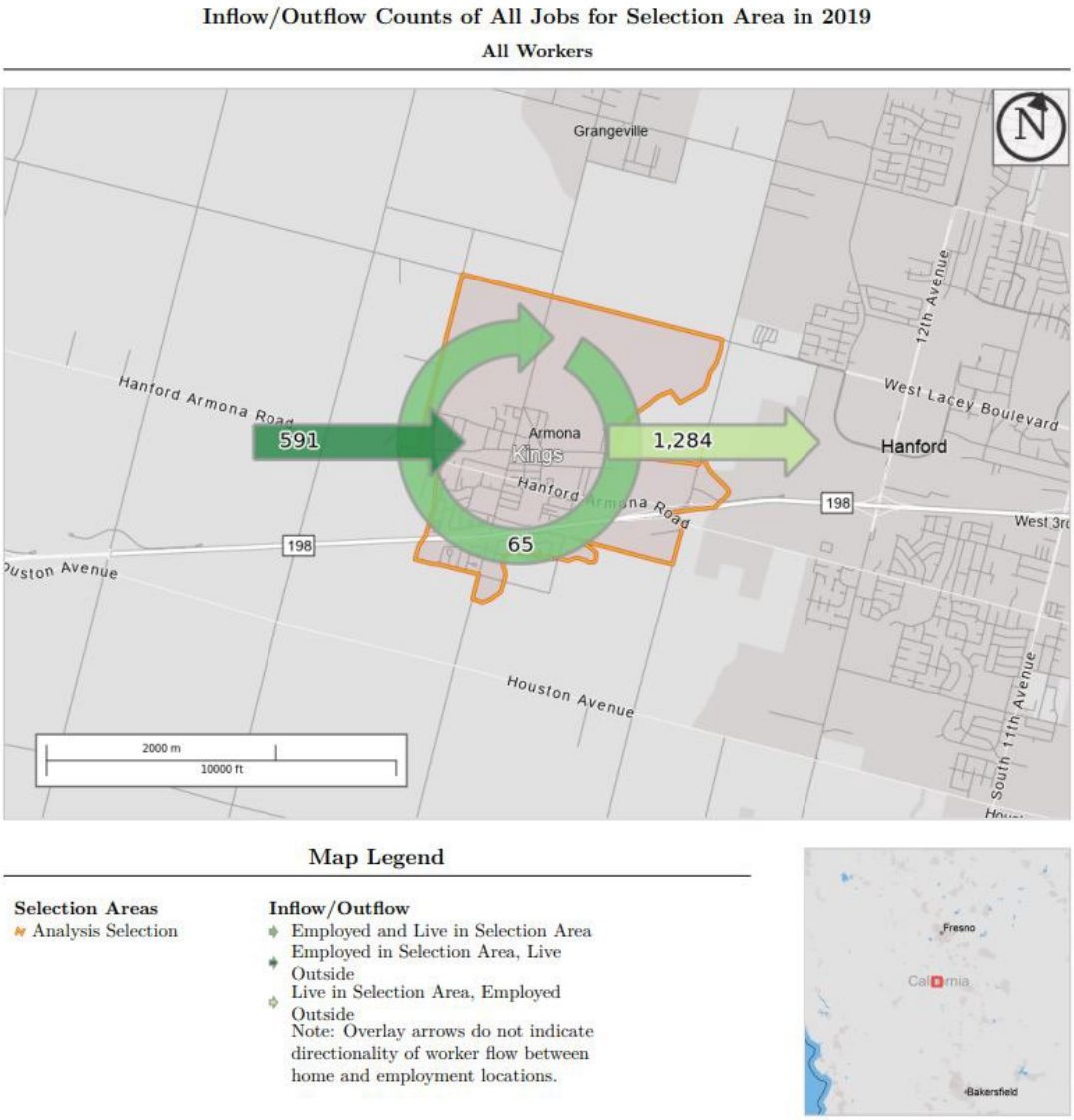

Figure C.2-1. Daily Commute Inflow and Outflow, Community of Armona

These commute characteristics have implications for the VMT metrics because they affect the distance that commuters need to travel to reach their jobs. As shown in the tables below, people who live in Armona typically have a longer commute than people who work in Armona; this data suggests that many people who work in Armona do not live there but reside close by and therefore travel shorter distances for work, while many people who live in Armona do not work in or near the Community and therefore travel greater distances for work. Table C.2-1 summarizes commute distance for people who live in Armona, whether they work in the Community or elsewhere. 24.5% of the Armona workforce work in Hanford, 5.9% work in Fresno, 5.5% work in Lemoore, and only 4.8% work in Armona. Table C.2-2 summarizes commute distance for people who work in Armona, whether they live in the community or elsewhere. Most of the workers that commute into Armona come from Hanford or unincorporated areas. Over 40% of people who live in Armona commute 25 miles or more for work, compared to 28% of people who work in Armona.

Table C.2-1. Commute Distance for People Who Live in the Community of Armona		
Commute Distance	*Count*	*Share*
Total All Jobs	1,349	100%
< 10 Miles	573	42.5%
10-24 Miles	217	16.1%
25-50 Miles	218	16.2%
> 50 Miles	341	25.3%

Table C.2-2. Commute Distance for People Who Work in the Community of Armona		
Commute Distance	*Count*	*Share*
Total All Jobs	656	100%
< 10 Miles	380	57.9%
10-24 Miles	94	14.3%
25-51 Miles	98	14.9%
> 50 Miles	84	12.8%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov/

Baseline VMT: County of Kings

Table C.2-3 presents VMT estimates for the County of Kings. As shown, the VMT per capita is lower than the total VMT per employee. VMT per employee represents the average commute distance. This shows that commutes are the longest trips taken in the county.

Table C.2-3. VMT Metrics in Kings County		
VMT Metric	*Geography*	*Average VMT*
Total VMT Per Capita	Kings County	9.6
VMT per Employee	Kings County	17.7

Source: Kings County Online VMT Mapping Tool (Found Online Here)

C.2.2 Regulatory Setting

State Regulations

Following years of development and public comment, the California Office of Planning and Research (OPR) and the Natural Resources Agency have issued new CEQA Guidelines for analyzing transportation impacts. These new regulations represent a major shift in approach to analyzing transportation impacts under CEQA. Beginning July 1, 2020, all CEQA lead agencies must discontinue analysis of transportation impacts based on congestion effects tied to Level of Service (LOS). Rather, analysis of a project's transportation impacts must now be based on vehicle miles traveled or VMT. VMT analyzes the distance that vehicles travel to and from a project, rather than congestion levels at intersections and along roadway segments. OPR's enacted new guidelines for assessing transportation impacts specify that traffic congestion can no longer be considered in assessing impacts under CEQA.

Kings County Association of Governments

The KCAG serves as the state-designated Regional Transportation Planning Agency (RTPA) and the federally-designated Metropolitan Planning Organization (MPO). The Regional Transportation Plan (RTP)

contains a constrained list of transportation projects (that are federally funded), air quality determination, and set policies for spending federal and state funds. The RTP, with a 2035 planning horizon, is the key that unlocks federal and state funding for transportation projects. The RTP is intended to serve many purposes:

- Provide the foundation for transportation decisions by local, regional, and state officials.
- Document the region's mobility needs and issues.
- Identify and attempt to resolve regional issues and provide policy direction for local plans.
- Document the region's goals, policies, and objectives for meeting current and future transportation mobility needs.
- Set forth an action plan to address transportation issues and needs consistent with regional and state policies.
- Identify transportation improvements in sufficient detail to aid in the development of the State Transportation Improvement Program (STIP) and to be useful in making decisions related to the development and growth of the region.
- Identify those agencies responsible for implementing the action plans.
- Document the region's financial resources needed to meet mobility needs.

County of Kings General Plan

The 2035 General Plan includes policies and actions intended to increase traffic calming and enhance walkability throughout the County.

- **Circulation Policy A1.1.4:** Consider public safety, retention, and maintenance of the existing County transportation system, and system efficiency as guiding criteria in evaluating County transportation improvement project priorities.
- **Circulation Policy A1.1.6:** Work closely with Caltrans, Kings County Association of Governments, and the City of Hanford to develop an alternative design for the 13th Avenue and State Route 198 interchange to enhance traffic safety and accommodate future growth demands.
- **Circulation Policy A1.2.1:** Coordinate land use planning with planned transportation facilities to make efficient use of the transportation system and reduce total vehicle miles traveled, vehicle emissions, and energy use through improved accessibility to schools, job centers, and commercial services.
- **Circulation Policy A1.3.2:** Require proposed developments that have the potential to generate 100 peak hour trips or more to conduct a traffic impact study that follows the most recent methodology outlined in Caltrans Guide to the Preparation of Traffic Impact Studies.
- **Circulation Policy B1.2.1:** Adopt traffic calming street design standards into the County's "Improvement Standards" to make available "Pedestrian Friendly" street design alternatives along Community District streets.
- **Circulation Policy B1.2.3**: Integrate pedestrian infrastructure that includes sidewalks, tree lined streets, and traffic calming crossings to balance both car and people use of neighborhood streets in new mixed use development.
- **Circulation Policy B1.3.1:** New development shall make circulation system improvements or pay its fair share to ensure maintenance of acceptable levels of service.
- **Circulation Policy C1.3.2:** Centralize new development near public transit stops within Community Districts as identified in each respective Community Plan.
- **Circulation Policy C1.3.4:** Coordinate transit route and stops with other transportation modes as defined in each Community Plan.

- **Circulation Policy C1.4.1:** Identify and plan for pedestrian and bicycle pathways in strategic locations within Community Districts to connect residents to commercial businesses, community gathering places, and educational facilities.

Armona Community Plan

The Armona Community Plan (ACP) in the 2035 Kings County General Plan contains policies related to traffic-related issues.

- **ACP Policy 6A.4.1:** The County shall work closely with Caltrans, KCAG and the City of Hanford to develop an alternative design for the highway interchange at 13th Avenue and State Route 198 to enhance traffic safety and accommodate future growth demands.

- **ACP Policy 6A.4.3:** A transportation related development impact fee shall be established in coordination with the City of Hanford to create a funding mechanism for construction of the alternative 13th Avenue/State Route 198 interchange design.

C.2.3 Environmental Impacts and Mitigation Measures

Impact Assessment Methodology

The Kings County Association of Governments (KCAG) VMT methodology for the proposed project is based on an origin-destination (OD) VMT methodology, which estimates the VMT generated by land uses in a specific geographic area, known as a traffic analysis zone (TAZ), or a larger geographic area such as Kings County. All vehicles traveling to/from the defined geographic area are tracked within the Kings County Association of Governments (KCAG) model, and the number of trips and length of trips is used to calculate the OD VMT.

The KCAG 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) trip-based model is a travel demand forecasting model with socioeconomic and transportation network inputs, such as population, employment, and the regional and local roadway network, that estimates current travel behavior and forecasts future changes in travel demand. The current KCAG model has 2015 as the base year and 2042 as the forecast year and can be used to estimate VMT for the current year 2022 conditions. The 2035 model contains the planned transportation improvements in the RTP and the growth projections in the SCS. KCAG created an online VMT mapping tool (Available Online Here) that identifies VMT per capita and VMT per employee by traffic analysis zone (TAZ). KCAG's mapping tool was created utilizing trip-based transportation models created for the eight San Joaquin Valley MPOs to satisfy the requirements of SB 375. The KCAG model traffic validation is based on several criteria, including vehicle miles of travel, total volume by road type, and percent of links within acceptable limits.

When calculating VMT for a project, the KCAG's VMT methodology for this project matches the methodology used to establish the Baseline VMT metrics (as summarized in Table C.2-3). For residential projects in the County of Kings, VMT is defined as a measurement of VMT per capita, which reflects all trips that begin or end at a residential unit within the County. All home-based auto vehicle trips are traced back to the residence of the trip-maker and then divided by the population within the geographic area to get the efficiency metric of VMT per capita. Following the VMT analysis, the VMT per capita of the project TAZ is then compared to the KCAG's Baseline VMT to determine if it exceeds the impact threshold.

In January 2019, the Natural Resources Agency certified the Office of Planning and Research's (OPR) proposed revisions, which resulted in the creation of Section 15064.3 of the CEQA Guidelines. Section 15064.3(a) describes its purpose as:

"This section describes specific considerations for evaluating a project's transportation impacts. Generally, vehicle miles traveled are the most appropriate measure of transportation impacts. For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) below (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact."

OPR created a Technical Advisory (December 2018) (TA) as guidance for evaluating vehicle miles traveled (VMT) impacts. VMT significance thresholds are recommended by OPR beginning on page 8 of the TA. Beginning on page 10 of the TA, OPR states:

"Public Resources Code section 21099 directs OPR to propose criteria for determining the significance of transportation impacts. In this Technical Advisory, OPR provides its recommendations to assist lead agencies in selecting a significance threshold that may be appropriate for their particular projects. While OPR's Technical Advisory is not binding on public agencies, CEQA allows lead agencies to 'consider thresholds of significance . . . recommended by other public agencies, provided the decision to adopt those thresholds is supported by substantial evidence.' (CEQA Guidelines, § 15064.7, subd. (c).) Based on OPR's extensive review of the applicable research, and in light of an assessment by the California Air Resources Board quantifying the need for VMT reduction in order to meet the State's long-term climate goals, OPR recommends that a per capita or per employee VMT that is fifteen percent below that of existing development may be a reasonable threshold."

"Fifteen percent reductions in VMT are achievable at the project level in a variety of place types." [citing CAPCOA (2010) Quantifying Greenhouse Gas Mitigation Measures, p. 55]

"Moreover, a fifteen percent reduction is consistent with SB 743's direction to OPR to select a threshold that will help the State achieve its climate goals. As described above, section 21099 states that the criteria for determining significance must 'promote the reduction in greenhouse gas emissions.' In its document California Air Resources Board 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals, CARB assesses VMT reduction per capita consistent with its evidence-based modeling scenario that would achieve State climate goals of 40 percent GHG emissions reduction from 1990 levels by 2030 and 80 percent GHG emissions reduction levels from 1990 by 2050. Applying California Department of Finance population forecasts, CARB finds per-capita light-duty vehicle travel would need to be approximately 16.8 percent lower than existing, and overall per-capita vehicle travel would need to be approximately 14.3 percent lower than existing levels under that scenario. Below these levels, a project could be considered low VMT and would, on that metric, be consistent with 2017 Scoping Plan Update assumptions that achieve climate state climate goals."

According to the California Air Resources Board's (CARB) webpage (Online Here):

"Senate Bill 375 requires CARB to develop and set regional targets for greenhouse gas (GHG) emission reductions from passenger vehicles. CARB has set regional targets, indexed to years 2020 and 2035, to help achieve significant additional GHG emission reductions from changed land use patterns and improved transportation in support of the State's climate goals, as well as in support of statewide public

health and air quality objectives. Metropolitan planning organizations (MPOs) must prepare a sustainable communities strategy (SCS) that will reduce GHG emissions to achieve these regional targets, if feasible to do so."

The same CARB webpage identifies a thirteen percent (13%) target for GHG emission reduction from passenger vehicles (indexed to the year 2035) for the Kings County Association of Governments (KCAG) MPO.

OPR's recommendation "that a per capita or per employee VMT that is fifteen percent below that of existing development" is a valid threshold for the County of Kings because it is consistent with CARB's thirteen percent (13%) GHG vehicle emission reduction target to which KCAG's members are subject. It is reasonable to conclude that a reduction in VMT directly corresponds to a reduction in GHG emissions from passenger vehicles and that a proposed project that is estimated to generate a per capita or per employee VMT that is more than fifteen percent (15%) below that of existing development will result in GHG emission reduction consistent with CARB's thirteen percent (13%) reduction target for the KCAG metropolitan planning organization (MPO). For purposes of the County's VMT evaluation efforts, it is appropriate to utilize OPR's recommended fifteen-percent-below-existing development VMT threshold because it is consistent with CARB's applicable GHG emission reduction target.

The threshold is a 15% reduction below the County's VMT.

Table C.2-4 presents the population inputs for the proposed project. The project area population was estimated by referring to the population per household in the Armona Community from the 2020 U.S. Census.

Table C.2-4. Land Use Inputs for the Proposed Project

Land Use	*Size*	*Population*
Single-Family Detached Housing	100 Homes	401

Environmental Impact Analysis

Impact TR-1: The project would generate VMT exceeding the Thresholds established by OPR's VMT requirements.

Class 1: Significant and Unavoidable: Based on OPR's VMT requirements, all projects must limit the generation of VMT to 15% or more below the County's average. A project that does not meet these requirements will have a significant impact. The VMT per capita of the project was calculated for the existing year (2022) using the estimates from the KGAG model. While the project would be built over time, the Year 2022 analysis shows how the VMT generated by the proposed project compares to current travel and VMT characteristics in Kings County. Table C.2-5 presents the VMT per capita of the TAZ where the project is located compared to the Kings County regional average (identified as the County Baseline VMT in the table).

Table C.2-5. Proposed Project VMT Analysis	
VMT Metrics for Housing Project	*VMT Per Capita*
Project TAZ VMT Estimate (2022)	10.60
County Baseline VMT	9.6
Threshold: 15% Below County Baseline	8.16
Project Level over Threshold	+23%
VMT Impact?	YES

As shown in Table C.2-5, the proposed project's TAZ is estimated to generate 10.60 VMT Per Capita. In comparison to the County's threshold of 15% below the Baseline VMT of the County, the proposed project's TAZ is 23% over the threshold. The higher VMT results are due to the location of the proposed project in Armona with lower development densities that can result in longer travel distances in comparison to the broader County area.

In order to mitigate the project's VMT impacts, the VMT per capita would need to be reduced by 23%, which equates to a reduction of approximately 978 total daily VMT. Current mitigation guidance provided by CAPCOA states the maximum possible reduction in VMT is 15 percent in suburban locations (Quantifying Greenhouse Gas Mitigation Measures, CAPCOA, 2010, Page 61). According to this document, the Project is in a suburban location. This document defines locations as either Urban, Compact Infill, Suburban Center, Suburban, or Rural. The definition of suburban matches this location, as shown below in Table C.2-6. For this Project's mitigation measures, it will be classified as suburban.

Table C.2-6. Definition of Suburban Area Compared to the Project		
	CAPCOA Suburb Definition. "Suburbs typically have the following characteristics: "	**Summers Pointe Project/Site**
Location relative to the regional core:	These locations are typically 20 miles or more from a regional CBD	28 miles from Downtown Fresno
Ratio or relationship between jobs and housing:	Jobs Poor	Armona has 410 Employees in the Community, and a Work Force of 966 (2019 U.S. Census), for a Net Job Outflow of -556 Jobs
Typical building heights in stories:	One to two stories	Single-story buildings proposed
Typical street pattern:	Curvilinear (cul-de-sac based)	Curvilinear *(this project and the surrounding developments actually exhibit more of a curvilinear loop pattern so I wouldn't call it "cul-de-sac based", but it's still classified as curvilinear)*
Typical setbacks:	Parking is generally placed between the street and office or retail buildings;	N/A for the proposed project. True of commercial/office uses within 1 mile.

	Large-lot residential is common	Typical suburban single-family lot sizes proposed
Parking supply	Ample, largely surface lot-based	Ample on-street parking provided
Parking prices	None	None proposed & paid parking not typical within 1 mile of the project site

Source: Quantifying Greenhouse Gas Mitigation Measures, CAPCOA, 2010, Page 60

This is because a residential project is only able to decrease VMT with certain methods, primarily by increasing transit use or providing more employment opportunities and complementary land uses near the residences. These methods are difficult to achieve in suburban areas as compared to dense urban areas. Therefore, the proposed project is unable to mitigate the VMT impact, resulting in a significant and unavoidable impact (Class 1).

Mitigation Measures

CAPCOA states the maximum possible reduction in VMT is 15% in suburban locations, less than the 23% reduction required. However, the project will still incorporate mitigation measures to potentially reduce the VMT. These are incorporated from *Quantifying Greenhouse Gas Mitigation Measures, 2010,* CAPCOA. A summary of the mitigation measures that were considered is shown below in Table C.2-7.

Mitigation Measure	Description	Applicable to the Project?	Implementation Feasible?	Reason for Not Implementing
LUT-1: Increase Density	Designing the Project with increased densities, where allowed by the General Plan and/or Zoning Ordinance reduces GHG emissions associated with traffic in several ways. Density is usually measured in terms of persons, jobs, or dwellings per unit area.	Yes	Yes	
LUT-2: Increase Location Efficiency	The location of the Project relative to the type of urban landscape such as being located in an urban area, infill, or suburban center influences the amount of VMT compared to the statewide average	No		Not Located in an urban area, infill, or suburban center.
LUT-3: Increase Diversity of Urban and Suburban Developments	Having different types of land uses near one another can decrease VMT since trips between land use types are	Yes	Yes	

	shorter and may be accommodated by non-auto modes of transport.			
LUT-4: Increase Destination Accessibility	Destination accessibility is measured in terms of the number of jobs or other attractions reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones. The location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces the VMT.	Yes	Yes	
LUT-5: Increase Transit Accessibility	Locating a project with high density near transit will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT.	No		The project is not high-density, and no major transit is established near the project.
LUT-6: Integrate Affordable and Below Market Rate Housing	BMR housing provides greater opportunities for lower-income families to live closer to job centers and achieve jobs/housing matches near transit. This strategy potentially encourages building a greater percentage of smaller units that allow a greater number of families to be accommodated on infill and transit-oriented development sites within a given building footprint and height limit.	Yes	Yes	
LUT-7: Orient Project Toward Non-Auto Corridor	A project that is designed around an existing or planned transit, bicycle, or pedestrian corridor encourages alternative mode use.	No		No Non-Auto Corridors are existing or are planned.

LUT-8: Locate Project near Bike Path/Bike Lane	A Project that is designed around an existing or planned bicycle facility encourages alternative mode use.	No		No existing or planned Class 1 or 2 bike lanes near the project site.
LUT-9: Improve Design of Development	Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, the proportion of four-way intersections, or the number of intersections per square mile. Design is also measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments.	Yes	Yes	
SDT-1: Provide Pedestrian Network Improvements	Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT.	Yes	Yes	
SDT-2: Provide Traffic Calming Measures	Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift will result in a decrease in VMT.	Yes	Yes	
SDT-3: Implement a Neighborhood Electric Vehicle (NEV) Network	NEVs are classified in the California Vehicle Code as a “low speed vehicle”. They are electric powered and must conform to applicable federal automobile safety standards. NEVs offer an alternative to traditional vehicle trips and can legally be used on	No		Not financially feasible for small low income suburban residential development.

	roadways with speed limits of 35 MPH or less (unless specifically restricted). They are ideal for short trips up to 30 miles in length. To create an NEV network, the project will implement the necessary infrastructure, including NEV parking, charging facilities, striping, signage, and educational tools. NEV routes will be implemented throughout the project and will double as bicycle routes.			
SDT-4: Create Urban Non-Motorized Zones	The project, if located in a central business district (CBD) or major activity center, will convert a percentage of its roadway miles to transit malls, linear parks, or other nonmotorized zones. These features encourage non-motorized travel and thus a reduction in VMT.	No		The project is not an urban, commercial project and is not located in an urban area.
SDT-5: Incorporate Bike Lane Street Design	The project will incorporate bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments. These on-street bike accommodations will be created to provide a continuous network of routes, facilitated with markings and signage.	Yes	Yes	
SDT-6: Provide Bike Parking in Non-Residential Projects	A non-residential project will provide short-term and long-term bicycle parking facilities to meet the peak season maximum demand.	No		This mitigation does not apply to residential projects
SDT-7: Provide Bike Parking with Multi-Unit Residential Projects	Long-term bicycle parking will be provided at apartment complexes or condominiums without garages.	No		The Project is not a Multi-Unit Residential.

SDT-8: Provide Electric Vehicle Parking	This project will implement accessible electric vehicle parking. The project will provide conductive/inductive electric vehicle charging stations and signage prohibiting parking for non-electric vehicles.	No		Not feasible, the project does not have parking spaces to reserve or to charge vehicles.
SDT-9: Dedicate Land for Bike Trails	Larger projects may be required to provide for, contribute to, or dedicate land for the provision of off-site bicycle trails linking the project to designated bicycle commuting routes in accordance with an adopted citywide or countywide bikeway plan.	No		Not feasible, no regional bike route near the project site.
PDT-1: Limit Parking Supply	The project will change parking requirements and types of supply within the project site to encourage "smart growth" development and alternative transportation choices by project residents and employees.	No		No Parking on the Project Site.
PDT-2: Unbundle Parking Costs from Property Cost	This project will unbundle parking costs from property costs. Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost from the property cost.	No		No Parking on Project Site.
PDT-3: Implement Market Price Public Parking (On-Street)	This project and city in which it is located will implement a pricing strategy for parking by pricing all central business district/employment center/retail center on-street parking. It will be priced to encourage "park once" behavior.	No		This is not applicable to Residential-Only Projects.

PDT-4: Require Residential Area Parking Permits	This project will require the purchase of residential parking permits (RPPs) for long-term use of on-street parking in residential areas. Permits reduce the impact of spillover parking in residential areas adjacent to commercial areas, transit stations, or other locations where parking may be limited and/or priced.	No		The project is not adjacent to commercial areas, transit stations, or other locations that may produce spillover parking. It would not be reasonable to require parking permits.
TRT-1: Implement Commute Trip Reduction Policy – Voluntary	A multi-strategy program that encompasses a combination of individual measures described in measures TRT-3 through TRT-9. It is presented as a means of preventing double-counting of reductions for individual measures that are included in this strategy. It does so by setting a maximum level of reductions that should be permitted for a combined set of strategies within a voluntary program.			
TRT-2: Implement Commute Trip Reduction Program – Required Implementation/Monitoring	A multi-strategy program that encompasses a combination of individual measures described in measures TRT-3 through TRT-9. It is presented as a means of preventing double-counting of reductions for individual measures that are included in this strategy. It does so by setting a maximum level of reduction that should be permitted for a combined set of strategies within a program that is contractually required of the development sponsors and managers			

	and accompanied by a regular performance monitoring and reporting program.			
TRT-3: Provide Ride-Sharing Programs	Increasing the vehicle occupancy by ride sharing will result in fewer cars driving the same trip, and thus a decrease in VMT. The project will include a ride-sharing program as well as a permanent transportation management association membership and funding requirement.	Yes	Yes	
TRT-4: Implement Subsidized or Discounted Transit Program	Measure Description: This project will provide subsidized/discounted daily or monthly public transit passes. The project may also provide free transfers between all shuttles and transit to participants. These passes can be partially or wholly subsidized by the employer, school, or development.	Yes	No	Not financially feasible for a small low income suburban residential development.
TRT-5: Provide End of Trip Facilities	Non-residential projects will provide "end-of-trip" facilities for bicycle riders including showers, secure bicycle lockers, and changing spaces. End-of-trip facilities encourage the use of bicycling as a viable form of travel to destinations, especially to work. End of trip facilities provide the added convenience and security needed to encourage bicycle commuting.	No		The measure does not apply to residential projects
TRT-6: Encourage Telecommuting and Alternative Work Schedules	Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work	No		The measure does not apply to residential projects

	schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks.			
TRT-7: Implement Commute Trip Reduction Marketing	Information sharing and marketing are important components to successful commute trip reduction strategies. Implementing commute trip reduction strategies without a complementary marketing strategy will result in lower VMT reductions. Marketing strategies may include: New employee orientation of trip reduction and alternative mode options, Event promotions, or Publications	No		The measure does not apply to residential projects
TRT-8: Implement Preferential Parking Permit Program	The project will provide preferential parking in convenient locations (such as near public transportation or building front doors) in terms of free or reduced parking fees, priority parking, or reserved parking for commuters who carpool, vanpool, ride-share or use alternatively fueled vehicles	No		The measure does not apply to residential projects
TRT-9: Implement Car-Sharing Program	This project will implement a car-sharing project to allow people to have on-demand access to a shared fleet of vehicles on an as-needed basis.	Yes	Yes	
TRT-10: Implement a School Pool Program	This project will create a ridesharing program for school children. Most school districts provide bussing services to public schools only. School Pool helps match parents to transport students to private schools, or to	Yes	No	Due to budget constraints, schools in the Armona area are not able to manage a School Pool program.

	schools where students cannot walk or bike but do not meet the requirements for bussing.			
TRT-11: Provide Employer-Sponsored Vanpool/Shuttle	This project will implement an employer-sponsored vanpool or shuttle. A vanpool will usually service employees' commute to work while a shuttle will service nearby transit stations and surrounding commercial centers.	No		Mitigation is not used in Residential Projects
TRT-12: Implement Bike-Sharing Programs	This project will establish a bike sharing program. Stations should be at regular intervals throughout the project site. The number of bike-share kiosks throughout the project area should vary depending on the density of the project and surrounding area.	Yes	No	Bike sharing programs have minimial impacts in suburban areas as location and context heavily influence their effectiveness. These programs work best in densely populated areas.
TRT-13: Implement School Bus Program	The project will work with the school district to restore or expand school bus services in the project area and local community.	Yes	No	Due to budget constraints, only students who live further than 1.5 miles from the Armona Elementary School will be provided school bus services.
TRT-14: Price Workplace Parking	The project will implement workplace parking pricing at its employment centers. This may include: explicitly charging for parking for its employees, implementing above market rate pricing, validating parking only for invited guests, not providing employee parking and transportation allowances, and educating employees	No		The measure does not apply to residential projects

	about available alternatives.			
TRT-15: Implement Employee Parking "Cash-Out"	The project will require employers to offer employee parking "cash-out." The term "cashout" is used to describe the employer providing employees with a choice of forgoing their current subsidized/free parking for a cash payment equivalent to the cost of the parking space to the employer.	No		The measure does not apply to residential projects
TST-1: Provide a Bus Rapid Transit System	The project will provide a Bus Rapid Transit (BRT) system with design features for high quality and cost-effective transit service. These include: • Grade-separated right-of-way, including bus only lanes (for buses, emergency vehicles, and sometimes taxis), and other Transit Priority measures. Some systems use guideways which automatically steer the bus on portions of the route. • Frequent, high-capacity service • High-quality vehicles that are easy to board, quiet, clean, and comfortable to ride. • Pre-paid fare collection to minimize boarding delays. • Integrated fare systems, allowing free or discounted transfers between routes and modes.	No		The project is not large enough to provide this measure

	• Convenient user information and marketing programs. • High quality bus stations with Transit Oriented Development in nearby areas. • Modal integration, with BRT service coordinated with walking and cycling facilities, taxi services, intercity bus, rail transit, and other transportation services.			
TST-2: Implement Transit Access Improvements	This project will improve access to transit facilities through sidewalk/ crosswalk safety enhancements and bus shelter improvements.	Yes	Yes	
TST-3: Expand Transit Network	The project will expand the local transit network by adding or modifying existing transit service to enhance the service near the project site. This will encourage the use of transit and therefore reduce VMT.	Yes	Yes	
TST-4: Increase Transit Service Frequency/Speed	This project will reduce transit-passenger travel time through more reduced headways and increased speed and reliability. This makes transit service more attractive and may result in a mode shift from auto to transit which reduces VMT.	Yes	No	Due to KART budget constraints increased transit service frequency and speed is not financially feasible
TST-5: Provide Bike Parking Near Transit	Provide short-term and long-term bicycle parking near rail stations, transit stops, and freeway access points.	No		Not applicable to single-family residential projects.
TST-6: Provide Local Shuttles	The project will provide local shuttle service through coordination with the local transit	Yes	Yes	

	operator or private contractor. The local shuttles will provide service to transit hubs, commercial centers, and residential areas			
RPT-1: Implement Area or Cordon Pricing	This project will implement a cordon pricing scheme. The pricing scheme will set a cordon (boundary) around a specified area to charge a toll to enter the area by vehicle. The cordon location is usually the boundary of a central business district (CBD) or urban center but could also apply to substantial development projects with limited points of access.	No		The project is not in a central business district or urban center.
RPT-2: Improve Traffic Flow	The project will implement improvements to smooth traffic flow, reduce idling, eliminate bottlenecks, and management speed. Strategies may include signalization improvements to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds.	No		The project is not large enough to have a meaningful impact
RPT-3: Required Project Contributions to Transportation Infrastructure Improvement Projects	The project should contribute to traffic-flow improvements or other multi-modal infrastructure projects that reduce emissions and are not considered as substantially growth inducing.	Yes	No	Not financially feasible for a small low income suburban residential development.

RPT-4: Install Park-and-Ride Lots	This project will install park-and-ride lots near transit stops and High Occupancy Vehicle (HOV) lanes. Park-and-ride lots also facilitate car- and vanpooling.	No		The project is not located near transit stops and is not large enough to feasibly implement

Table C.2-7: Mitigation Measures to Reduce VMT Considered

LUT-1. Increase Density: Designing the Project with increased densities, where allowed by the General Plan and/or Development Code reduces GHG emissions associated with traffic in several ways. Density is usually measured in terms of persons, jobs, or dwellings per unit area. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. This strategy also provides a foundation for the implementation of many other strategies which would benefit from increased densities. For example, transit ridership increases with density, which justifies enhanced transit service. The project is applying for a density bonus, which will provide more housing units per acre than a typical neighborhood in the R-1-6 zone. To estimate the potential VMT reduction, the formula below will be used:

% VMT Reduction = A * B [Not to exceed 30%]

Where:
A = Percentage increase in housing units per acre
B= Elasticity of VMT with respect to density

The site is zoned R-1-6 (Single-Family Residential, minimum 6,000 sf per lot). If every lot was the minimum of 6,000 square feet, the site would fit 92 homes, a density of 4.58 D.U./Acre. The percentage increase in housing units per acre (A in the formula) is calculated by subtracting the density of the proposed project (5.43 D.U./Acre) by the density of minimum lot sizes of the R-1-6 zone (4.58 D.U./Acre). This number (0.85) is divided by the minimum R-1-6 density (4.58 D.U./Acre). This equals 0.1856 (18.56%), which will be the A variable.

According to *Draft Policy Brief on the Impacts of Residential Density Based on a Review of the Empirical Literature, 2010,* by Boarnet and Handy, the Elasticity of VMT with respect to density for residential uses is 0.07. This will be the B variable.

This mitigation to increase density can total up to a 1.3% reduction in VMT.

Mitigation Measure LUT 1: Prior to the start of construction, the applicant shall enter the project into a density bonus agreement, which will provide more housing units per acre than a typical neighborhood in the R-1-6 zone.

LUT-3. Increase Diversity of Urban and Suburban Developments: Having different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-auto modes of transport. For example, when residential areas are in the same neighborhood (on-site and/or offsite within ¼-mile) as retail and office buildings, a resident does not need to travel outside of the neighborhood to meet his/her trip needs. The 2035 Armona Community Plan Land Use Map shows

that there is Medium-Density-Residential, Medium-High-Density Residential, Mixed-Use, Downtown Mixed-Use, Rural Commercial, Public/Quasipublic, and Agriculture land uses planned within a quarter-mile radius of the project site. To estimate the potential VMT reduction, the formula below will be used:

% VMT Reduction = Land Use * B [Not to exceed 30%]

Where:
Land Use = Percentage increase in land use index versus single-use development
B = elasticity of VMT with respect to land use index

Within a quarter mile of the project site, the planned land uses are 36% Low-Density Residential, 35% Agriculture/Open Space, 17% Multifamily Density Residential, 10% Commercial, and 1% Public/Quasipublic. The mixed-use designations were divided between Multifamily Residential and Commercial to match the land use areas. To calculate the land use index, the formula used is:

$$-(\sum_{i=1}^{6} a_i \text{ x } \ln(a_i)) / \ \ln(6).$$

The different land uses are shown below:

- a_1= Single-Family Residential
- a_2= Multi-family Residential
- a_3= Commercial
- a_4= Industrial
- a_5= Public/Quasipublic
- a_6= Agriculture/Open Space

Expanded out, this formula is:

Index = -(.355*ln(.355) + .175*ln(.175) + .13*ln(.13) +.015*ln(.015) + .352*ln(.352) + .01*ln(.01)) / ln(6)

The land use index surrounding the site is .77. The single land use index is .15. Therefore the percentage increase in the land use index is 413%.

According to *Travel and the Built Environment - A Meta-Analysis, 2010,* by Ewing and Cervero, the elasticity of VMT with respect to the land use index is .09. This will be the B variable.

This mitigation to increase diversity can total up to a 37% reduction in VMT, however, there is a 30% cap on potential VMT reduction to limit the influence of a single mitigation. Therefore, the location of this project in a future mixed-use area can total up to a 30% reduction in VMT. However, most of the uses planned are far from being completed, and it would be speculative to assume a high reduction in VMT. In the future, the location of this project could present options to reduce VMT.

Mitigation Measure LUT-3: The project site will be located within ¼ mile of Medium Density Residential, Medium High-Density Residential, Mixed Use, Downtown Mixed Use, Rural Commercial, Public/Quasipublic, and Agriculture land uses.

LUT-4. Increase Destination Accessibility: The project will be located in an area with high accessibility to destinations. Destination accessibility is measured in terms of the number of jobs or other attractions

reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones. The location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces the VMT. The nearest downtown/job center is the Hanford Downtown, approximately 3.1 miles to the East of the project site. The standard suburban distance to a job center or downtown in North America is 12 miles. To estimate the potential VMT reduction, the formula below will be used:

% VMT Reduction = Center Distance * B [Not to exceed 30%]

Where:
Center Distance = Percentage decrease in distance to downtown/job center versus typical suburban development
B = Elasticity of VMT with respect to distance to downtown or major job center

The Hanford Downtown is 3.1 miles East of the project site, and the standard suburban distance in North America is 12 miles. Therefore, the percentage decrease is 74%.

According to *Travel and the Built Environment - A Meta-Analysis, 2010,* by Ewing and Cervero, the elasticity of VMT with respect to the distance to downtown/job center is 0.2. This will be the B variable.

The mitigation to provide destination accessibility can total up to a 15% reduction in VMT. However, there is no easy way to access Hanford without a vehicle. Additionally, only 24% of Armona workers commute to Hanford, and the rest often have to travel further distances. Therefore, it would not be expected to see a 15% reduction in VMT. Potentially in the future, the project's vicinity to Hanford could reduce VMT.

Mitigation Measure LUT-4: The project site shall be located approximately 3 to 3.5 miles from the Hanford Downtown.

LUT-6. Integrate Affordable and Below Market Rate Housing: Income has a statistically significant effect on the probability that a commuter will take transit or walk to work. BMR housing provides greater opportunities for lower-income families to live closer to job centers and achieve jobs/housing matches near transit. It also addresses to some degree the risk that new transit-oriented development would displace lower-income families. This strategy potentially encourages building a greater percentage of smaller units that allow a greater number of families to be accommodated on infill and transit-oriented development sites within a given building footprint and height limit. Lower-income families tend to have lower levels of auto ownership, allowing buildings to be designed with less parking which, in some cases, represents the difference between a project being economically viable or not. The project site plans to include at least 10 below-market-rate housing, out of 109 total houses (9.17%). To estimate the potential VMT reduction, the formula below will be used:

% VMT Reduction = .04 * Percentage of units in the project that are deed-restricted BMR housing

The mitigation to provide Affordable and Below Market Rate Housing can total up to a 0.37% reduction in VMT.

Mitigation Measure LUT-6: Prior to the start of construction, the applicant shall enter the project into a density bonus agreement, which will include at least 10 below-market-rate houses out of 109 total houses.

LUT-9. Improve Design of Development: The project will include improved design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, the proportion of four-way intersections, or the number of intersections per square mile. Design is also measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, the presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments. This could be measured in the number of intersections in the project. To estimate the potential VMT reduction, the formula below will be used:

% VMT Reduction = Intersection * B

Where:
Intersections = Percentage increase in intersections versus a typical suburban development
B = Elasticity of VMT with respect to the percentage of intersections

The project contains 3 intersections on .03 square miles, approximately 95.6 intersections per square mile. The typical suburban neighborhood averages 36 intersections per square mile. Therefore, the percentage increase is 165%.

According to *Travel and the Built Environment - A Meta-Analysis, 2010,* by Ewing and Cervero, the elasticity of VMT with respect to the percentage of intersections is 0.12. This will be the B variable.

The mitigation for an improved design of development can total up to a 20% reduction in VMT. However, the project has a small area and intersections should not be relied upon to improve walkability. The site will have sidewalks and an overall pedestrian-friendly network, but it should not be assumed that it will reduce 20% of VMT.

Mitigation Measure LUT-9: The project shall include improved design elements to enhance walkability and connectivity. These elements will include an above-average amount of street intersections, pedestrian crossings, and sidewalks throughout the project site.

SDT-1. Provide Pedestrian Network Improvements: Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT. The project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The project will minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated. The project site will contain pedestrian sidewalks throughout and connect to nearby homes and commercial uses. According to the *Transportation Emission Guidebook, 2010,* by The Center for Clean Air Policy, this can result in up to a 2% reduction in VMT.

Mitigation Measure SDT-1: The project shall eliminate physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation. The project site will contain pedestrian sidewalks throughout and connect to nearby homes and commercial uses.

SDT-2: Provide Traffic Calming Measures: Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift will result in a decrease in VMT. The project design will include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements.

Roadways will be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic-calming features. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others. The Project will attempt to provide traffic calming measures where feasible. The Project does not include any major intersections, preventing any intersection traffic calming measures. The Project will implement where needed, marked crosswalks and on-street parking. To estimate the VMT reduction, Table 3.2-8 below is used.

		% of streets with improvements			
		25%	*50%*	*75%*	*100%*
		% VMT Reduction			
% of intersections with improvements	*25%*	0.25%	0.25%	0.5%	0.5%
	50%	0.25%	0.5%	0.5%	0.75%
	75%	0.5%	0.5%	0.75%	0.75%
	100%	0.5%	0.75%	0.75%	1%

Table 3.2-8: Percent VMT Reduction for Mitigation SDT-2, Traffic Calming Measures. Source: CAPCOA, 2010

For a conservative estimate, 75% of streets and intersections will be used due to a lack of options available for the site layout. This mitigation by providing Traffic Calming Measures can be estimated to reduce VMT by approximately 0.75%.

Mitigation Measure SDT-2: Prior to the start of construction, the applicant shall designate the location of appropriate traffic calming features such as marked crosswalks and on-street parking for the project site. The applicant will show these features on the improvement drawings for the project site. A cost estimate for continued maintenance of such features will be calculated and will be included in the project's zone of benefits.

SDT-5: Incorporate Bike Lane Street Design: The project may incorporate bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments. These on-street bike accommodations will be created to provide a continuous network of routes, facilitated with markings and signage. These improvements can help reduce peak-hour vehicle trips by making commuting by bike easier and more convenient for more people. In addition, improved bicycle facilities can increase access to and from transit hubs, thereby expanding the "catchment area" of the transit stop or station and increasing ridership. Bicycle access can also reduce parking pressure on heavily used and/or heavily subsidized feeder bus lines and auto-oriented park-and-ride facilities. The project may not be able to implement Class 1 or 2 bike lanes, but a Class 3 bike route is the most reasonable for a project of this type. No literature states the amount of reduction in VMT from implementing Class 3 bike routes, but it could increase bicycle use, in turn reducing potential VMT impacts.

Mitigation Measure SDT-5: Prior to the start of construction, the applicant shall designate the location of a Class 3 bike route. The applicant will show the location of appropriate bike route striping in their improvement drawings for the project site. A cost estimate for continued maintenance of such striping will be calculated and will be included in the project's zone of benefits.

TRT-3: Provide Ride-Sharing Programs: Increasing vehicle occupancy by ride-sharing will result in fewer cars driving the same trip, and thus a decrease in VMT. The project could include a ride-sharing program as well as a permanent transportation management association membership and funding requirement. Funding may be provided by Community Facilities, District, County Service Area, or other non-revocable funding mechanisms. The project could promote ride-sharing programs through a multi-faceted approach such as:

- Designating a certain percentage of parking spaces for ride-sharing vehicles.
- Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles.
- Providing a website or message board for coordinating rides.

This project would be able to provide a designated area for passenger loading and unloading. To estimate the impact on VMT, the formula below from CAPCOA can be used.

% VMT Reduction = Commute * Employee

Where:

Commute = % reduction in commute VMT (5% (low-density suburb), 10% (suburban center), 15% (urban) annual reduction in commute VMT), 5% will be used for this Project

Employee = % of employees eligible. 20% will be used for this Project, as many employees commute to Hanford or Lemoore.

Providing a Ride-Sharing Program can result in a potential 1% reduction in VMT.

Mitigation Measure TRT-3: Prior to the start of construction, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a ride-sharing program to residents of the project site. The applicant shall designate an on-street parking space to be used by ride-sharing vehicles.

TRT-9: Implement Car-Sharing Program: This project will implement a car-sharing project to allow people to have on-demand access to a shared fleet of vehicles on an as-needed basis. User costs are typically determined through mileage or hourly rates, with deposits and/or annual membership fees. The car-sharing program could be created through a local partnership or through one of many existing car-share companies. Car-sharing programs may be grouped into three general categories: residential- or city-wide-based, employer-based, and transit station-based. Transit station-based programs focus on providing the "last-mile" solution and link transit with commuters' final destinations. Residential-based programs work to substitute entire household-based trips. The projected VMT reduction will be found using the formula below.

% VMT Reduction = A * (B/C)

Where:

A = % reduction in car-share member annual VMT. According to "Car-Sharing: Where and How it Succeeds", 2005, this number is estimated at 37%.

B = the number of cars shared members per shared car. According to "Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions. Technical Appendices" by Cambridge Systematics, this number is estimated to be 20.

C = deployment level based on urban or suburban context. According to "Moving Cooler", this number is 2,000 for suburban project settings.

Implementing a Car-Sharing Program could potentially reduce VMT impacts by 0.4%.

Mitigation Measure TRT-9: Prior to the start of construction, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a car-sharing program to residents of the project site.

TST-2: Implement Transit Access Improvements: This project will improve access to transit facilities through sidewalk/ crosswalk safety enhancements and bus shelter improvements. If possible, the Kings Area Regional Transit (KART) could expand the local transit network to provide a transit stop near the Project Site. The Project would improve access to the stop if implemented. No literature states the amount of reduction in VMT from improving transit access, but it could increase transit use, in turn reducing potential VMT impacts.

Mitigation Measure TST-2: Prior to the start of construction, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide sidewalk/ crosswalk safety enhancements and bus shelter improvements for a new transit stop at or near the project site.

TST-3: Expand Transit Network: If possible, the Kings Area Regional Transit (KART) could expand the local transit network by adding or modifying existing transit services to enhance the service near the project site. The Project would accommodate a new transit stop on the project site if possible. This will encourage the use of transit and therefore reduce VMT. The projected VMT reduction will be found using the formula below.

% VMT Reduction = Coverage * B * Mode * D

Where:

Coverage = % increase in transit network coverage. A conservative estimate would be a 10% increase in transit network coverage.

B = Elasticity of transit. According to *TCRP Report 95,* the elasticity is 1.01 for suburban settings.

Mode = Existing transit mode share. According to the National Household Travel Survey, 2001, suburban settings have a transit mode share of 1.3%.

D = Adjustments from transit ridership increase to VMT (0.67, from CAPCOA, Appendix C)

Expanding the transit network to better accommodate the Project could potentially reduce VMT impacts by 0.09%.

Mitigation Measure TST-3: Prior to the start of construction, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a new transit stop at or near the project site.

TST-6: Provide Local Shuttles: The project will provide local shuttle service through coordination with the local transit operator or private contractor. The local shuttles could provide service to transit hubs, commercial centers, and residential areas. The benefits of Local Shuttles alone have not been quantified and should be grouped with Transit Network Expansion (TST-4) and Transit Service Frequency and Speed (TST-5) to solve the "first mile/last mile" problem. In addition, many of the Commute Trip Reduction Programs (TRP 1-13) also included local shuttles. No literature states the amount of reduction in VMT from providing local shuttles, but it could increase alternative forms of transportation, in turn reducing potential VMT impacts.

Mitigation Measure TST-6: Prior to the start of construction, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide shuttle service to residents of the project site.

C.2.4 Cumulative Impact Analysis

Geographic Extent

The area within which a cumulative VMT effect can occur is within the Community of Armona and the surrounding area. The extent of this project extended throughout the Community of Armona and surrounding areas. This is because related VMT effects are typically localized around nearby residential uses that are more likely to generate trips and associated VMT. For this reason, the geographic scope for the analysis of cumulative impacts is identified as the Community of Armona and the surrounding area.

The analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of the analysis is the Community of Armona and the surrounding area, as these projects have been identified by the County and would generate similar trip characteristics as the proposed project. While the geographic scope of cumulative VMT effects may extend beyond the scope of the direct effects, extending beyond this scope or estimating the indirect VMT effects of the proposed project would be speculative. In addition, each cumulative residential project (as identified in Table C.1-1) will have its own assumptions with respect to population and VMT generated, which may or may not coincide or overlap with the proposed project's effects.

Cumulative Effects of the Proposed Project

The addition of vehicle trips from cumulative projects in conjunction with proposed project trips would increase the total VMT in the area. However, while the total amount of VMT in the area might increase from overall population growth, the average VMT per trip is not expected to change significantly. While an increase in population and housing would occur, the overall commute characteristics of the Community of Armona are not expected to change significantly compared to that described in Section C.2.1. The County of Kings also includes goals and policies to encourage more residents living and working in the County, which would strive to decrease VMT.

Development of cumulative projects in and around the Community of Armona would generate long-term total VMT increases at different levels than the proposed project. The only current project, the Mobile Home Park, proposes 100 lots. This Mobile Home Project is located in a TAZ with a 2.89 VMT per capita (Figure C-4.1). This is substantially lower than the 9.6 VMT per capita of the County. Therefore, the contribution of the proposed project toward cumulatively increasing VMT over existing levels would be less than cumulatively considerable (Class III).

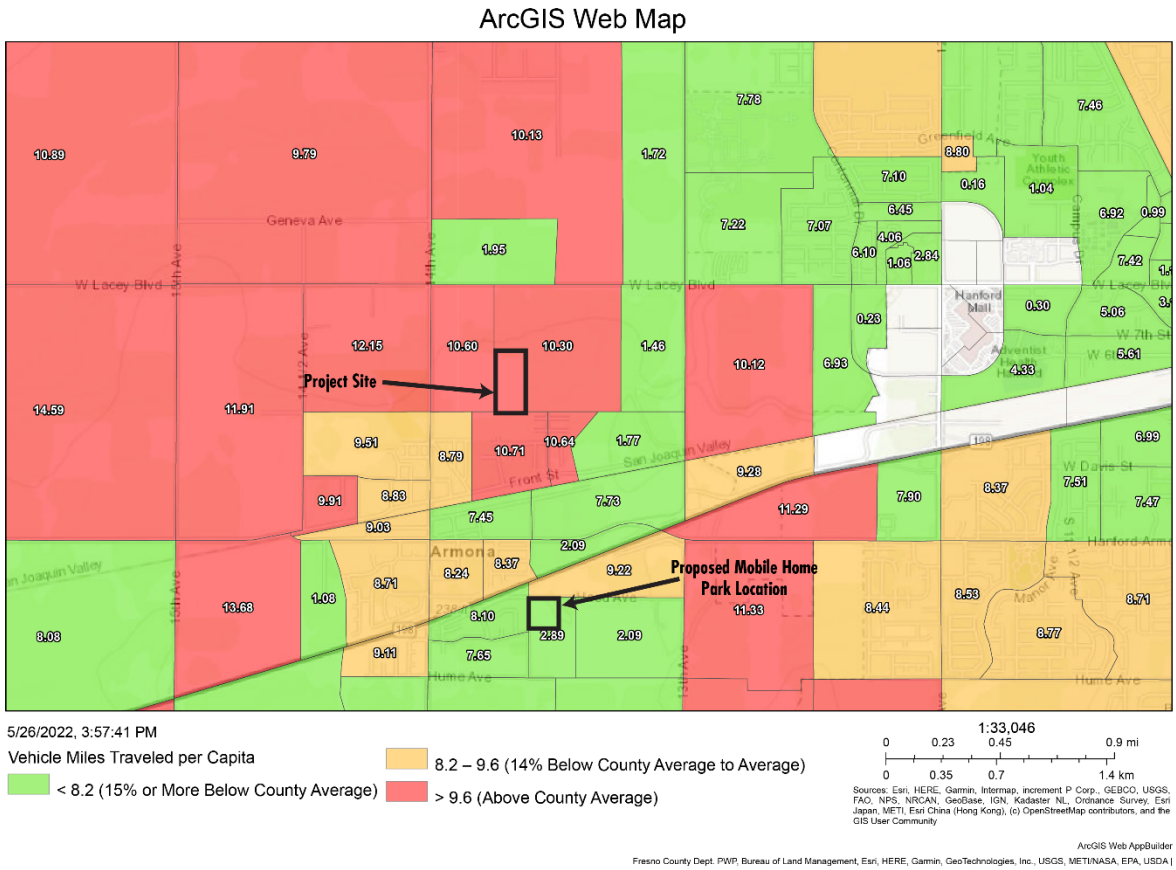

Figure C-4.1: TAZ Zones with Project and Proposed Mobile Home Park Locations. Source: [VMT Online Mapping Tool]

C.2.5 Level of Significance After Mitigation

As discussed under the analysis of Impact TR-1 (The project would Generate VMT Exceeding the County's Thresholds*),* the proposed project is unable to mitigate the VMT impact resulting in a significant and unavoidable impact that cannot be mitigated (Class I). The contribution of the project toward cumulatively increasing VMT over existing levels would be less than cumulatively considerable (Class III).

County of Kings
1400 W. Lacey Blvd
Hanford, CA 93230

SECTION D
Alternatives

Project Title: Tract 936 Summers Pointe

This section describes the alternatives to the proposed project, the alternatives screening process, and the environmental effects of alternatives retained for analysis. The intent of this section is to document (1) the range of alternatives that have been selected and evaluated; (2) the approach used by the County in screening the feasibility of these alternatives according to guidelines established under CEQA; (3) the results of the alternatives screening; and (4) the environmental impacts of each alternative relative to the proposed project.
This section is organized as follows:

- Section D.1 summarizes CEQA requirements related to alternatives;
- Section D.2 describes the process used to define alternatives to the proposed project;
- Section D.3 describes the alternatives retained for analysis, including the No Project Alternative (CEQA Guidelines §15126.6(e)), and presents impact analysis by discipline for each of these alternatives;
- Section D.4 describes the alternatives that were considered, but eliminated from detailed evaluation; and
- Section D.5 presents the comparison of alternatives and identifies the Environmentally Superior Alternative (CEQA Guidelines §15126.6(d)).

D.1 CEQA Requirements for Alternatives

An important aspect of EIR preparation is the identification and assessment of reasonable alternatives that have the potential to avoid or minimize the impacts of a proposed project. The CEQA Guidelines require consideration of the No Project Alternative (Section 15126.6(e)) and selection of a reasonable range of alternatives (Section 15126.6(d)). The EIR must adequately assess these alternatives to allow for a comparative analysis for consideration by decision-makers. The CEQA Guidelines (Section 15126.6(a)) state that:

> *An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.*

The key applicable provisions of the CEQA Guidelines (Section 15126.6) pertaining to the analysis of alternatives are summarized as follows:

- The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly.

- The “no project” alternative shall be evaluated along with its impact. The “no project” analysis shall discuss the existing conditions at the time the notice of preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by a “rule of reason;” therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice between the alternatives and the proposed project. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.
- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

D.1.1 Consistency with Project Objectives

The CEQA Guidelines require the consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may “impede to some degree the attainment of project objectives” (Section 15126.6(b)).

Specifically, the project objectives are as follows:

- Make productive use of the underutilized property by developing the site with residential uses consistent with the current Armona Community Plan.
- Increase the available single-family residential housing stock within the Armona Community.
- Build an integrated, high-quality development that has a range of single-family home sizes to offer homeownership opportunities attainable to a variety of household types and income levels.
- Connect future development with the existing community, reducing the strain on the utilities.
- Expand the Armona community.

D.1.2 Feasibility

The CEQA Guidelines (Section 15364) define feasibility as:

> *. . capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.*

In addition, the CEQA Guidelines Section 15126.6(f)) states that in determining the range of alternatives to be evaluated in the EIR, the factors that may be considered when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and proponent’s control over alternative sites. The feasibility of potential alternatives has been assessed by taking the following factors into account:

Legal Feasibility: Does the alternative have the potential to avoid lands that have legal protections that may prohibit or substantially limit the feasibility of permitting the proposed project?
Regulatory Feasibility: Does the alternative have the potential to avoid lands that have regulatory restrictions that may substantially limit the feasibility of, or permitting of, the proposed project?

Technical Feasibility: Is the alternative feasible from a technological perspective, considering available technology? Are there any construction, operational, or maintenance constraints that cannot be overcome?
Environmental Feasibility: Would implementation of the alternative cause substantially greater environmental damage than the proposed project, thereby making the alternative clearly inferior from an environmental standpoint?

This screening analysis does not focus on relative economic factors or the costs of the alternatives (as long as they are found to be economically feasible). CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives or would be more costly" (CEQA Guidelines Section 15126.6[b]).

D.1.3 Potential to Eliminate Significant Environmental Effects

CEQA requires that to be fully considered in an EIR, an alternative must have the potential to *"avoid or substantially lessen any of the significant effects of the project"* (CEQA Guidelines Section 15126.6(a)). If an alternative was identified that clearly does not provide potential overall environmental advantage as compared to the proposed project, it was eliminated from further consideration unless the County determined that the alternative should be analyzed because it addresses a concern identified during the scoping process. At the screening stage, it is not possible to evaluate all the impacts of the alternatives in comparison to the proposed project with absolute certainty, nor is it possible to quantify impacts. However, it is possible to identify elements of an alternative that are likely to be the sources of impact and to relate them, to the extent possible, to general conditions in the subject area.

This EIR (including Appendix B, Initial Study) concludes that the proposed project's impacts are reduced to less than significant levels in all impact areas with the incorporation of the identified mitigation measures and only VMT transportation impacts remain significant and unavoidable.

D.2 Alternatives Evaluation Process

The range of alternatives considered in this analysis was identified through the consideration of:

- Any comments received during the public and agency scoping process, and
- Alternatives identified by the EIR Team as a result of its independent review of the proposed project's impacts.

Consistent with Section 15126.6(e) of the CEQA Guidelines, the alternatives analysis includes consideration of the No Project Alternative. The analysis of the No Project Alternative must discuss existing conditions as they occurred at the time that a project's NOP was published, as well as "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" (CEQA Guidelines Section 15126.6 [e][2]). The requirements also specify that "[i]f disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed" (CEQA Guidelines Section 15126.6 [e][3][B]).

D.3 Alternatives Retained for Analysis

This section describes and evaluates the alternatives that meet the CEQA criteria defined in Section D.1 and thus, have been retained for the EIR's alternatives analysis. A description of those alternatives that did not meet CEQA's criteria for further evaluation is provided in Section D.4, with an explanation as to why alternatives were eliminated from further consideration. The "Environmentally Superior Alternative" is addressed in Section D.5. No other alternatives meeting the CEQA criteria defined in Section D.1 have been identified.

To comply with CEQA's requirements, each alternative that has been developed for this analysis has been evaluated in three ways:

- Does the alternative accomplish all or most of the basic objectives of the proposed project?
- Is the alternative potentially feasible (from environmental, legal, technological, and regulatory standpoints)?
- Does the alternative avoid or substantially lessen any significant effects of the proposed project (including consideration of whether the alternative itself could create significant effects potentially greater than those of the proposed project)?

D.3.1 Alternative 1: No Project Alternative

Description
Under Alternative 1, the proposed project would not be constructed, and the project site would remain undeveloped.

Objectives
Alternative 1 would not meet the project objectives because the site would remain vacant and would not be developed with residential units and supporting utilities and infrastructure. This alternative would not increase the available residential housing stock in the Community of Armona or offer homeownership opportunities.

Impact Analysis by Discipline
Transportation
The proposed project would not be built under Alternative 1 and would not add vehicle traffic. Therefore, this alternative would not contribute to VMT in the project area.

Conclusion: Alternative 1
The project site would remain undeveloped; therefore, this alternative would not generate any VMT. No transportation impacts would result from this alternative.

D.3.2 Alternative 2: Reduced Project Alternative

Description
Alternative 2 consists of developing the site with residential homes, identical to the proposed project, but with a decrease in the number of homes. The project site is zoned R-1-6, single-family residential, with a minimum lot size of 6,000 sf. However, this project applied for a density bonus for an average lot size of 5,094 sf. This allowed the maximum number of homes to be developed within site (109 total homes under current zoning and density bonus). Larger lots are permissible within the zone.

Under Alternative 2, the number of houses to be developed within the site would be reduced by increasing the individual lot sizes to an average of 7,500 sf. This would result in 74 homes being built under Alternative 2 (a reduction of 35 lots). This reduction ensures that the current zoning of R-1-6 would not need to change and would still apply to Alternative 2.

Objectives

The intent of Alternative 2 is to lessen or avoid the significant unavoidable VMT impact associated with the proposed project while meeting the project objectives. Alternative 2 would meet the project's objectives of developing the site with residential units and supporting utilities and infrastructure. This alternative would also increase the available residential housing stock in the Community of Armona and offer homeownership opportunities. However, the homes may not have the same affordability.

Impact Analysis by Discipline

Transportation

Reducing the number of houses built from 109 (Proposed Project) to 74 (Alternative 2) would reduce VMT generated under this alternative. This is a 35% reduction in the number of homes. Based on the VMT analysis provided in Chapter C.2 (Transportation), a reduction in VMT of 23% would be necessary to avoid a significant unavoidable VMT impact. Therefore, comparing the number of homes and VMT generated between the proposed project and Alternative 2, Alternative 2 could reduce VMT by 35%, potentially avoiding a VMT impact. However, a linear analysis would not be accurate. Because Alternative 2 would utilize a 7,500-square-foot lot for each home, it should be expected that the size of each home would be larger compared to the proposed project. If a larger lot is used, a larger home would likely be built. The homes would remain in the same TAZ. Therefore, a 35% reduction in VMT should not be expected. Alternative 2 could potentially meet the 23% reduction in VMT, but it is not guaranteed. Additionally, with larger homes, home affordability may be affected. Without the density bonus and fewer homes to sell, low-income housing may not be an option for the developer.

Conclusion: Alternative 2

Alternative 2 could potentially reduce VMT by the 23% threshold to avoid a significant impact. However, it cannot be guaranteed that it would reduce VMT past the threshold. The homes would remain in the same TAZ, with a higher VMT than the County Average. A percentage of homes reduced does not have a linear correlation with a percentage of VMT reduced. The homes that would not be built for this Project would need to be built in another location to meet demands. Additionally, the alternative will not support the goal of supplying housing to various income levels. While the exact costs of homes would be unreasonable to assume at this point, the developer would financially benefit from removing the low-income housing (if the density bonus was removed) before any of the more expensive homes.

D.4 Alternatives Considered but Eliminated from Further Consideration

This section describes and evaluates the alternatives that did not meet the CEQA criteria defined in Section D.1. The following list outlines the four types of alternatives that are addressed in this section, with an explanation as to why each alternative was eliminated.

- Alternative Sites
- Reduced Project Not Consistent with Current Zoning

D.4.1 Alternative Sites

No alternative offsite locations have been identified at this time. Even if the project applicant obtained site control of other nearby properties able to support the proposed project, there would be no significant reduction in the VMT impact of the project. The nearby TAZs are also over the threshold and would contribute to a significant impact. Development of the proposed project at a different location would not substantially alter the generated VMT as the project would remain in the Community of Armona or the greater Kings County. Therefore, an offsite alternative would not meet CEQA requirements for alternatives, as described in Section D.3, relative to reducing or avoiding significant impacts of the project. Further, although the applicant does have control over other properties in the Armona Community, each of these properties is being developed with other residential projects, and therefore the lands would not be available as an alternative location for the proposed project.

D.4.2 Reduced Project Not Consistent with Current Zoning

The project site is zoned R-1-6 (single-family residential, minimum lot size 6,000 square feet). To reduce the significant unavoidable VMT impacts associated with the project, it would require reducing VMT by at least 23% (refer to Section C.2, Transportation). The current zoning would allow up to a 35% reduction in homes, so rezoning does not need to be considered to reduce enough homes. For those reasons, such an alternative would not meet CEQA requirements for alternatives, as described in Section D.3, relative to reducing or avoiding significant impacts of the project and being potentially feasible from a regulatory standpoint.

D.5 Comparison of Alternatives

Section D.3 describes and evaluates the two alternatives to the proposed project. Table D-1 presents a comparison of the potentially significant impacts of the proposed project in comparison with the alternatives.
CEQA Guidelines Section 15126.6(d) requires the following for alternatives analysis and comparison:

> *The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. (CEQA Guidelines Section 15126.6[d])*

If the environmentally superior alternative is the No Project Alternative, CEQA requires the identification of an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6[e][2]). Based on the analysis provided in this EIR, the environmentally superior alternative is Alternative 2. However, neither alternative meets the project's goals and would be disadvantageous to Armona by preventing the development of needed low-income housing and the development of the overall housing stock.

Table D-1. Comparison of Alternatives			
Environmental Resource	*Impact Severity Compared to the Proposed Project*		
	Proposed Project	*Alternative 1: No Project*	*Alternative 2: Reduced Project Alternative*
Transportation (VMT)	Significant and Unavoidable	No VMT Impact	Reduced VMT but not certain to be not significant

County of Kings
1400 W. Lacey Blvd
Hanford, CA 93230

SECTION E
Other CEQA Considerations

Project Title: Tract 936 Summers Pointe

This section presents several topics required by CEQA, including environmental effects found not to be significant (E.1), growth-inducing effects (E.2), significant irreversible environmental changes (E.3), significant effects that cannot be avoided (E.4), and energy conservation (E.5).

E.1 Environmental Effects Found not to be Significant

Section 15128 of the CEQA Guidelines states that an EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and therefore, were not discussed in detail in the EIR. These are the environmental effects found not to be significant based on the site or project characteristics, as documented in the Initial Study (see Appendix B). The Initial Study includes the impacts that are not anticipated to occur, the issue area, and the justification. As discussed in the Initial Study, all impacts were found to be less than significant apart from transportation impacts related to vehicle miles traveled (discussed in Section C.2, Transportation).

E.2 Growth-Inducing Effects

Section 15126.2(e) of the State CEQA Guidelines provides the following guidance on growth-inducing impacts: a project is identified as growth-inducing if it "could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Potential growth-inducing components of the proposed project addressed in this section relate to temporary employment during construction and population growth from the new housing provided.

E.2.1 Employment and Population Growth

Temporary Construction Workforce: The proposed new buried utilities and new/extended roads would be built first. This work is expected to require up to 20 construction workers per workday. Once the infrastructure is complete, the homes will be built simultaneously. The construction is expected to take 17 months. The building construction is expected to require up to 39 workers per day.

All construction workers are expected to be hired from within the Community of Armona, City of Hanford, City of Lemoore, or throughout the County of Kings to the extent practicable. Some of the workers originating outside this local area may temporarily be relocated to accommodations within the Community of Armona for the duration of construction activities. Demand for temporary accommodations during construction is expected to be low and would be accommodated by existing lodging facilities in the region. There would not be permanent population growth from such temporary construction work and no expected indirect population growth from construction materials, restaurants,

convenience stores, and/or other services that would serve the workers during project construction, as existing facilities in the region would be adequate to accommodate the construction workforce.

Kings County has a construction labor force of 2096 (U.S. Census, 2020). The Community of Armona alone has a construction labor force of 58. Additionally, the City of Hanford has a construction labor force of 931, and the City of Lemoore has a construction labor force of 438. The maximum of 39 construction workers hired from the community would represent approximately 67 percent of the total construction labor force in Armona, although the construction workers are also expected to come from the surrounding areas. Including nearby Hanford and Lemoore, the 39 construction workers hired would represent approximately 4 percent of the total construction labor force. As a temporary component, the construction phase would not trigger additional population growth in the area.

Population Increase from New Housing: The proposed project includes constructing 109 new single-family homes. As provided in Table C.2-4 (Transportation), this is estimated to result in a population increase of 401 persons. Between 2010 and 2020, the population of Armona grew approximately 2.7 percent, from 4,156 to 4,274 (U.S. Census, 2020). The County of Kings population decreased by approximately 0.3 percent, from 152,982 to 152,486. The Kings County Association of Governments (KCAG) growth forecast predicts a steady increase in population through 2060. From 2020 to 2060, KCAG estimates that the County of Kings will grow over 40 percent to approximately 215,000. The 2035 Armona community plan is planning up to a population of 25,437, following a full buildout of the plan. The project contribution of 401 persons, should they all come from outside the Community of Armona and result in direct migration, would account for a nominal amount of the expected population growth of the Community. Furthermore, substantial population growth is forecasted and planned for the County of Kings and the Community of Armona through 2060. Therefore, the proposed project would not result in a substantial population increase outside of predicted growth and regional estimates within the County's General Plan. Implementation of the proposed project is therefore not considered growth-inducing, but instead, growth-accommodating.

E.3 Significant Irreversible Environmental Changes

Section 15126.2(d) of the State CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continued phases of the project. Irretrievable commitments of resources should be evaluated to ensure that such consumption is justified.

Construction of the proposed project would commit nonrenewable resources during construction. This includes fossil fuels, construction materials, new equipment that cannot be recycled at the end of each home's useful lifetime, and the energy required to produce materials. During project operation, oil, gas, and other nonrenewable resources would be consumed. Therefore, an irreversible commitment of insignificant amounts of nonrenewable resources would occur because of long-term project operation.

Construction and operation of the proposed project would require using a limited number of hazardous materials such as fuel, lubricants, and cleaning solvents. During construction, all hazardous materials would be stored, managed, and used in accordance with applicable federal, State, and local regulations. The applicant would be required to comply with all applicable regulations and building permit/code requirements during construction. County policies and the mitigation measures identified in Appendix B of this EIR would ensure the conservation of all natural resources to the maximum extent possible. The proposed project is not expected to result in environmental accidents that would cause irreversible damage.

Irreversible impacts can also result from permanent loss of agricultural land, or habitat, damage caused by environmental accidents associated with project construction, or operational resource use. However, as discussed in Appendix B (Initial Study), the proposed project would have less than a significant impact on biological habitats or communities.

E.4 Significant Effects that Can Not be Avoided

E.4.1 Significant Direct Effects of the Proposed Project

Section 15126.2(c) of the State CEQA Guidelines requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less than significant levels. The potential environmental effects of the proposed project and mitigation measures are discussed in detail in Section C of this EIR. As discussed in Section C.2 (Transportation), a significant and unavoidable vehicle mile traveled (VMT) impact would be associated with the proposed project. As discussed in Appendix B (Initial Study), all other project impacts would be mitigated to less than significant levels.

E.4.2 Significant Cumulative Effects

According to Section 15355 of the State CEQA Guidelines, the term "cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Individual effects that may contribute to a cumulative impact may be from a single project or several separate projects. Individually, the impacts of a project may be relatively minor, but when considered along with impacts of other closely related or nearby projects, including newly proposed projects, the effects could be cumulatively considerable.

This EIR has considered the potential cumulative effects of the proposed project in Section C. Impacts of the proposed project, when combined with impacts from past, present, and probable future projects would be considered cumulatively significant for the following issue areas:

Transportation

The proposed project would contribute to a cumulatively considerable impact to VMT when combined with impacts from past, present, and reasonable future projects. As discussed in Section C.2, the geographic extent of the cumulative transportation VMT analysis includes projects within and around the Community of Armona. Adding vehicle trips from cumulative projects in conjunction with proposed project trips would increase total VMT in the area. While an increase in population and housing would occur, the overall commute characteristics of the Community of Armona are not expected to change significantly compared to that described in Section C.2.1. However, because cumulative development would generate long-term total VMT increases in the Community of Armona and the County of Kings, the contribution of the project toward cumulatively increasing VMT over existing levels would be significant and unavoidable (Class I).

E.5 Energy Conservation

To assure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3)). According to Appendix F of the State CEQA Guidelines, the goal of conserving energy implies

the wise and efficient use of energy including: (1) decreasing overall per capita energy consumption; (2) decreasing reliance on fossil fuels such as coal, natural gas, and oil; and (3) increasing reliance on renewable energy sources.

While state building code standards contain mandatory energy efficiency requirements for new development, the Community and utility providers are also important resources to encourage and facilitate energy conservation and to help residents minimize energy-related expenses.

Southern California Edison (SCE) services Armona to deliver electricity to residents and businesses.
The average use being that of one kilowatt per house. SCE also offers Green Rate Options, which allow consumers to indirectly purchase up to 100% of their energy from renewable sources. To accomplish this, SCE purchases the renewable energy necessary to meet the needs of Green Rate participants from solar renewable developers.

SCE also provides energy conservation services from its Energy Savings Assistance Fund. The energy assistance fund helps those who qualify by income manage their electricity bills. This program primarily benefits low-income households, seniors, disabled, and non-English speaking residents. Another program, the Residential Multifamily Energy Efficiency Rebate Program, provides incentives for property owners to create energy-efficient improvements through lighting, HVAC, and insulation. SCE also offers several rebate programs, making energy-efficient kits available to residents at no cost.

No increases in inefficiencies or unnecessary energy consumption are expected to occur as a direct or indirect consequence of the proposed project.

SECTION F
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SECTION G
List of Preparers

List of Preparers

4-Creeks Inc.

- David Duda, AICP, GISP
- Matthew D. Ainley, PE, Principal in Charge
- Lisa Wallis-Dutra, PE, TE, PTOE, RSP, Sr. Traffic Engineer
- Molly Baumeister, Associate Planner

Persons and Agencies Consulted

The following individuals and agencies contributed to this Initial Study:

County of Kings

- Mitchel Cabrera, PE, Chief Engineer
- Chuck Kinney, CDA Director
- Victor Hernandez, Planner

Bedrock Engineering, Inc.

- Richard Shepard, PLS

Taylored Archaeology

- Consuelo Y. Sauls

Soar Environmental Consulting

- Travis Albert

Peters Engineering Group

- John Rowland, PE, TE

Appendix A

Notice of Preparation and Scoping Comment Letters

KINGS COUNTY
COMMUNITY DEVELOPMENT AGENCY

Chuck Kinney, Director

PLANNING DIVISION

Web Site: http://www.countyofkings.com/planning/index.html

NOTICE OF PREPARATION
OF A DRAFT ENVIRONMENTAL IMPACT REPORT

To: State Clearinghouse, Local, State, Federal Agencies and Interested Parties

From Lead Agency: Victor Hernandez, Planner
Kings County Community Development Agency
1400 West Lacey Boulevard, Building #6, Hanford, California 93230

Project Title: Tentative Tract No. 936 (Summers Pointe)

Subject: Notice of Preparation of a Draft Environmental Impact Report
The Kings County Community Development Agency will be the Lead Agency in the preparation of an Environmental Impact Report (EIR). An Initial Study has been prepared for this project which includes a description of the project, environmental setting, potential environmental impacts, and mitigation measures for any significant impacts (available for download at https://www.countyofkings.com/home/showdocument?id=29684). Your agency may need to use this EIR prepared by Kings County when considering permits or other approvals which your agency requires to issue permits related to this project. If your agency requires particular environmental information pertinent to your agency's statutory responsibilities included in the document, please submit that information to the Kings County Community Development Agency. The response of responsible and trustee agencies should be sent at the earliest possible date. Time limits mandated by State law require that **responses be sent no later than 30 days after receipt of this Notice (September 19, 2022 at 5:00 PM).** Responses should include a contact name at your agency and can be sent to:

Contact Person: Victor Hernandez, Planner

By Mail to: Kings County Community Development Agency
1400 West Lacey Boulevard, Building #6, Hanford, California 93230

By Email to: Victor.Hernandez@co.kings.ca.us

Project Description: The Kings County Community Development Agency has received an application for a land development permit that proposes to divide two parcels totaling approximately 20 acres into one hundred and nine (109) lots for development as single-family residences, as well as an outlot to be used as a storm water basin and a remainder parcel with an existing residence and pool.

Project Location: The project site is located approximately 0.5 miles southeast of the intersection of 14th Avenue and Lacey Blvd., Hanford, Assessor's Parcel Numbers 017-100-012 & 013.

Our office appreciates your time and assistance with this project review. If you have any questions regarding this matter, please contact me at Victor.Hernandez@co.kings.ca.us or (559) 852-2685.

KINGS COUNTY COMMUNITY DEVELOPMENT AGENCY
/s/Chuck Kinney
Chuck Kinney, Director

Publish: August 19, 2022

Armona Community Services District

Physical Address: 10114 14th Avenue, Hanford, CA 93230
Mailing Address: P.O. Box 486, Armona, CA 93202
Phone: (559) 584-4542 ---Fax: (559) 584-7396
Website: http://www.armonacsd.org --- Email: armonacsd@gmail.com

September 16, 2022

Victor Hernandez
Kings County Planning Agency
Kings County Government Center
1400 W. Lacey Boulevard
Hanford, CA 93230

Subject: ***Notice of Preparation of Draft Environmental Impact Report***
Tentative Tract No. 936

Dear Mr. Hernandez:

Thank you for the opportunity to review the Notice of Preparation and Initial Study for Tentative Tract No. 936. Below are comments from Armona Community Services District (District).

1. Armona Community Services District does not establish, own, operate, or maintain any storm water facilities as stated on pages 61 and 63 of the initial study. Kings County establishes, owns, operates, and maintains all storm water facilities in the community of Armona.

2. The information about Armona Community Services District's existing water system on pages 65 and 101 is outdated. Water supply in Armona is provided by the District's one active groundwater well (Well 3) which has the pumping capacity of 1,000 GPM. The District has two additional wells (Wells 1 and 2) that serve as emergency backup only. The existing water system includes treatment, storage, and booster pumping capabilities. The current population uses approximately 140.351 million gallons of water per year.

3. Armona Community Services District does not have the authority or ability to operate or maintain parks. On page 87, the initial study states that "the project would contribute its fair share to parks facilities in-lieu fees" and "the developer and ACSD shall negotiate a fee, if in-lieu fees will be paid". The District is unable to negotiate or accept any in-lieu fees from the developer for parks because it does not have the authority or ability to operate or maintain parks.

4. All conditions of approval in the attached letter dated November 17, 2021 remain valid and shall be satisfied.

If you have any questions, please contact me at (559) 449-2700.

Sincerely,

Jeffrey S. Dorn, P.E.
District Engineer

cc:

Armona Community Services District
ACSD File: 6162.00

Armona Community Services District

Physical Address: 10114 14th Avenue, Hanford, CA 93230
Mailing Address: P.O. Box 486, Armona, CA 93202
Phone: (559) 584-4542 ---Fax: (559) 584-7396
Website: http://www.armonacsd.org --- Email: armonacsd@gmail.com

November 17, 2021

Mr. Victor Hernandez
Kings County Planning Agency
Kings County Government Center
1400 W. Lacey Boulevard
Hanford, CA 93230

Subject: ***Tentative Tract No. 936 (Summers Pointe)***
(APN 017-100-012 & 013)

Dear Mr. Hernandez:

Thank you for the opportunity to review the application for the land development permit that proposes to divide two parcels totaling approximately 20 acres into one-hundred nine (109) lots, as well as an outlot to be used as a storm water basin and a remainder parcel with an existing residence and pool. The project site is located approximately 0.5 miles southwest of the intersection of 14th Avenue and Lacey Boulevard (APN 017-100-012 & 013).

Comments from Armona Community Services District ("District") regarding conditions of approval for the subdivision are as follows:

1. A copy of Armona Community Services District Standard Specifications is available for purchase at the District office for information associated with development requirements within the District.

2. It is our understanding that the applicant would like to connect to the District's water and sewer systems. **The applicant shall submit a written request for a will-serve letter for the project, which will be added to the agenda for the next meeting of the Board of Directors.** Issuance of a will serve letter for this project is contingent upon approval by the Armona Community Services District Board of Directors.

3. The applicant will be required to pay water and sewer connection fees for each service connection and any other applicable District fees in accordance with the rates in effect at the time of payment. These fees are due within 120 calendar days of the issuance of a will serve letter from the District.

4. The proposed parcels are not located within the current District boundary. The proposed parcels shall be annexed into the District prior to receiving service. The applicant shall reimburse the District for all costs associated with annexation and assist with preparation of the application to Kings County LAFCO.

5. District policy requires water and sewer facilities to be constructed along the entire frontage of properties requesting new service connections. The applicant is responsible for constructing improvements to the Districts' water distribution and sewer collection system, in accordance with District standards and requirements, as described below:

    a. Installation of water and sewer mains along the frontage of all properties to be served.

    b. Installation of water services and meters and sewer services for all new connections to the Districts' water and sewer systems. Each property will require a separate service connection. Water meters shall be purchased from the District.

6. The applicant shall dedicate property (lots 28 and 29) in fee to the District for the placement of a new well. The well will be constructed by the District.

7. Any existing onsite wells, storage tanks, and or septic systems for properties receiving service shall be abandoned and destroyed in accordance with state and local requirements.

8. A water and sewer improvement plan, prepared by a registered civil engineer, shall be submitted to the District for review and approval. The improvement plans shall identify existing and proposed water and sewer facilities and include the attached District standard notes and drawings. **The improvement plans shall be reviewed and approved by the District prior to the start of construction.**

9. The applicant shall comply with all requirements set forth by the Kings County Fire Department. The location of required fire hydrants shall be coordinated with the District and the Fire Department.

10. Armona Community Services District facilities shall be protected and accessible at all times.

11. Storm water shall not be discharged to the sanitary sewer system.

12. The District shall review and approve the applicant's final improvement plans for compliance with these conditions and conformance with District Standards prior to construction. The applicant is responsible for District costs associated with engineering review of the improvement plans pursuant to District Standards.

13. Water and sewer improvements in the street right-of-way and easements are subject to inspection and acceptance by the District's inspector. The applicant is responsible for District costs associated with construction review of water and sewer facilities pursuant to the District Standard Specifications.

If you have any questions, please contact me at (559) 449-2700.

Sincerely,

Jeffrey S. Dorn, P.E.
District Engineer

cc: Armona Community Services District
ACSD File: 6162.00

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

August 24, 2022

Victor Hernandez
County of Kings Community Development Agency
1600 W. Lacey Blvd., Building #6
Hanford, CA 93230

Re: 2022080449, Tentative Tract No. 936 Project, Kings County

Dear Ms. Hernandez:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Cameron.Vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

cc: State Clearinghouse

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Meredith Williams, Ph.D.
Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

September 14, 2022

Mr. Victor Hernandez
County of Kings
Community Development Department
1600 W. Lacey Blvd., Building #6
Hanford, CA 93230
Victor.Hernandez@co.kings.ca.us

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR TENTATIVE TRACT NO. 936 – DATED AUGUST 19, 2022
(STATE CLEARINGHOUSE NUMBER: 2022080449)

Dear Mr. Hernandez:

The Department of Toxic Substances Control (DTSC) received a Notice of Preparation of a Draft Environmental Impact Report (EIR) for the Tentative Tract No. 936 (Summers Pointe) project (Project). The Lead Agency is receiving this notice from DTSC because the Project includes one or more of the following: groundbreaking activities, work in close proximity to a roadway, work in close proximity to mining or suspected mining or former mining activities, presence of site buildings that may require demolition or modifications, importation of backfill soil, and/or work on or in close proximity to an agricultural or former agricultural site.

DTSC recommends that the following issues be evaluated in the Hazards and Hazardous Materials section of the EIR:

1. A State of California environmental regulatory agency such as DTSC or Regional Water Quality Control Board (RWQCB), or a qualified local agency that meets the requirements of Assembly Bill 304 (AB304) should provide regulatory concurrence that the site is safe for construction and the proposed use.
2. The EIR should acknowledge the potential for historic or future activities on or near the project site to result in the release of hazardous wastes/substances on

the project site. In instances in which releases have occurred or may occur, further studies should be carried out to delineate the nature and extent of the contamination, and the potential threat to public health and/or the environment should be evaluated. The EIR should also identify the mechanism(s) to initiate any required investigation and/or remediation and the government agency who will be responsible for providing appropriate regulatory oversight.

3. If any projects initiated as part of the proposed project require the importation of soil to backfill any excavated areas, proper sampling should be conducted to ensure that the imported soil is free of contamination. DTSC recommends the imported materials be characterized according to *DTSC's 2001 Information Advisory Clean Imported Fill Material*.

4. If any sites included as part of the proposed project have been used for agricultural, weed abatement or related activities, proper investigation for organochlorinated pesticides should be discussed in the EIR. DTSC recommends the current and former agricultural lands be evaluated in accordance with DTSC's 2008 *Interim Guidance for Sampling Agricultural Properties (Third Revision)*.

DTSC appreciates the opportunity to comment on the EIR. Should you choose DTSC to provide oversight for any environmental investigations, please visit DTSC's Site Mitigation and Restoration Program page to apply for lead agency oversight. Additional information regarding voluntary agreements with DTSC can be found at DTSC's Brownfield website.

If you have any questions, please contact me at (916) 255-3710 or via email at Gavin.McCreary@dtsc.ca.gov.

Sincerely,

Gavin McCreary
Project Manager
Site Evaluation and Remediation Unit
Site Mitigation and Restoration Program
Department of Toxic Substances Control

cc: (via email)

Governor's Office of Planning and Research
State Clearinghouse
State.Clearinghouse@opr.ca.gov

Mr. Dave Kereazis
Office of Planning & Environmental Analysis
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov

Hernandez, Victor

From: Xiong, Christopher@DOT <Christopher.Xiong@dot.ca.gov>
Sent: Friday, September 16, 2022 4:38 PM
To: Hernandez, Victor
Cc: Padilla, Dave@DOT
Subject: RE: Request for comments; TT-936 NOP

Hi Victor,

Thank you for the opportunity to review the NOP and IS for a DEIR for Tentative Tract No. 936, we have no comments in regard to the NOP and IS.

I do want to note that if a Traffic Study is found to be required for this project to please include Caltrans in the Scope of Work prior to initiating the study.

Best regards,

Christopher Xiong
Associate Transportation Planner
Caltrans District 6
1352 W. Olive Avenue
Fresno, CA 93778
Christopher.Xiong@dot.ca.gov
(559) 908-7064

Hernandez, Victor

From: Stransky, Liliana
Sent: Thursday, August 25, 2022 3:15 PM
To: Hernandez, Victor
Subject: TT 936 (Summer Pointe)

Hi Victor,

Our division does not have any comments for the proposed Sumemr Pointe project – TT- 936. Please let me know if you have any questions.

Thank you,
Liliana

Liliana Stransky, MPA, REHS
Environmental Health Officer
Kings County Department of Public Health
330 Campus Drive | Hanford, CA | 93230
Phone: (559)852-2628 | Fax: (559)584-6040
www.countyofkings.com/ehs

Appendix B

Initial Study Checklist

County of Kings
1400 W. Lacey Blvd
Hanford, CA 93230

Initial Study

Project Title: Tract 936 Summers Pointe

This document is the Initial Study for the proposed subdivision and development of approximately 20.08 gross acres into 109 single family residential lots in the County of Kings, within the Armona Community Plan. The County of Kings will act as Lead Agency for this project pursuant to the California Environmental Quality Act (CEQA) and the CEQA Guidelines.

1.1 PURPOSE

The purpose of this environmental document is to implement the California Environmental Quality Act (CEQA). Section 15002(a) of the CEQA Guidelines describes the basic purposes of CEQA as follows.

(1) Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
(2) Identify the ways that environmental damage can be avoided or significantly reduced.
(3) Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
(4) Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

This Initial Study of environmental impacts has been prepared to conform to the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). According to Section 15070, a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

(a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or
(b) The initial study identifies potentially significant effects, but:
  (1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and
  (2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

1.2 INITIAL STUDY

1. **Project Title:** Tract 936 Summers Pointe

2. **Lead Agency:** County of Kings Community Development Agency
   1400 W. Lacey Blvd., Building #6
   Hanford, CA 93230
   Telephone: 559-852-2670
   Fax: 559-584-8989

3. **Applicant:** Hollyhills Group
   Contact Person: Dan Bailey
   17 Mayfair Drive
   Rancho Mirage, CA 92270
   (760) 835-9448

4. **Project Location:** The proposed project site is located within the County of Kings within the Armona Community Plan, South of W. Lacy Boulevard, North of Front Street, and East of 14th Avenue. The site is approximately 0.3 miles Northeast of the Armona downtown, and approximately 3 miles West of the Hanford downtown. The Project involves the subdivision and development of 109 single family residences on approximately 20.08 acres within Parcels 017-100-012 and 017-100-013. The site is topographically flat and is bounded by agricultural uses to the North, East, and West and single-family residential development to the South. The site is zoned R-1-6 Single-Family Residential by the Kings County Development Code and is designated as Medium Density Residential by the Armona Community Plan. The site currently contains one single-family residence surrounded by agricultural uses.

5. **General Plan Designation:** The proposed project site is designated as Medium Density Residential by the Armona Community Plan.

6. **Zoning Designation:** The site is zoned R-1-6 Single-Family Residential by the Kings County Development Code.

7. **Project Description:** The Project proposes a 109-unit, single family development on 20.08 gross acres in the County of Kings, within the community of Armona. The Project site's existing and proposed zoning is R-1-6 Single-Family Residential. The project includes 109 single family homes, with an average lot size of 5,094 square feet, as well as an existing home on approximately one acre. The Project also proposes a 1.7-acre onsite drainage basin. The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities, new residential streets, and the continuation and improvement of Crocus Way. The Project would require no demolition as the site is currently on agriculture land.

8. **Surrounding Land Uses and Settings:**
   North Agriculture (Armona Community Plan)
   South Residential – Single Family (Armona Community Plan)
   East Agriculture (Armona Community Plan)

West Agriculture, Designated for Medium High Density Residential (Armona Community Plan)

9. **Required Approvals:** The following discretionary approvals are required from the County of Kings for the proposed project:

   - County of Kings Building and Encroachment Permits
   - County of Kings Density Bonus
   - San Joaquin Valley Air Pollution Control District (SJVAPCD). The proposed project is within the jurisdiction of the SJVAPCD and will be required to comply with Rule VIII, 3135, 4101, and 9510.
   - Central Valley Regional Water Quality Control Board, SWPPP. The proposed project site is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB will require a Storm Water Pollution Prevention Plan (SWPPP) to prevent impacts related to stormwater as a result of project construction.
   - Will Serve Letter from the Armona Community Service District.

10. **Native American Consultation:** The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a)(1-2)). According to the most recent census data, California is home to 109 currently recognized Native American tribes. Tribes in California currently have nearly 100 separate reservations or Rancherias. Kings County contains the Santa Rosa Rancheria home to the Santa Rosa Rancheria Tachi Yokut Tribe. The Santa Rosa Rancheria is approximately 5.5 miles south of the Community of Armona.

    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 PRC Section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

11. **Parking and access:** Vehicular access to the project is available via Crocus Way, with plans for future road connections. The project includes three new streets and a court that provide full access to the project site. During construction, workers will utilize existing parking areas and/or temporary construction staging areas for parking of vehicles and equipment.

12. **Landscaping and Design:** The landscape and design plans will be required during building permit submittal and will be subject to the "California Model Water Efficient Landscape Ordinance". All

landscaping and design components will comply with Article 5, Section 508.B of the Kings County Development Code for the R-1-6 Single-Family Residential Zone District.

13. **Utilities and Electrical Services:** The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities. Water and sewer services will be requested from the Armona Community Services District (ACSD). Electricity will be requested from Southern California Edison (SCE), with opportunities for the consumers to receive electricity from renewable sources. Natural gas will be requested from Southern California Gas (SoCalGas).

Acronyms

ACSD	Armona Community Services District
BMP	Best Management Practices
BAU	Business as Usual
CAA	Clean Air Act
CCR	California Code of Regulation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CWA	California Water Act
DHS	Department of Health Services
FEIR	Final Environmental Impact Report
ISMND	Initial Study Mitigated Negative Declaration
KCGMP	Kings County Groundwater Management Plan
KWRA	Kings Waste and Recycling Authority Maximum
MCL	Contaminant Level
PEIR	Programmatic Environmental Impact Report
NOI	Notice of Intent
ND	Negative Declaration
NAC	Noise Abatement Criteria
RCRA	Resource Conservation and Recovery Act of
ROW	1976 Right-of-Way
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SHPO	State Historic Preservation Office
SJVAPCD	San Joaquin Valley Air Pollution Control District
SWPPP	Storm Water Pollution Prevention Plan

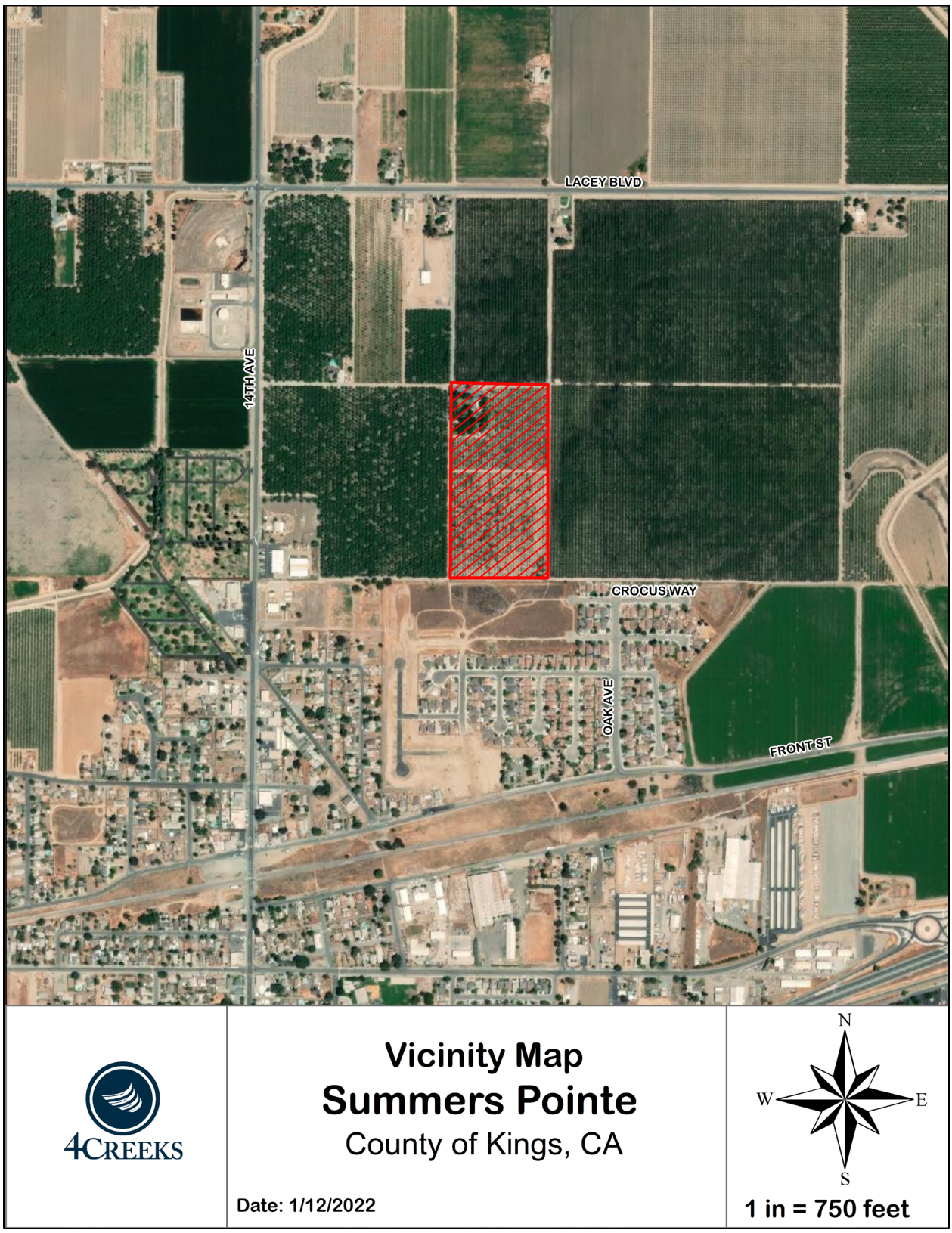


Figure 1-1. Vicinity Map

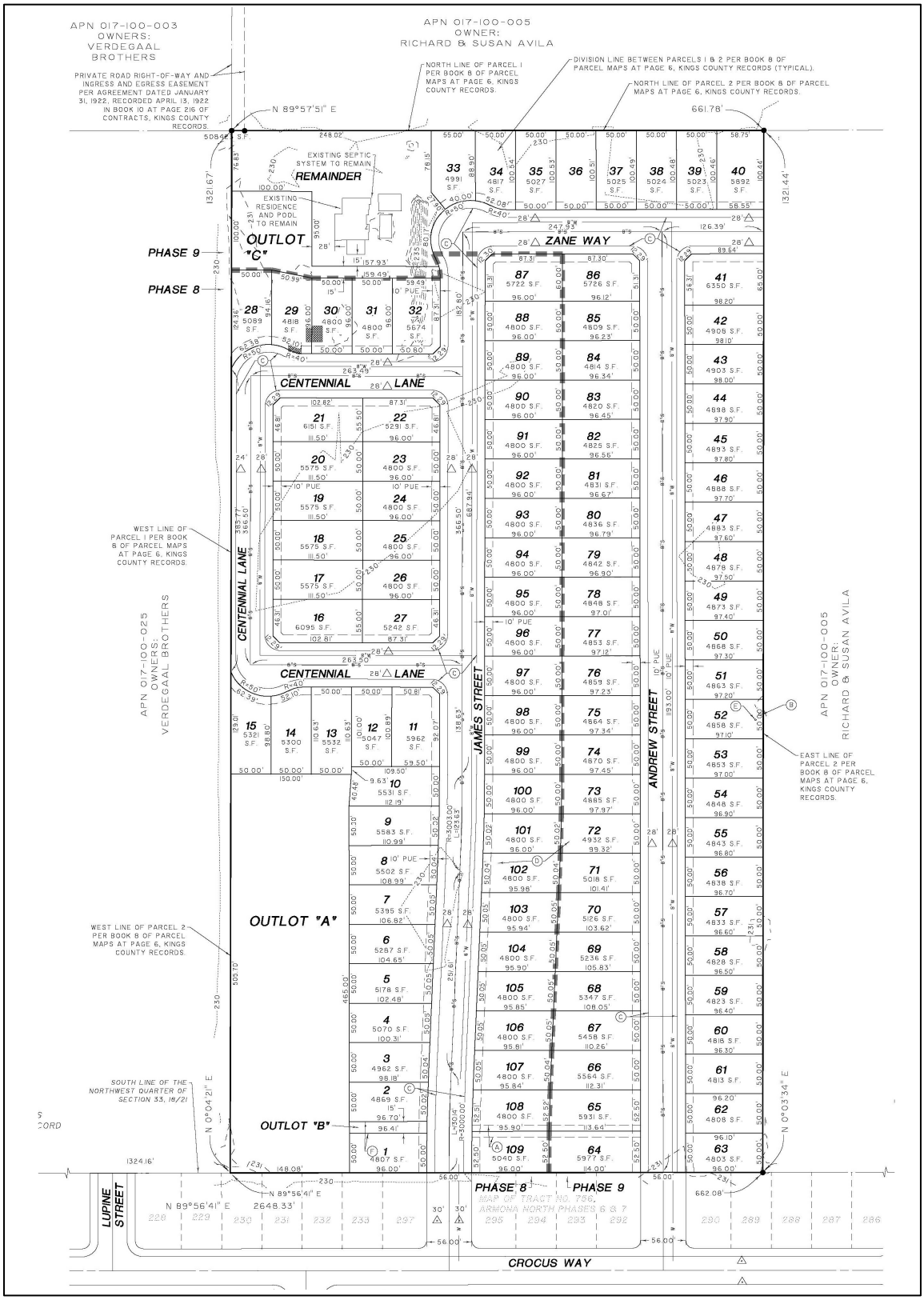


Figure 1-2: Site Plan

1.3 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites, in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must 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.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must 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 if required.

4. "Negative Declaration: Less Than Significant With Mitigation 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 "Earlier Analyses," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be 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 should identify the following.

    - Earlier Analysis Used. Identify and state where they are available for review.
    - Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    - Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated." Describe and mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

1.4 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	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture and Forest Resources	☐ Hazards & Hazardous Materials	☑ Recreation
☐ Air Quality	☑ Hydrology and Water Quality	☑ Transportation
☐ Biological Resources	☐ Land Use and Planning	☑ Tribal Cultural Resources
☑ Cultural Resources	☐ Mineral Resources	☐ Utilities and Service System
☐ Energy	☐ Noise	☐ Wildfire
☑ Geology and soils	☐ Population	☑ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency) Where potential impacts are anticipated to be significant, mitigation measures will be required, so that impacts may be avoided or reduced to insignificant levels.

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. A Negative Declaration 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 (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) 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 requested.

SIGNATURE	3/8/23 DATE
Victor Hernandez PRINTED NAME	County of Kings AGENCY

1.5 ENVIRONMENTAL ANALYSIS

The following section provides an evaluation of the impact categories and questions contained in the checklist and identify mitigation measures, if applicable.

I. AESTHETICS

Except as provided in Public Resource Code Section 210999, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	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 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 a publicly accessible vantage point). 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?	☐	☑	☐	☐

Environmental Setting

Scenic Resources: Scenic resources include landscapes and features that are visually or aesthetically pleasing. They contribute positively to a distinct community or region. These resources produce a visual benefit upon communities. The 2035 Kings County General Plan PEIR states that the visual character within the unincorporated County of Kings is characterized by a mix of rural and built environments. This is characterized by uses such as grazing, open space, and cultivated agriculture. Additional scenic resources within the County include rivers, hills, and other open spaces, as well as manmade features including urban and rural communities and parks. Kings County's most prominent natural feature is the Kings River, which forms part of the County's northern border. Other local scenic resources include the Coast Ranges, with the unique formations of the Chalk Buttes-Reef Ridge portion of the Kreyenhagen Hills; the
Pyramid Hills; Cottonwood Pass; Sunflower Valley; and Cross Creek. The communities in the county maintain small rural town atmospheres.

Scenic Vistas: The 2035 Kings County General Plan identifies the following as scenic vistas: the Coast Ranges to the Southwest, with formations of the Chalk Buttes-Reef Ridge portion of the Kreyenhagen Hills, the Pyramid Hills, Cottonwood Pass, and Sunflower Valley. Other scenic resources include the various

ridgelines located west of the County in adjacent Fresno County, which are visible along State Route 41 from the northern county line to Kettleman City.

Existing Visual Character: The following photos demonstrate the aesthetic character of the project area. As shown, the proposed project site area is in a relatively flat area characterized by agricultural uses.

Photo 1: North Site Boundary (View North) Source: Google Maps 2021

Photo 2: West Site Boundary (View West) Source: Google Maps 2021

Photo 3: East Site Boundary (View East) Source: Google Maps 2021

Photo 4: Southeast Site Boundary (View Southwest) Source: Google Maps 2012

Regulatory Setting

Scenic Roadways: The California Scenic Highway Program was established in 1963 by the state Legislature for the purpose of protecting and enhancing the natural beauty of California highways and adjacent corridors through conservation strategies. The State Scenic Highway System includes a list of highways that have either been officially designated or are eligible for designation. State laws affiliated with governing the scenic highway program can be found in Sections 260-263 in The Street and Highways Code.

State Scenic Highways: According to the California Department of Transportation mapping of State Scenic Highways, the County of Kings does not have any officially designated State Scenic Highways, however, the County has one eligible State Scenic Highway, a portion of State Route 41, from State Route 33 to the Kern County line. This is designated as a scenic corridor in the County's General Plan This portion of the highway is approximately 35 miles away from the proposed site.

Historic Sites: Armona has designated key historical site locations that shall be preserved. These include the Armona Depot, Armona's China town, and the Grangeville Cemetery. The nearest historic site to the project site is the Grangeville Cemetery, approximately .25 miles away.

2035 Kings County General Plan: The 2035 Kings County General Plan includes the following goals, objectives and policies, which would address potential impacts associated with aesthetic resources that relate to the proposed project:

Open Space (OS) Goal B1: Maintain and protect the scenic beauty of Kings County.

- OS Objective B1.1: Protect and enhance views from roadways which cross scenic areas or serve as scenic entranceways to cities and communities.
- OS Objective B1.3: Protect the scenic qualities of human-made and natural landscapes and prominent view sheds.
    - OS Policy B1.3.1. Policy: Require new development to be designed so that it does not significantly impact or block views of Kings County's natural landscape or other important scenic features. Discretionary permit applications will be evaluated against this requirement as part of the development review process. New developments may be required, as appropriate to:
        - Minimize obstruction of views from public lands and rights-of way.

- Reduce visual prominence by keeping development and structures below ridge lines.
- Limit the impact of new roadways and grading on natural settings. Such limits shall be within design safety guidelines.

OS Goal C1: Preserve the visual identities of Community Districts by maintaining open space separations between urban areas.

- OS Objective C1.1: Preserve open space, maintain rural character, and limit development in community separator areas.
    - OS Policy C1.1.1: Preserve the agricultural open space buffer between the Community of Armona and City of Hanford to maintain community separation between Lacey Boulevard and Front Street along the west side of 13th Avenue.

Armona Community Plan (ACP): The Armona Community Plan contains the following goals, objectives and policies, which would reduce potential impacts to the visual character of the community that relate to the proposed project:

ACP Goal 2A: New residential growth reinforces Armona's vision to remain a compact small-town community while also building sustainable quality neighborhoods that meet the needs of the Community's diverse population.

- ACP Policy 4A.1.4: Preserve historical landmarks and require new development to integrate these Community valued features into the overall design of the development.
- ACP Policy 8A.1.2: Encourage infill development and compact growth for the North Expansion Area that is planned for residential and commercial development.

Kings County Development Code: The Kings County Development Code establishes specific development criteria for each zoning district (i.e. lighting, parking requirements, walls, fencing, setbacks, building height, etc.) In relation to lighting, Section 508.F of the Kings County Development Code states that exterior lighting should be designed to be compatible with the architectural and landscape design of the project and identifies the following exterior lighting requirements for residential zones:

- All new proposed uses shall preserve the existing nighttime environment by limiting the illumination of areas surrounding new development.
- An appropriate hierarchy of lighting fixtures/structures and intensity should be considered when designing the lighting for the various elements of a project (i.e., building and site entrances, walkways, parking areas, or other areas of the site).

Discussion

a) Would the project have a substantial adverse effect on a scenic vista?

No Impact: A scenic vista is defined as a viewpoint that provides expansive views of highly valued landscape for the benefit of the general public. The Open Space Element of the 2035 Kings County General Plan identifies the Kings River and the Coast Mountain ranges as primary scenic vistas within this region. The Kings River is approximately 6 miles North of the proposed project site and the Coast Mountain range are approximately 40 miles West of the project site. The Kings River and the Coast Mountain ranges are not visible from the proposed project site due to far distances

and the urban development between the project site and these features. Therefore, there is *no impact.*

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within state scenic highway?

No Impact: There are no officially designated State Scenic Highways located in Kings County. The proposed project would not damage any scenic resources within a state scenic highway and there is *no impact.*

c) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

No Impact: The proposed project site is in an urbanized area within the County of Kings. The materials, signage, fencing, landscaping, and building materials used in the construction of the project will be selected based on their ability to improve the overall visual character of the area. The proposed project will comply with all applicable zoning and other regulations outlined in the 2035 Kings County General Plan and the Kings County Development Code. There is *no impact.*

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant Impact with Mitigation Incorporation: The proposed project would result in new lighting sources on the project site consistent with adjacent residential development. New lighting sources would include interior lighting from residences, street lighting, and security lighting. All street and landscape lighting will be consistent with the Kings County Development Code lighting standards, which are developed to minimize impacts related to excessive light and glare. The project will comply with the Kings County General Plan PEIR mitigation measure AES-1. Although the project will introduce new light sources to the area, all lighting will be consistent with adjacent residential land uses and the City's lighting standards. The impacts are *less than significant with mitigation incorporation.*

Mitigation Measures for Impacts to Aesthetic Resources Incorporated from PEIR

Mitigation Measure AES-1: Preserve the existing nighttime environment by limiting the illumination of areas surrounding new development. New lighting that is part of residential, commercial, industrial, or recreational development shall be oriented away from sensitive uses, and should be hooded, shielded, and located to direct light pools downward and prevent glare.

II. AGRICULTURE AND FOREST RESOURCES:

In determining whether impacts to agricultural resources are significant environmental effects, 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. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	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 non-agricultural use?	☐	☐	☑	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned timberland Production (as defined by Government Code section 51104(g)?	☐	☐	☐	☑
d) Result in the loss of forestland or conversion of forest land to non-forest use?	☐	☐	☐	☑
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☑	☐

Environmental Setting

Central California is one of the world's premier growing regions. Agriculture is an important economic resource for Kings County. The Kings County General Plan states that there are over 1,100 farms in Kings County, occupying 76% of the County's total acreage. These farms produce milk, cotton, cattle & calves, alfalfa, pistachios, tomatoes, corn silage, almonds, walnuts, and peaches.

The proposed project site is located within the Armona Sphere of Influence. The proposed project site is not under Williamson Act Contract or a Farmland Security Zone contract. The proposed site is designated as Prime Farmland by the California Farmland Mapping and Monitoring Program (FMMP) published by the California Department of Conservation. Nearby to the North, East, and West the land surrounding the project site is currently designated Prime Farmland. To the South, land is currently designated Grazing Land and Urban Land.

Regulatory Setting

California Land Conservation Act of 1965: The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, allows local governments to enter into contracts with private landowners to restrict the activities on specific parcels of land to agricultural or open space uses. The landowners benefit from the contract by receiving greatly reduced property tax assessments. The California Land Conservation Act is overseen by the California Department of Conservation; however local governments are responsible for determining specific allowed uses and enforcing the contract.

Kings County Right to Farm Ordinance: The County adopted a "Right to Farm Ordinance" in 1996, to protect the rights of commercial farming operations, while promoting a "good neighbor policy" between these uses. Under this ordinance, property owners and residents are made aware that they may experience inconveniences due to commercial agricultural operations.

California Farmland Mapping and Monitoring Program (FMMP): The FMMP is implemented by the California Department of Conservation (DOC) to conserve and protect agricultural lands within the State. Land is included in this program based on soil type, annual crop yields, and other factors that influence the quality of farmland. The FMMP mapping categories for the most important statewide farmland are as follows:

- ***Prime Farmland*** has the ideal physical and chemical composition for crop production. It has been used for irrigated production in the four years prior to classification and can produce sustained yields. 16% of Kings County is classified as Prime Farmland.
- ***Farmland of Statewide Importance*** has also been used for irrigated production in the four years prior to classification and is only slightly poorer quality than Prime Farmland. 47% of Kings County is classified as Farmland of Statewide Importance.
- ***Unique Farmland*** has been cropped in the four years prior to classification and does not meet the criteria for Prime Farmland or Farmland of Statewide Importance but has produced specific crops with high economic value.
- ***Farmland of Local Importance*** encompasses farmland that does not meet the criteria for the previous three categories. These may lack irrigation, produce major crops, be zoned as agricultural, and/or support dairy.

- ***Grazing Land*** has vegetation that is suitable for grazing livestock. 27% of Kings County is classified as Grazing Land.

2035 Kings County General Plan: The 2035 Kings County General Plan includes the following objectives and policies that are related to agricultural resources.

Resource Conservation (RC) Objective B1.1: Identify the County's highest priority agricultural lands that are critical to the County's agricultural economy, prime soils, and water availability, and emphasize higher preservation efforts for these areas.

- RC Policy B1.1.1: Maintain the County's Priority Agricultural Land Model to serve as an information resource in evaluating urban growth and impacts related to the County's agricultural economy and redirect that growth where possible to the lowest priority agricultural land.
- RC Policy B1.1.2: Use the Priority Agricultural Model as a reference for determining potential economic and resource impacts related to the loss of agricultural land resulting from conversion to urban uses.

Armona Community Plan: The Armona Community Plan contains the following policies to limit impacts to agricultural resources:

- ACP Policy 2A.2.3: Residential growth should avoid development of prime agricultural lands outside the Armona Community Services District Primary Sphere of Influence, and those protected under "Williamson" Act or Farmland Security Zone Contract.
- ACP Policy 3A.1.3: The County shall implement agricultural mitigation measures to minimize the loss of prime agricultural land that also serve as agricultural buffers separating communities and cities.

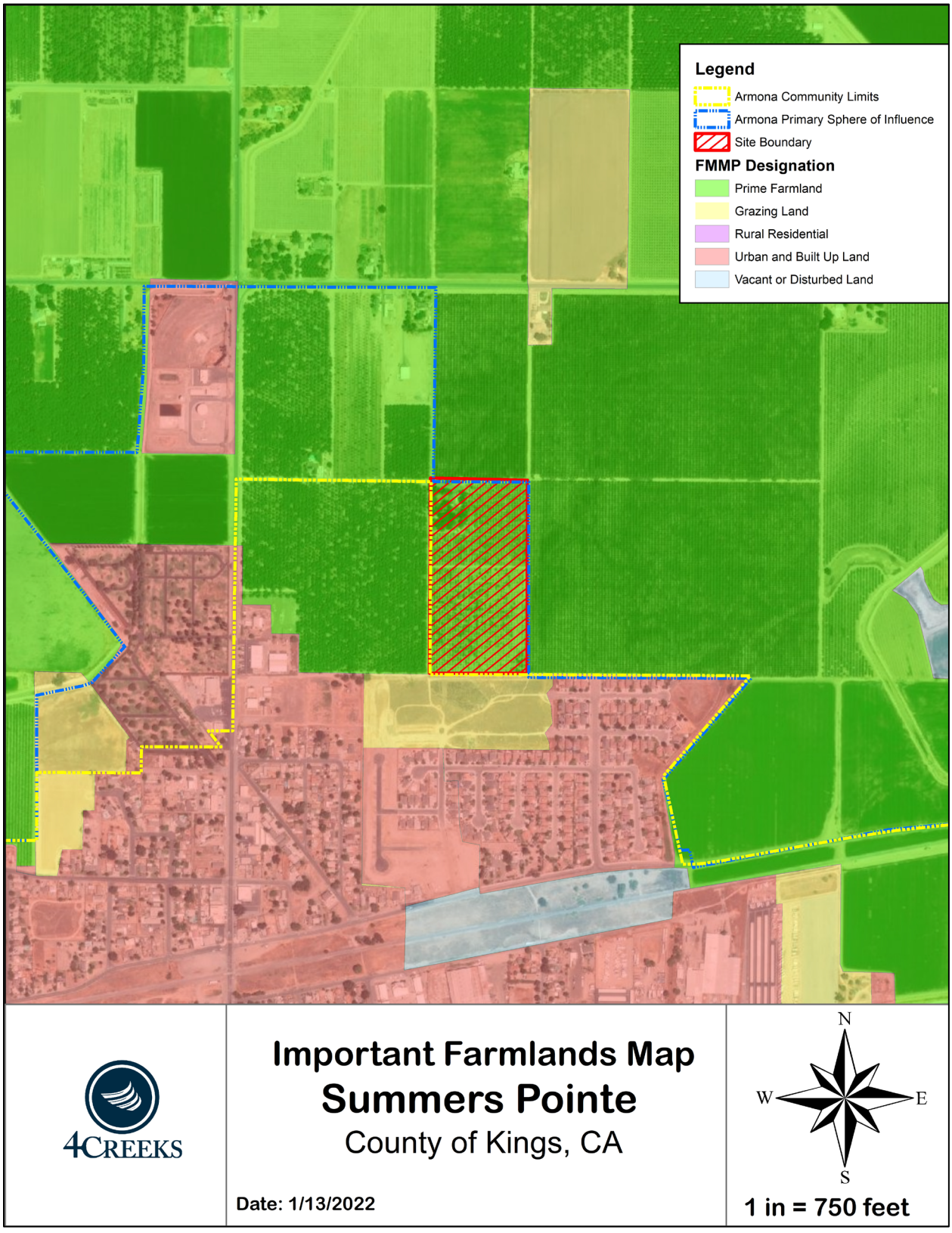


Figure 1-3: Important Farmlands Map

Discussion

a) Would the project 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 non-agricultural use?

Less Than Significant Impact: The project site is currently occupied by a Single-Family Home surrounded by cherry trees. Implementation of the proposed Project would result in the permanent conversion of approximately 20 acres of Prime Farmland to non-agricultural uses.

The loss of Prime Farmland on the Project site would result in the decrease of Important Farmland inventory in Kings County. Kings County had an Important Farmland inventory of 594,484 acres, 139,212 acres of which were categorized as Prime Farmland. Implementation of the Project would convert 20 acres of Prime Farmland, which would result in a .003 percent decrease in the Important Farmland inventory of Kings County and a .014 percent decrease in the County's Prime Farmland inventory.

As shown in Table 1-1, the 2035 Kings County General Plan plans to develop on 1,538 acres of Important Farmland, of which 749 acres are Prime Farmland. Most of the growth is planned to be adjacent to urbanized areas, which is much less disruptive to other agricultural uses countywide because it discourages the development of new rural neighborhoods or communities that would require the extension of infrastructure that would create growth-inducing impacts and potentially greater impacts to agricultural resources.

FMMP Designation	Countywide Total (acres)	Developable Land Under 2035 General Plan (acres)
Prime Farmland	139,212	749
Farmland of Statewide Importance	420,422	741
Unique Farmland	25,982	23
Farmland of Local Importance	8,868	25
Total	**594,484**	**1,538**

Table 1-1: Important Farmland Developed Under 2035 General Plan. Source: Kings County General Plan EIR

Although the proposed site is located on Prime Farmland, the development is in accordance with the 2035 Kings County General Plan. The project will follow all existing and proposed 2035 Kings County General Plan policies to reduce potential impacts. Therefore, there is a *less than significant impact.*

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act Contract?

No Impact: The Kings County Development Code designates the project site as zoned R-1-6 Single Family Residential and is not zoned for agricultural use. Additionally, the project site is not under a Williamson Act Contract. There is *no impact.*

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned timberland Production (as defined by Government Code section 51104(g)?

No Impact: The project site is not zoned for forest or timberland production. Therefore, *no impacts* would occur.

d) Would the project result in the loss of forestland or conversion of forest land to non-forest use?

No Impact: No conversion of forestland, as defined under Public Resource Code or General Code, will occur as a result of the project and thus, there would be *no impacts*.

e) Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?

Less Than Significant Impact: As discussed above, new development including the project site would be focused in and around existing communities. This would help prevent new infrastructure from interfering with surrounding farmland. The project does not include any features which could result in the conversion of forestland to non-forest use. There is a *less than significant impact.*

III. 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 With Mitigation Incorporation	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 non-attainment 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?	☐	☐	☑	☐

Environmental Setting

Air pollution is directly related to regional topography. Topographic features can either stimulate the movement of air or restrict air movement. California is divided into regional air basins based on topographic air drainage features. The proposed project site is within the San Joaquin Valley Air Basin, which is bordered by the Sierra Nevada Mountains to the east, Coastal Ranges to the west, and the Tehachapi Mountains to the south.

The mountain ranges surrounding the San Joaquin Valley Air Basin (SJVAB) serve to restrict air movement and prevent the dispersal of pollution. As a result, the SJVAB is highly susceptible to pollution accumulation over time. As shown in the Table 1-2, the SJVAB is in nonattainment for several pollutant standards. The primary pollutants of concern in the San Joaquin Valley are ozone (O3) and PM10.

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – One hour	No Federal Standard[f]	Nonattainment/Severe
Ozone – Eight hour	Nonattainment/Extreme[e]	Nonattainment
PM 10	Attainment[c]	Nonattainment
PM 2.5	Nonattainment[d]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

[a] See 40 CFR Part 81
[b] See CCR Title 17 Sections 60200-60210

[c] On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.
[d] The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).
[e] Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
[f] Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

Table 1-2. San Joaquin Valley Attainment Status; Source: SJVAPCD

Valley Fever: Valley Fever is an illness caused by a fungus (*Coccidioides immitis* and *C. posadasii*) that grows in soils under certain conditions. Favorable conditions for the Valley Fever fungus include low rainfall, high summer temperatures, and moderate winter temperatures. In California, the counties with the highest incident of Valley Fever are Fresno, Kern and Kings counties. When soils are disturbed by wind or activities like construction and farming, Valley Fever fungal spores can become airborne. The spores present a potential health hazard when inhaled. Individuals in occupations such as construction, agriculture, and archaeology have a higher risk of exposure due to working in areas of disturbed soils which may have the Valley Fever fungus.

Regulatory Setting

2035 Kings County General Plan: The County of Kings General Plan includes the following objectives and policies that are related to agricultural resources.

- AQ Policy C1.1.1 Policy: Assess and mitigate project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD.
- AQ Policy F2.1.1 Policy: Coordinate with the SJVAPCD to ensure that construction, grading, excavation and demolition activities within County's jurisdiction are regulated and controlled to reduce particulate emissions to the maximum extent feasible.

Federal Clean Air Act – The 1977 Federal Clean Air Act (CAA) authorized the establishment of the National Ambient Air Quality Standards (NAAQS) and set deadlines for their attainment. The Clean Air Act identifies specific emission reduction goals, requires both a demonstration of reasonable further progress and an attainment demonstration, and incorporates more stringent sanctions for failure to meet interim milestones. The U.S. EPA is the federal agency charged with administering the Act and other air quality-related legislation. EPA's principal functions include setting NAAQS; establishing minimum national emission limits for major sources of pollution; and promulgating regulations. Under CAA, the NCCAB is identified as an attainment area for all pollutants.

California Clean Air Act – California Air Resources Board coordinates and oversees both state and federal air pollution control programs in California. As part of this responsibility, California Air Resources Board monitors existing air quality, establishes California Ambient Air Quality Standards, and limits allowable emissions from vehicular sources. Regulatory authority within established air basins is provided by air pollution control and management districts, which control stationary-source and most categories of area-source emissions and develop regional air quality plans. The project is located within the jurisdiction of the San Joaquin Valley Air Pollution Control District.

The state and federal standards for the criteria pollutants are presented in Section 8.4 of The San Joaquin Valley Unified Air Pollution Control District's 2015 "Guidance for Assessing and Mitigating Air Quality Impacts". These standards are designed to protect public health and welfare. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soils, water, visibility, materials, vegetation and other aspects of general welfare. The U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005, and the annual PM_{10} standard on September 21, 2006, when a new $PM_{2.5}$ 24-hour standard was established.

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (03)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet 8 Hour Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	20 µg/m3		--		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour		Gravimetric or Beta Attenuation	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	12 µg/m³		15 µg/m³		
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	--	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	--	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		--	--	
Nitrogen Dioxide (NO_2) [8]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	--	Gas Phase Annual Chemiluminescence
	Arithmetic Mean	0.030 ppm (57 µg/m³)		53 ppb (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)9	--	

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
	Annual Arithmetic Mean	--		0.030 ppm (for certain areas)9	--	
Lead[10,11]	30 Day Average	1.5 µg/m³	Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m3 (for certain areas)11	Same as Primary Standard	
	Rolling 3-Month Average	--		0.15 µg/m³		
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standard		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
9. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
12. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Table 1-3. Ambient Air Quality Standards; Source: SJVAPCD

San Joaquin Valley Air Pollution Control District (SJVAPCD) – The SJVAPCD is responsible for enforcing air quality standards in the project area. To meet state and federal air quality objectives, the SJVAPCD adopted the following thresholds of significance for projects:

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
Nox	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

Table 1-4. SJVAPCD Thresholds of Significance for Criteria Pollutants; Source: SJVAPCD

The following SJVAPCD rules and regulations may apply to the proposed project:

- **Rule 3135:** Dust Control Plan Fee. All projects which include construction, demolition, excavation, extraction, and/or other earth moving activities as defined by Regulation VIII (Described below) are required to submit a Dust Control Plan and required fees to mitigate impacts related to dust.
- **Rule 4101:** Visible Emissions. District Rule 4101 prohibits visible emissions of air contaminants that are dark in color and/or have the potential to obstruct visibility.
- **Rule 9510:** Indirect Source Review (ISR). This rule reduces the impact PM10 and NOX emissions from growth on the SJVB. This rule places application and emission reduction requirements on applicable development projects in order to reduce emissions through onsite mitigation, offsite SJVAPCD administered projects, or a combination of the two. This project will submit an Air Impact Assessment (AIA) application in accordance with Rule 9510's requirements.
- **Regulation VIII:** Fugitive PM10 Prohibitions. Regulation VIII is composed of eight rules which together aim to limit PM10 emissions by reducing fugitive dust. These rules contain required management practices to limit PM10 emissions during construction, demolition, excavation, extraction, and/or other earth moving activities.

Discussion

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

No Impact: The proposed project is located within the boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD) and would result in air pollutant emissions that are regulated by the air district during both its construction and operational phases. The SJVAPCD is responsible for bringing air quality in Kings County into compliance with federal and state air quality standards. The Air District has Particulate Matter (PM) plans, Ozone Plans, and Carbon Monoxide Plans that serve as the clean air plan for the basin.

Together, these plans quantify the required emission reductions to meet federal and state air quality standards and provide strategies to meet these standards. The SJVAPCD adopted the Indirect Source Review (ISR) Rule in order to fulfill the District's emission reduction commitments in its PM10 and Ozone (NOx) attainment plans and has since determined that implementation and compliance with ISR would reduce the cumulative PM10 and NOx impacts anticipated in the air quality plans to a less than significant level.

Construction Phase. Project construction would generate pollutant emissions from the following construction activities: demolition, site preparation, grading, building construction, application of architectural coatings, and paving. The construction related emissions from these activities were calculated using CalEEMod. The full CalEEMod Report can be found in Appendix A. As shown in Table 1-5 below, project construction related emissions do not exceed the thresholds established by the SJVAPCD.

	CO (tpy)	ROG (tpy)	SOx (tpy)*	Nox (tpy)	PM10 (tpy)	PM2.5 (tpy)
Emissions Generated from Project Construction	**2.2881**	**5.3633**	**0.00444**	**2.2054**	**0.4012**	**0.2192**
SJVAPCD Air Quality Thresholds of Significance	**100**	**10**	**27**	**10**	**15**	**15**
*Threshold established by SJVAPCD for SOx, however emissions are reported as SO2 by CalEEMod.						

Table 1-5. Projected Project Emissions Compared to SJVAPCD Thresholds of Significance for Criteria Pollutants related to Construction; Source: SJVAPCD, CalEEMod Analysis (Appendix A)

Operational Phase. Implementation of the proposed project would result in long-term emissions associated with area sources, such as natural gas consumption, landscaping, applications of architectural coatings, and consumer products, as well as mobile emissions. Operational emissions from these factors were calculated using CalEEMod. The Full CalEEMod Report can be found in Appendix A. As shown in Table 1-6 below, the project's operational emissions do not exceed the thresholds established by the SJVAPCD.

	CO (tpy)	ROG (tpy)	SOx (tpy)*	Nox (tpy)	PM10 (tpy)	PM2.5 (tpy)
Operational Emissions (Dry Years)	**4.1355**	**3.0045**	**.0101**	**.6481**	**1.0560**	**.2965**
SJVAPCD Air Quality Thresholds of Significance	**100**	**10**	**27**	**10**	**15**	**15**
*Threshold established by SJVAPCD for SOx, however emissions are reported as SO2 by CalEEMod.						

Table 1-6. Projected Project Emissions Compared to SJVAPCD Thresholds of Significance for Criteria Pollutants related to Operations; Source: SJVAPCD, CalEEMod Analysis (Appendix A)

Because the emissions from both construction and operation of the proposed project would be below the thresholds of significance established by the SJVAPCD, the project would not conflict with or obstruct implementation of an applicable air quality plan and there is *no impact.*

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact: The SJVAPCD is responsible for bringing air quality in Kings County into compliance with federal and state air quality standards. The significance thresholds and rules developed by the SJVAPCD are designed to prevent projects from violating air quality standards or significantly contributing to existing air quality violations. As discussed above, neither construction-related emissions nor operation-related emissions will exceed thresholds established by the SJVAPCD. The project will comply with all applicable SJVAPCD rules and regulations, which will further reduce the potential for any significant impacts related to air quality as a result of project implementation. Because these thresholds and regulations are designed to achieve and/or maintain federal and state air quality standards, and the project is compliant with these thresholds and regulations, the project will not violate an air quality standard or significantly contribute to an existing air quality violation. The impact is *less than significant.*

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact: The single-family residences located to the South and in the future to the East of the project site are the closest sensitive receptors. The project does not include any project components identified by the California Air Resources Board that could potentially impact any sensitive receptors. These include heavily traveled roads, distribution centers, fueling stations, and dry-cleaning operations. The project would not expose sensitive receptors to substantial pollutant concentrations. The impact would be *less than significant.*

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact: The project will create temporary localized odors during project construction. The proposed project will not introduce a conflicting land use (surrounding land includes residential neighborhoods) to the area and will not have any component that would typically emit odors. The project would not create objectionable odors affecting a substantial number of people. Therefore, impacts would be *less than significant.*

IV. BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	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, or regulations, or by the California Department of Fish & Game or U.S. 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, regulations or by the California Department of Fish and Game 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 director removal, filling, 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?	☐	☐	☐	☑

Discussion for this section originates from the Biological Evaluation letter that was prepared for this project by Soar Environmental Consulting to identify biological resources present or potentially present on the project site and assess the significance of project impacts on such resources per provisions of the California Environmental Quality Act (CEQA), the federal Clean Water Act (CWA), the state and federal endangered species acts (FESA and CESA respectively), California Fish and Game Code, and California Water Code. The full document can be found in Appendix B.

Environmental Setting

The Project site is located in northern Kings County within the lower San Joaquin Valley, within the Central Valley of California. The Central Valley is bordered by the Sierra Nevada Mountain Ranges to the east and the Coast Ranges to the west. Like most of California, Kings County is considered a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is relatively low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives approximately 10 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

The proposed Project site is located in a residential and agricultural interface environment just outside the northern boundary of the community of Armona. The proposed Project site is bounded by agricultural fields to the north, east, and west, and a vacant lot to the south. A residential neighborhood is located approximately 200 feet southeast of the proposed Project site. An irrigation canal runs north and south approximately 0.5-mile to the east of the site. The canal is surrounded by agricultural fields. No other natural water features occur in the vicinity of the proposed Project site. The topography of the area is flat and is approximately 250 feet above mean sea level. The soil on the proposed Project site is highly compacted between rows of orchard trees. A grove of eucalyptus trees is located next to a single-family residence on the northwest portion of the property. Other than orchard trees, few other trees exist in the surrounding area. Powerlines run east and west along the southern boundary of the site. No small mammal burrows or vernal pool features were observed in the vicinity of the proposed Project site.

Regulatory Setting

The purpose of CEQA is to assess the impacts of projects on the environment prior to project implementation. Impacts to biological resources are just one type of environmental impact assessed under CEQA and can vary from project to project in terms of scope and magnitude. Projects requiring removal of vegetation may result in the mortality or displacement of animals associated with said vegetation. Animals adapted to humans, roads, buildings, and pets may replace those species formerly occurring on a site. Plants and animals that are State and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. Such impacts may be considered either “significant” or “less-than significant” under CEQA. According to California Environmental Quality Act, Statute and Guidelines (AEP 2012), “significant effect on the environment” means a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered “significant” if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory finding of significance" if the project has 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, 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."

Federal Endangered Species Act (FESA): defines an endangered species as "any species or subspecies that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." The law requires protection for the habitats and implements recovery plans of the listed species.

California Endangered Species Act (CESA): prohibits the take of any state-listed threatened and endangered species. CESA defines *take* as "any action or attempt to hunt, pursue, catch, capture, or kill any listed species." If the proposed project results in a take of a listed species, a permit pursuant to Section 2080 of CESA is required from the California Department of Fish and Wildlife (CDFW).

2035 Kings County General Plan: The Kings County General Plan contains the following policies related to the preservation of biological resources that may be considered relevant to the proposed Project's environmental review:

Resource Conservation Goal D.1: Preserve land that contains important natural plant and animal habitats.

- **Resource Conservation Objective D1.1:** Require that development in or adjacent to important natural plant and animal habitats minimize the disruption of such habitats.
- **Resource Conservation Objective D3.1:** Ensure that, in development decisions affecting riparian environments, the conservation of fish and wildlife habitat and the protection of scenic qualities are balanced with other purposes representing basic health, safety, and economic needs.

Resource Conservation Goal E.1: Balance the protection of the County's diverse plant and animal communities with the County's economic needs.

- **Resource Conservation Objective E.1.1:** Require mitigation measures to protect important plant and wildlife habitats.

- **Resource Conservation Objective E.1.1.2:** Require as a primary objective in the review of development projects the preservation of healthy native oaks and other healthy native trees.
- **Resource Conservation Objective E.1.1.3:** Maintain to the maximum extent practical the natural plant communities utilized as habitat by threatened and endangered species.

Discussion

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish & Game or U.S. fish and Wildlife Service?

Less Than Significant Impact: The Biological Resource Assessment conducted for the proposed Project found that San Joaquin kitfox is the only special-status species with historical observations within 5 miles of the proposed Project site. No signs of San Joaquin kit fox were found at the time of the Habitat Assessment. Suitable habitat for San Joaquin kit fox is poor on and near the proposed Project site due to agricultural activity. CNDDB records indicate that the nearest and most recent occurrence of San Joaquin kit fox was recorded in 2006 approximately 2.58 miles northeast of the proposed Project site. No small mammal burrows were observed on site that could provide adequate refugia for San Joaquin kit fox or associated prey base species. Due to the level of agricultural activity, residential development of the surrounding area, lack of suitable habitat, time span and distance of other known occurrences from the site, occurrence of San Joaquin kit fox within the vicinity of the proposed Project site is unlikely, and the proposed Project would be unlikely to adversely affect populations of this species. Impacts would be *less than significant.*

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

No Impact: There are no CNDDB-designated "natural communities of special concern" recorded within the proposed Project area or surrounding lands. The proposed Project site consists of agricultural fields and one single-family residence. There are no water bodies on site, and no riparian vegetation exists on the property. In addition, the proposed Project site is surrounded by cultivated agricultural lands. There would be *no impact*.

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

No Impact: There are no wetlands within the proposed Project area. There would be *no impact.*

d) Would the project 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?

Less than Significant Impact: The proposed Project area is surrounded by cultivated agricultural lands,

residential development, and paved roads. Therefore, the proposed Project area does not contain features that would be likely to function as a wildlife movement corridor. No aquatic habitat exists on the proposed Project site. San Joaquin kit fox is the only special status species with potential to exist in the vicinity of the site. Due to the level of agricultural activity, residential development of the surrounding area, lack of suitable habitat, time span and distance of other known occurrences from the site, occurrence of San Joaquin kit fox within the vicinity of the proposed Project site is unlikely. Impacts would be *less than significant.*

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact: The proposed Project would comply with the goals and policies of the 2035 Kings County General Plan. The County does not have a tree preservation policy or ordinance. There would be *no impact.*

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

No Impact: The proposed Project would comply with the goals and policies of the 2035 Kings County General Plan. There are no known habitat conservation plans or Natural Community Conservation Plans (NCCP) in the proposed Project area. There would be *no impact.*

V. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	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 formal cemeteries?	☐	☑	☐	☐

Environmental Setting

The Project area is in the Southern Valley Yokuts ethnographic territory of the San Joaquin Valley and located between the Kings River and the north shore of Tulare Lake. The Yokuts were generally divided into three major groups, the Northern Valley Yokuts, the Southern Valley Yokuts, and the Foothill Yokuts. The Project area is within the Tachi Yokuts territory. The closest village for this area was *Waiu*, which was located on Mussel Slough approximately 6 miles southwest of the Project Site. Primary Yokuts villages were typically located along lakeshores and major stream courses, with scattered secondary or temporary camps and settlements located near gathering areas in the foothills.

European settlement in the Central Valley did not occur until the 1830's, with settlers mainly being trappers or horse thieves. Most areas south of the San Joaquin River were less settled simply because those rivers did not connect to the San Francisco Bay area except in wet flood years. By 1850, California became a state, Tulare County was established in 1853, and Kings County was formed out of the western half of Tulare County in 1893.

The community of Armona dates from 1875, and was a train stop of the east to west branch of the Southern Pacific Railway that ran from Goshen in the east through Hanford and on to Lemoore in the west. The community of Armona served as a major railroad shipping point for local farming and fruit, and even had its own China Town in the early 1900s. With the growth of local cities such as Lemoore and Hanford however, the community was outpaced in growth and prominence.

A Cultural Resources Records Search was conducted by the Southern San Joaquin Valley Information Center on January 21, 2022. The records search included a review of all recorded archaeological and historical resources in the Project area and within a 0.5-mile radius of the Project. Sources consulted included archaeological site and survey base maps, historical USGS topographic maps, reports of previous investigations, cultural resource records (DPR forms) as well as listings of the Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. The records search stated there have been six previous cultural resource studies within the project area and seven additional studies within one-half mile of the project site. According to the records search, there are no recorded cultural resources within

the project area and five recorded cultural resources within a one-half mile radius. These resources are the Southern Pacific Railroad, the site of the former Armona Train Station, a historic era well/cisterns, a historic era canal, and a historic era water tower. The full findings of the cultural records search can be found in Appendix C.

Regulatory Setting

National Historic Preservation Act: The National Historic Preservation Act was adopted in 1966 to preserve historic and archeological sites in the United States. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation offices.

California Historic Register: Pursuant to CEQA, a historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources may include, but are not limited to, "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically or archaeologically significant" (PRC§5020.1[j]). In addition, a resource included in a local register of historical resources or identified as significant in a local survey conducted in accordance with the state guidelines are also considered historic resources under California Public Resources Code (PRC) Section 5020.1.

According to CEQA guidelines §15064.5 (a)(3), criteria for listing on the California Register of Historical Resources includes the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history.

According to CEQA guidelines §21074 (a)(1)(2), criteria for tribal cultural resources includes the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    - Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    - Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

2035 Kings County General Plan: The Resource Conservation Element of the 2035 Kings County General Plan includes the following objectives and policies that are potentially applicable to the proposed project:

Resource Conservation Objective I1.1: Promote the rehabilitation or adaptation to new uses of historic sites and structures.

- RC Policy I1.1.2 Direct proposed developments that may affect proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or other similarly

purposed advisory body under the Kings County Parks and Recreation Advisory Commission for review and comment.

- RC Policy I1.1.3 Encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California Inventory of Historic Resources.
- RC Policy I1.1.4 Refer applications that involve the removal, destruction, or alteration of proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or its successor for recommended mitigation measures.

Resource Conservation Objective I1.2: Identify potential archaeological and historical resources and, where appropriate, protect such resources.

- RC Policy I1.2.3 Address archaeological and cultural resources in accordance with the California Environmental Quality Act (CEQA) for discretionary land use applications.

Armona Community Plan: The Armona Community Plan contains the following policies to limit impacts to cultural resources:

- ACP Policy 4A.1.4 Preserve historical landmarks and require new development to integrate these Community valued features into the overall design of the development.
- ACP Policy 8D.1.1 New development within the Armona Community Planning Area shall be required to provide onsite monitoring for archaeological, cultural and historic remains and artifacts whenever earth moving construction activities have unearthed archaeological remains. Monitoring shall be done by an individual or firm that is found acceptable by the Tachi Yokut Tribe based at the Santa Rosa Rancheria.
- ACP Policy 8D.1.2 If any discoveries are made, construction shall immediately cease and the nature of the finding determined. The local tribe(s) as identified by the California Native American Heritage Commission shall be immediately notified and allowed the opportunity to evaluate the findings.

Discussion

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to in Section 15064.5?

Less Than Significant Impact with Mitigation Incorporation: A records search was conducted on behalf of the Applicant at the Southern San Joaquin Valley Archaeological Information Center (AIC), to determine if historical or archaeological sites had previously been recorded within the study area, if the project area had been systematically surveyed by archaeologists prior to the initial study, and/or whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive.

The records search stated there have been six previous cultural resource studies within the project area and seven additional studies within one-half mile of the project site. According to the records search, there are no recorded cultural resources within the project area and five recorded cultural resources within a one-half mile radius. These resources are the Southern Pacific Railroad, the site of

the former Armona Train Station, a historic era well/cisterns, a historic era canal, and a historic era water tower. The full findings of the cultural records search can be found in Appendix C.

Although no other cultural resources were identified, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that impacts to this checklist item will be *less than significant with mitigation incorporation*.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant Impact with Mitigation Incorporation: There are no known archaeological resources located within the project area. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that potential impact to unknown archeological resources will be *less than significant with mitigation incorporation*.

c) Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact with Mitigation Incorporation: There are no known human remains buried in the project vicinity. If human remains are unearthed during project construction, there is a potential for a significant impact. As such, implementation of Mitigation Measure CUL-2 will ensure that impacts remain *less than significant with mitigation incorporation.*

Mitigation Measures for Impacts to Cultural Resources

Mitigation Measure CUL-1:

In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project:

a. Cultural Resources Alert on Project Plans. The project proponent shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources.

b. Pre-Construction Briefing. The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and on the procedures to be enacted if resources are found.

c. Stop Work Near any Discovered Cultural Resources. The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during construction of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified

immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA.

d. Mitigation for Discovered Cultural Resources. If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.

e. Native American Monitoring. Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities during construction. Tribal participation would be dependent upon the availability and interest of the Tribe.

f. Disposition of Cultural Resources. Upon coordination with the Kings County Community Development Agency, any pre-historic archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

Mitigation Measure CUL-2: In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project:

a. Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop in the vicinity of the find and the Kings County Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD). The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(e) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains and items

associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

b. Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin Valley Information Center.

VI. ENERGY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in 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?	☐	☐	☐	☑

Environmental Setting

Southern California Edison (SCE) provides electricity services to the community of Armona. SCE serves approximately 15 million people in a 50,000 square-mile area of Central, Coastal, and Southern California. SCE supplies electricity to its customers through a variety of renewable and nonrenewable sources. Table 1-7 below shows the proportion of each energy resource sold to California consumers by SCE in 2019 as compared to the statewide average.

Fuel Type		SCE Power Mix	California Power Mix
Coal		0%	3%
Large Hydroelectric		7.9%	14.6%
Natural Gas		16.1%	34.2%
Nuclear		8.2%	9%
Other (Oil/Petroleum Coke/Waste Heat)		0.1%	0.2%
Unspecified Sources of Power[1]		32.6%	7.3%
Eligible Renewables	Biomass	0.6%	2.4%
	Geothermal	5.9%	4.8%
	Small Hydro	1%	2%
	Solar	16%	12.3%
	Wind	11.5%	10.2%
	Total Eligible Renewable	**35.1%**	**31.7%**
1. "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.			

Table 1-7. 2019 SCE and State average power resources; Source: Southern California Edison

SCE also offers Green Rate Options, which allow consumers to indirectly purchase up to 100% of their energy from renewable sources. To accomplish this, SCE purchases the renewable energy necessary to meet the needs of Green Rate participants from solar renewable developers.

Southern California Gas (SoCalGas) Company provides natural gas services to the project area. Natural gas is an energy source developed from fossil fuels composed primarily of methane (CH4). Approximately 45% of the natural gas burned in California is used for electricity generation, while 21% is consumed by the residential sector, 25% is consumed by the industrial sector, and 9% is consumed by the commercial sector.

Regulatory Setting

California Code of Regulations, Title 20: Title 20 of the California Code of Regulations establishes standards and requirements for appliance energy efficiency. The standards apply to a broad range of appliances sold in California.

California Code of Regulations, Title 24: Title 24 of the California Code of Regulations is a broad set of standards designed to address the energy efficiency of new and altered homes and commercial buildings. These standards regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. Title 24 requirements are enforced locally by the Kings County Building Department.

California Green Building Standards Code (CALGreen): CalGreen is a mandatory green building code that sets minimum environmental standards for new buildings. It includes standards for volatile organic compound (VOC) emitting materials, water conservation, and construction waste recycling.

SB 100: SB 100, passed in 2018, set a deadline in 2045 for 100% of energy to be renewable. Additionally, by 2030, 60% of all energy must be renewable. California is targeting this goal through solar and other renewable sources.

AB 178: For California to meet its renewable goals, AB 178 was passed in 2018. AB 178 states that starting in 2020 all new low rise residential buildings must be built with solar power.

2035 Kings County General Plan: The Resource Conservation Element of the County of Kings General Plan contains the following policies related to energy conservation:

RC G1.3 Objective: Conserve energy to lower energy costs and improve air quality.

- RC Policy G1.3.1: Encourage developers to be innovative in providing landscaping that modifies microclimates, thus reducing energy consumption.
- RC Policy G1.3.2: Require new urban development to provide and maintain shade trees and other landscaping along streets and within parking areas to reduce radiation heating. However, solar access for solar panels shall not be blocked.
- RC Policy G1.3.3: Participate, to the extent feasible, in local and State programs that strive to reduce the consumption of energy.

Discussion

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact: The proposed project includes the construction and operation of single-family housing. During project construction there would be an increase in energy consumption related to worker trips and operation of construction equipment. This increase in energy use would be temporary and limited to the greatest extent possible through compliance with local, state, and federal regulations. Vehicle fuel consumption during project construction was estimated based on the assumed construction schedule, vehicle trip lengths, and the number of workers per construction phase as provided by CalEEMod, and Year 2023 gasoline/diesel MPG factors provided by the EMFAC2014. To simplify the estimation process, it was assumed that all worker vehicles used gasoline as a fuel source and all vendor vehicles used diesel as a fuel source. Table 1-8, below, provides gasoline and diesel fuel used by construction and on-road sources during each phase of project construction.

Construction Phase	# of Days	Daily Worker Trips[1]	Daily Vendor Trips[1]	Daily Hauling Trips[1]	Total Gasoline Fuel Use (gallons)[2]	Total Diesel Fuel Use (gallons)[2]
Site Preparation	10	18	0	0	1,950	0
Grading	35	20	0	0	10,777	0
Building Construction	370	39	12	0	53,441	3,845
Paving	20	15	0	0	2,356	0
Architectural Coating	20	8	0	0	317	0
Total	**455**	**N/A**	**N/A**	**N/A**	**68,841**	**3,845**

1. Data provided by CalEEMod (Appendix A)
2. See Appendix D

Table 1-8. On-Road Mobile Fuel Use Generated by Construction Activities. Source: CalEEMod (v. 2020.4.0); EMFAC2014

While construction of the proposed project will result in additional energy consumption, this energy use is not unnecessary or inefficient. This energy use is justified by the energy-efficient nature of the proposed project and would be limited to the greatest extent possible through compliance with local, state, and federal regulations. Once construction is complete, the project is expected to achieve net zero energy consumption. The proposed project is subject to the California New Residential Zero Net Energy Action Plan 2015-2020. This plan establishes a goal for all residential buildings built after January 1, 2020, to be zero net energy. The California Energy Commission is responsible for the development and enforcement of specific strategies to achieve this goal. These strategies are implemented through Title 24, Part 6 of the California Building Code, which requires developers to include certain measures (including solar panels on all new residential buildings) to achieve required building efficiency standards.

Total Annual Operational VMT[1]	Annual Fuel Use (Gasoline)	Annual Fuel Use (Diesel)	Average MPG
2,764,433 Miles	**105,916 Gallons**	**11,887 Gallons**	**25.1**

1. Data Provided by CalEEMod
2. See Appendix D

Table 1-9. On-Road Mobile Fuel Use Generated by Operational Activities. Source CalEEMod (v. 2020.4.0); EMFAC2014

During project operations, the proposed project is not anticipated to increase in wasteful fuel consumption. This is due to the distance of the project site to the commercial, recreational, and denser residential uses, resulting in less of a reliance on personal vehicles.

Because construction-related energy use would be temporary and limited to the greatest extent feasible through consistency with Federal, State, and local policies related to energy conservation, and operation of the project will comply with all energy efficiency standards required under Title 24, Section 6, and these standards were specifically developed to achieve net zero energy for residential projects, it can be presumed that the project will achieve net zero energy. The project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. The impact is *less than significant.*

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact: The proposed project will not conflict with or obstruct any state or local plans for renewable energy or energy efficiency. The proposed project will comply with all state and local policies related to energy efficiency and there is *no impact*.

VII. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) 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.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☐	☑
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☑
iv) 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, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct and indirect risks to life or property?	☐	☐	☐	☑
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☑
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐

Environmental Setting

Geologic Stability and Seismic Activity

- **Seismicity:** Kings County has no known major fault systems within its boundaries. The greatest potential for seismic activity in Kings County is posed by the San Andreas Fault, which is located approximately four miles west of the Kings County line. Another large fault that may pose potential geologic hazards for Kings County is the White Wolf fault located South of the County

near Arvin and Bakersfield. The Five County Seismic Safety Element identifies the project site as having a 20-30% probability of shaking 10% in 50 years. Ground shaking can result in other geological impacts, including liquefaction, landslides, lateral spreading, subsidence, or collapse of buildings.

- **Liquefaction**: Liquefaction is a phenomenon whereby unconsolidated and/or near saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil, which can result in landslides and lateral spreading. The Five County Seismic Safety Element describes potential Liquefaction areas, with the project site located in the safest Valley Floor Seismic Zone.

- **Landslides**: Landslides refer to a wide variety of processes that result in the downward and outward movement of soil, rock, and vegetation under gravitational influence. Landslides are caused by both natural and human-induced changes in slope stability and often accompany other natural hazard events, such as floods, wildfire, or earthquake. While Western portions of the County are high landslide hazard areas, most of the County, including the proposed project site, is considered a low landslide hazard area.

- **Subsidence**: Land Subsidence refers to the vertical sinking of land as a result of either manmade or natural underground voids. Subsidence has occurred throughout the Central Valley as a result of groundwater, oil, and gas withdrawal. Most of the County, including the proposed project site, is not considered to be at risk of subsidence related hazards.

Soils Involved in Project: The proposed project involves construction on two soil types. The properties of the soil are described briefly below:

- **Nord Complex:** The Nord series consists of very deep, well drained soils that formed in mixed alluvium dominantly from granitic and sedimentary rocks. Nord soils occur on alluvial fans and flood plains. Slopes are 0 to 2 percent. They are well drained, negligible to low runoff, moderate permeability, but are moderately slow in saline-sodic phases. There is available water storage of 11.21 cm.

- **Nord Fine Sandy Loam:** Also in the Nord series, there is available water storage of 12.54 cm.

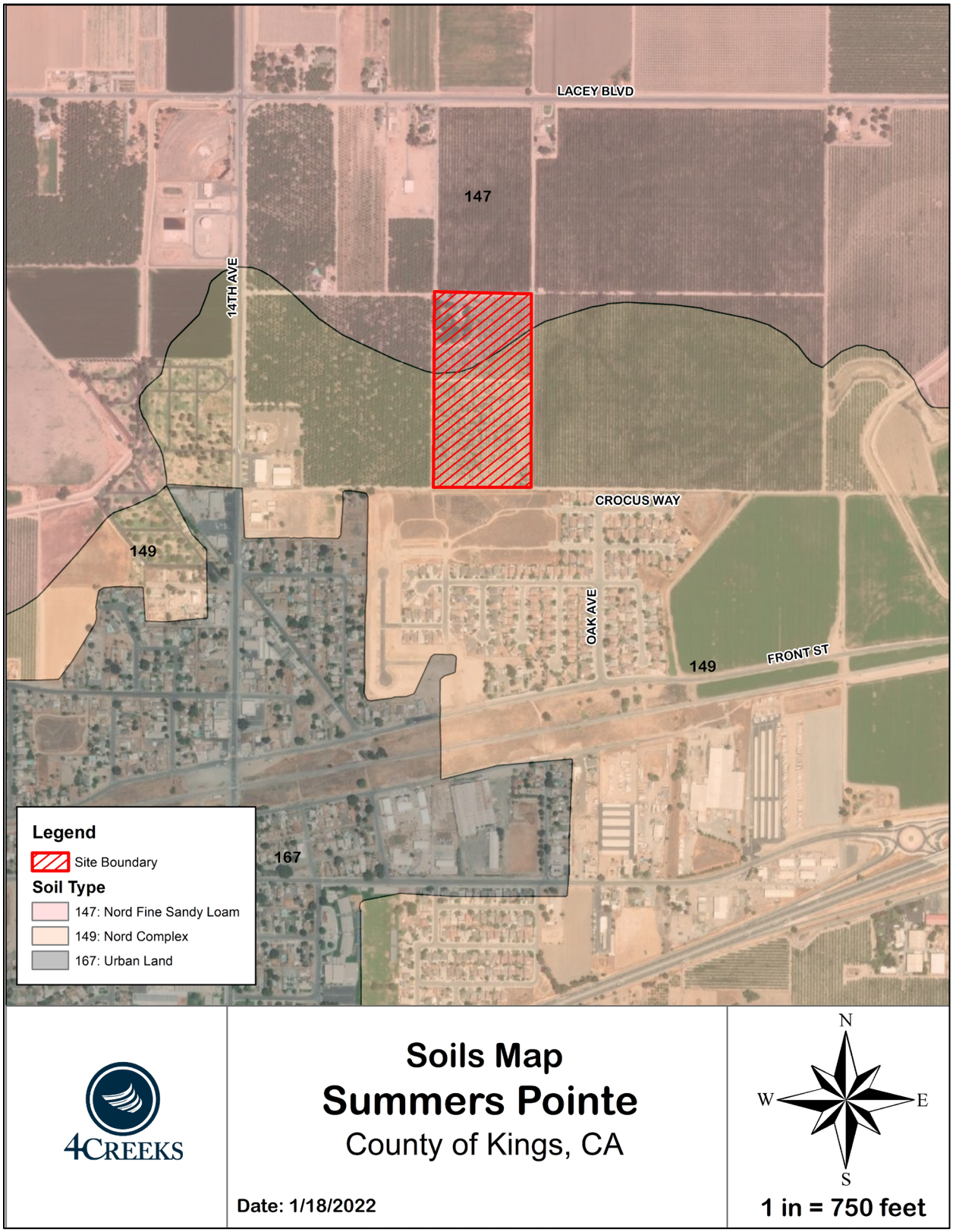


Figure 1-4: Soils Map

Regulatory Setting

California Building Code: The California Building Code contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. CBC provisions provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures and certain equipment.

County of Kings Municipal Code, Section 5-36 (California Building Code): The County of Kings Municipal Code has incorporated and adopted the CBC, 2013 Edition, as promulgated by the California Building Standards Commission, which incorporates the adoption of the 2012 edition of the of the International Building Code, as amended with necessary California amendments and the 2012 International Building Code of the International Code Council. Together with the County's amendments to the CBC provided in Section 5-3, these shall be referred to as the Kings County Building Code.

2035 Kings County General Plan: The Health and Safety (HS) Element of the 2035 Kings County General Plan includes the following policies regarding soils and geology:

- HS Policy A1.3.1: Implement natural hazards review criteria for new development that is based upon information provided in the Natural Hazards Section of the Health and Safety Element to improve long term loss prevention.
- HS Policy A1.4.1: Implement the current California Building Codes and any subsequent amendments as contained within California Code of Regulations Title 24 to improve disaster resistance of future buildings.
- HS Policy A2.1.1: Maintain and enforce current building codes and standards to reduce the potential for structural failure caused by ground shaking and other geologic hazards.
- HS Policy A2.1.2: Use the 1997 Uniform Code for the Abatement of Dangerous Buildings of a non-residential nature, and the 1997 Uniform Housing Code to assess unsafe residential structures and ensure their safe construction and rehabilitation.

Additionally, the HS Element shows that the project site is in the *V1* Seismic Zone. This is the safest zone in the county regarding earthquakes. This seismic zone can be summarized as a moderately thick section of marine and continental sedimentary deposits overlying the granitic basement complex. The amplification of shaking from an earthquake in this zone is relatively high for low to medium rise structures, however the fault systems are too far away to cause any significant effect. The effects of earthquakes in and around the project site should be minimal.

Discussion

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. 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.

No Impact: Although the project is located in an area of relatively low seismic activity, the project site has a low chance of being affected by ground shaking from distant faults. The potential for strong seismic ground shaking on the project site is not a significant environmental concern due to the infrequent seismic activity of the area and distance to the faults. The project does not propose any components which could cause substantial adverse effects in the event of an earthquake. Additionally, the project has no potential to cause the rupture of an earthquake fault indirectly or directly. Therefore, there is *no impact* related to the risk of loss, injury or death involving a rupture of a known earthquake fault.

ii. Strong seismic ground shaking?

No Impact: According to the Five County Seismic Safety Element, the project site is in an area of low seismic activity. The proposed project does not include any activities or components which could feasibly cause strong seismic ground shaking, either directly or indirectly. There is *no impact.*

iii. Seismic-related ground failure, including liquefaction?

No Impact: The Five County Seismic Safety Element identifies the risk of liquefaction within the county as low because the soil types are unsuitable for liquefaction. Due to the project being in the V1 Seismic Zone, there is low potential for seismic activity. This would further reduce the likelihood of liquefaction occurrence. Because the project site is within an area of low seismic activity, and the soils associated with the project area not suitable for liquefaction, there are *no impacts.*

iv. Landslides?

No Impact: The County of Kings is considered at low risk of landslides. Additionally, the project site is generally flat and there are no hill slopes in the area. No geologic landforms exist on or near the site that would result in a landslide event. As a result, there is very low potential for landslides. There would be *no impact.*

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact: Because the project site is relatively flat, the potential for erosion is low. However, construction-related activities and increased impermeable surfaces can increase the probability for erosion to occur. Construction-related impacts related to erosion will be temporary and subject to best management practices (BMPs) required by SWPPP, which are developed to prevent significant impacts related to erosion from construction. Because impacts related to erosion would be temporary and limited to construction, and because required best management practices would prevent significant impacts related to erosion, the impact will remain *less than significant.*

c) Would the project 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?

No Impact: The soils known to be on the project site and the geologic formations in the V1 seismic zone are considered stable. and have a low capacity for landslides, lateral spreading, subsidence, liquefaction or collapse. Because the project area is stable, and this project would not result in a substantial grade change to the topography to the point that it would increase the risk of landslides, lateral spreading, subsidence, liquefaction or collapse, there is *no impact.*

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact: The proposed project site is not in an area as having expansive soils. Because the soils associated with the project do not exhibit shrink swell behavior, implementation of the project will pose no risk to life or property caused by expansive soils and there is *no impact.*

e) Would the project 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 waste water?

No Impact: The proposed project would not include the use of septic tanks or any other alternative wastewater disposal systems. The proposed buildings will tie into the Armona Community Service District sewer services. Therefore, there would be *no impact.*

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact with Mitigation: There are no unique geologic features and no known paleontological resources located within the project area. However, there is always the possibility that paleontological resources may exist below the ground surface. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that any impacts resulting from project implementation remain *less than significant with mitigation incorporation*.

Mitigation Measures for Impacts to Geology and Soils:

See Cultural Resources Section- Mitigation Measures CUL-1 and CUL-2

VIII. GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	☐	☐	☑	☐
a) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☑

Environmental Setting

Natural processes and human activities emit greenhouse gases. The presence of GHGs in the atmosphere affects the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 34ºC cooler. However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

The effect of greenhouse gasses on earth's temperature is equivalent to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbons, hydro chlorofluorocarbons, and hydro fluorocarbons, per fluorocarbons, sulfur and hexafluoride. Some gases are more effective than others. The Global Warming Potential (GWP) has been calculated for each greenhouse gas to reflect how long it remains in the atmosphere, on average, and how strongly it absorbs energy. Gases with a higher GWP absorb more energy, per pound, than gases with a lower GWP, and thus contribute more to global warming. For example, one pound of methane is equivalent to twenty-one pounds of carbon dioxide.

GHGs as defined by AB 32 include the following gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHGs as defined by AB 32 are summarized in Table 1-10. Each gas's effect on climate change depends on three main factors. The first being the quantity of these gases are in the atmosphere, followed by how long they stay in the atmosphere and finally how strongly they impact global temperatures.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Methane (CH4)	Is a flammable gas and is the main component of natural gas	12 years	21	Emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Carbon dioxide (CO2)	An odorless, colorless, natural greenhouse gas.	30-95 years	1	Enters the atmosphere through burning fossil fuels (coal, natural gas and oil), solid waste, trees and wood products, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
Chloro-fluorocarbons	Gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are non-toxic nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface).	55-140 years	3,800 to 8,100	Were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone.
Hydro-fluorocarbons	A man-made greenhouse gas. It was developed to replace ozone-depleting gases found in a variety of appliances. Composed of a group of greenhouse gases containing carbon, chlorine an at least one hydrogen atom.	14 years	140 to 11,700	Powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for stratospheric ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases.
Nitrous oxide (N2O)	Commonly known as laughing gas, is a chemical compound with the formula N2O. It is an oxide of nitrogen. At room temperature, it is a colorless, non-flammable gas, with a slightly sweet odor and taste. It is used in surgery and dentistry for its anesthetic and analgesic effects.	120 years	310	Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
Pre-fluorocarbons	Has a stable molecular structure and only breaks down by ultraviolet rays about 60 kilometers above Earth's surface.	50,000 years	6,500 to 9,200	Two main sources of pre-fluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	An inorganic, odorless, colorless, and nontoxic nonflammable gas.	3,200 years	23,900	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing and as a tracer gas.

Table 1-10. Greenhouse Gasses; Source: EPA, Intergovernmental Panel on Climate Change

Regarding the quantity of these gases are in the atmosphere, we first must establish the amount of the particular gas in the air, known as Concentration, or abundance, which are measured in parts per million, parts per billion and even parts per trillion**.** To put these measurements in more relatable terms, one part per million is equivalent to one drop of water diluted into about 13 gallons of water, roughly a full tank of gas in a compact car. Therefore, it can be assumed larger emission of greenhouse gases lead to a higher concentration in the atmosphere.

Each of the designated gases described above can reside in the atmosphere for different amounts of time, ranging from a few years to thousands of years. All these gases remain in the atmosphere long enough to become well mixed, meaning that the amount that is measured in the atmosphere is roughly the same all over the world regardless of the source of the emission.

Regulatory Setting

AB 32: AB 32 set the 2020 greenhouse gas emissions reduction goal into law. It directed the California Air Resources Board to begin developing discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit. The reduction measures to meet the 2020 target are to be adopted by the start of 2011.

SB 1078, SB 107 and Executive Order S-14-08: SB 1078, SB 107, and Executive Order S-14-08 require California to generate 20% of its electricity from renewable energy by 2017. SB 107 then changes the 2017 deadline to 2010. Executive Order S-14-08 required that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020.

SJVAPCD Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA: The County of Kings does not have a climate action plan, however the SJVAPCD created a guidance document to review the impacts of proposed projects within the district's boundaries. This document provides thresholds for proposed projects to meet to be considered less than significant. Additionally, this document provides strategies to reduce GHG emissions.

Kings County Association of Governments Regional Climate Action Plan: The KCAG prepared a Climate Action Plan to reduce GHG emissions. The plan is a long-range policy document that identifies cost-effective measures to reduce GHG emissions from activities within Kings County consistent with California State Assembly Bill (AB) 32. The GHG Plan is designed to ensure that the development accommodated by the buildout of the General Plan supports the goals of AB 32. This plan is a voluntary effort between local agencies and can be used by agencies to reduce GHG emissions. The document was designed with three goals in mind: 1) Benchmark the region's 2005 baseline GHG emissions and 2020 projected emissions relative to the statewide emissions target; 2) Provide a roadmap for each local agency, as desired, to achieve the State recommended target of 15 percent below 2005 levels by the year 2020, consistent with AB 32; and 3) Support the streamlining of the environmental review process for future projects within the participating local jurisdictions in accordance with State California Environmental Quality Act (CEQA) Guidelines Sections 15152 and 15183.5.

Discussion

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Less Than Significant Impact: The SJVAPCD does not provide numeric thresholds to assess the significance of greenhouse gas emissions. Instead, the SJVAPCD "Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA" states that projects which achieve a 29% GHG emission reduction compared to Business as Usual (BAU) would be determined to have a less than significant individual and cumulative impact for GHG. "Business as usual" (BAU) conditions are defined based on the year 2005 building energy efficiency, average vehicle emissions, and electricity energy conditions. The BAU conditions assume no improvements in energy efficiency, fuel efficiency, or renewable energy generation beyond that existing today. The 2005 BAU conditions were estimated using CalEEMod.

Implementation of the proposed project would result in long-term greenhouse gas emissions associated with area sources, such as natural gas consumption, landscaping, applications of architectural coatings, and consumer products, as well as mobile emissions. The GHG emissions were estimated using CalEEMod (Appendix A).

	C02 (MT/Year)	CH4 (MT/Year)	N20 (MT/Year)	CO2e (MT/Year)
Operational Emissions	1,200	1.86	.06	1,269
2005 BAU	1,941	2.18	.18	2,048
% Reduction From BAU				**38%**

Table 1-11: Projected Project Operational GHG Emissions Compared to 2005 BAU; Source: (CalEEMod, V.2020.4.0)

The project's operational GHG are estimated to be 779 CO2e MT lower than the 2005 BAU. This is a reduction of 38%, more than the 29% threshold. Therefore, the impact is considered *less than significant.*

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact: The SJVAPCD states that individual and cumulative GHG emissions are considered less than significant if a project complies with an approved GHG emission reduction plan or GHG mitigation program with within the geographic area in which the project is located. The KCAG Climate Action Plan meets the requirements for a Qualified Greenhouse Gas Reduction Strategy. Therefore, the proposed project's GHG emissions would not be considered a significant impact if the proposed Project would be consistent with the KCAG GHG Reduction Strategy. Table 1-12, below, evaluates the proposed project's consistency with the applicable objectives and policies included in the GHG reduction plan.

Climate Action Plan Policies	Project Consistency with Strategy
Policy E-4.1: Encourage local homebuilders to participate in the New Solar Homes Partnership to install solar PV systems on qualifying new homes.	**Consistent.** The proposed project involves solar panels on the new homes.
Policy TL-2.5: Support land use planning that will promote pedestrian and bicyclist access to and from new development by encouraging land use and subdivision designs that provide safe bicycle and pedestrian circulation, including bicycle parking facilities and internal bicycle and pedestrian routes, where feasible.	**Consistent.** The proposed project provides enhanced pedestrian access throughout the project site.
Policy T-1.1: Provide tree planting guidelines that address the types of trees appropriate to plant in the region, with emphasis placed on native, drought-tolerant trees.	**Consistent.** The proposed project incorporates street trees.
Policy TL-2.2: Incorporate multi-modal improvements into pavement resurfacing, restriping, and signalization operations where safety and convenience of users can be improved within the scope of work.	**Consistent.** The proposed project will improve the streets in and around the project site.
Policy TL-1.4: Through the development review process, evaluate development projects based on consistency with applicable general plan policies, zoning regulations, and design guidelines, including the Kings County Smart Growth Principles and Kings County and San Joaquin Valley Blueprint.	**Consistent.** The proposed project will comply with all general plan policies and guidelines.

Table 1-12. Project Consistency with Climate Action Plan Strategies.

As discussed above, the proposed project is consistent with the KCAG Climate Action Plan. The proposed project will comply with all Federal, State, and Local rules pertaining to the regulation of greenhouse gas emissions and the project will implement Best Performance Standards developed by the SJVAPCD. The project will not conflict with any plan, policy, or regulation developed to reduce GHG emissions. There is *no impact.*

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	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, would it create a significant hazard or excessive noise 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 public use airport, would the project result in a safety hazard 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 significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☑

Environmental Setting

The proposed project site is located approximately .60 miles North of the nearest school (Parkview Middle School) and approximately 4.1 miles West of the nearest public airport (Hanford Municipal Airport).

The Department of Toxic Substances Control's (DTSC's) Envirostor was used to identify any sites known to be associated with releases of hazardous materials or wastes within the project area. This research confirmed that the project would not be located on or nearby a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Regulatory Setting

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S. Code [U.S.C.] §9601 et seq.). The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or the Superfund Act) authorizes the President to respond to releases or threatened releases of hazardous substances into the environment.

Occupational Safety and Health Administration. The Occupational Safety and Health Administration (OSHA) sets and enforces Occupational Safety and Health Standards to assure safe working conditions. OSHA provides training, outreach, education, and compliance assistance to promote safe workplaces. The proposed Project would be subject to OSHA requirements during construction, operation, and maintenance.

Toxic Substances Control Act of 1976 (15 U.S.C. §2601 et seq.). The Toxic Substance Control Act was enacted by Congress in 1976 and authorizes the EPA to regulate any chemical substances determined to cause an unreasonable risk to public health or the environment.

Hazardous Waste Control Law, Title 26. The Hazardous Waste Control Law creates hazardous waste management program requirements. The law is implemented by regulations contained in Title 26 of the California Code of Regulations (CCR), which contains requirements for the following aspects of hazardous waste management:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

California Code of Regulations, Title 22, Chapter 11. Title 22 of the California Code of Regulations contains regulations for the identification and classification of hazardous wastes. The CCR defines a waste as hazardous if it has any of the following characteristics: ignitability, corrosivity, reactivity, and/or toxicity.

California Emergency Services Act. The California Emergency Services Act created a multi-agency emergency response plan for the state of California. The Act coordinates various agencies, including CalEPA, Caltrans, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

Kings County of Department of Public Health: A Certified Unified Program Agency (CUPA) is a local agency that has been certified by Cal/EPA to implement the local Unified Program. The Kings County Department of Public Health is the certified CUPA for the Armona area and vicinity.

2035 Kings County General Plan: The Health and Safety Element of the 2035 Kings County General Plan includes the following policies pertaining to hazards and hazardous materials and have been relevant to this analysis:

HS Objective C2.2: Provide quality fire protection services throughout the County by the Kings County Fire Department, and Fire safety preventative measures to prevent unnecessary exposure of people and property to fire hazards in both County Local Responsibility Areas and State Responsibility Area.

- HS Policy C2.2.3: Use the 1997 Uniform Code for the abatement of Dangerous Buildings. All new structures to be occupied shall be built to current Fire Code Standards.

HS Objective C2.4: Ensure maintenance and upkeep of key emergency access routes, and critical facilities and infrastructure to minimize delays or disruptions in emergency response.

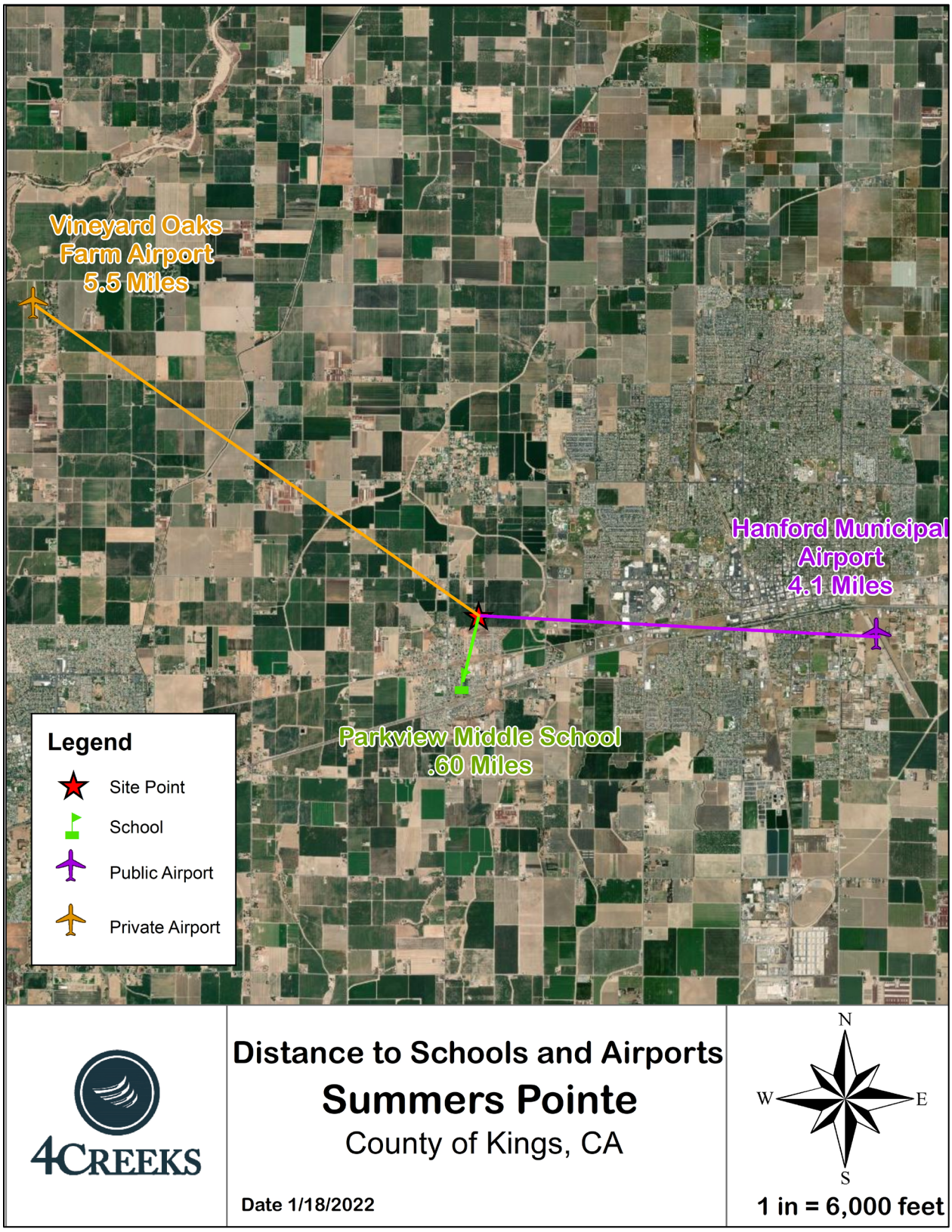


Figure 1-5: Distance to Schools and Airports

Discussion

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact: Project construction activities may involve the use, storage, and transport of hazardous materials. During construction, the contractor will use fuel trucks to refuel onsite equipment and may use paints and solvents to a limited degree. The storage, transport, and use of these materials will comply with Local, State, and Federal regulatory requirements. There is the potential for small leaks due to refueling of construction equipment, however standard construction Best Management Practices (BMPs) included in the SWPPP will reduce the potential for the release of construction related fuels and other hazardous materials by controlling runoff from the site and requiring proper disposal or recycling of hazardous materials. The impact is *less than significant.*

b) Would the project 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?

Less than Significant Impact: There is no reasonably foreseeable condition or incident involving the project that could result in release of hazardous materials into the environment, other than any potential accidental releases of standard fuels, solvents, or chemicals encountered during typical construction of a residential subdivision. Should an accidental hazardous release occur or should the project encounter hazardous soils, existing regulations for handling hazardous materials require coordination with the California Department of Toxic Substances Control for an appropriate plan of action, which can include studies or testing to determine the nature and extent of contamination, as well as handling and proper disposal. Therefore, potential impacts are *less than significant*.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant Impact: The project is located approximately .60 miles from an existing middle school. The project does not involve the use or storage of hazardous substances other than small amounts of pesticides, fertilizers, and cleaning agents required for normal maintenance of structures and landscaping. The project would not emit hazardous emissions or involve the handling of acutely hazardous materials or waste. Therefore, impacts would be *less than significant*.

d) Would the project 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, would it create a significant hazard to the public or the environment?

No Impact: The project site is not listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control. There would be *no impact.*

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 public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact: The proposed project is located approximately 4.1 miles West of the nearest public airport (Hanford Municipal Airport) and is not located in an airport land use plan. Implementation of the proposed project would not result in a safety hazard for people residing or working in the project area. There is *no impact.*

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact: The County's design and environmental review procedures shall ensure compliance with emergency response and evacuation plans. In addition, the site plan will be reviewed by the Fire Department per standard County procedure to ensure consistency with emergency response and evacuation needs. Therefore, the proposed project would have *no impact* on emergency evacuation.

g) Would the project expose people or structures, either directly or indirectly, to significant risk of loss, injury or death involving wildland fires?

No Impact: The land surrounding the project site is developed with urban uses and farmlands which are not considered to be wildlands. The Kings County Multi-jurisdictional Local Hazard Mitigation Plan (Pages 52-55) identifies Armona and the areas surrounding the Community as a low fire hazard severity zone. The Plan states that wildfires are unlikely to occur west of Interstate 5, as almost all wildfires occur in the southwestern portion of the County. The proposed project would not expose people or structures to significant risk of loss, injury or death involving wildland fires and there is *no impact.*

X. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise sustainably 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:				
(i) result in substantial erosion or siltation on- or off-site?	☐	☑	☐	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	☐	☑	☐	☐
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☑	☐	☐
(iv) impede or redirect flood flows?	☐	☑	☐	☐
d) In flood hazard, tsunami, or seiche zones risk the release of pollutants due to project inundation?	☐	☐	☐	☑
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater movement plan?	☐	☐	☐	☑

Environmental Setting

Surface Water: The King's River is the County's primary surface water feature. It is 133 miles long and is located approximately 6 miles North of the proposed project site. The King's River travels through the San Joaquin Valley, providing irrigation water to more than one million acres of agricultural land. Additionally, there is a network of canals and channels for agricultural and drainage uses throughout the planning area. The river is regulated by the Pine Flat Dam east of Fresno.

Groundwater: The San Joaquin Valley Groundwater Basin is comprised of six subbasins. The County of Kings contains five of the subbasins: The Westside Subbasin, The Kaweah Subbasin, The Kings Subbasin, The Pleasant Valley Subbasin, and The Tulare Lake Subbasin. The project site is located within the Tulare Lake Subbasin. The Tulare Lake Subbasin is approximately 837 square miles and is crucial to the southern

San Joaquin Valley. Subsurface recharge occurs through movement of groundwater from external sources. Subsurface water tends to flow from areas with a higher groundwater table into areas with lower groundwater tables because the groundwater table surrounding the County is higher than inside the County itself. Groundwater flows from five bounding features, the Kettleman Hills to the southwest, the Kings River alluvial fan to the northeast, The Arroyo Pasajero fan to the northwest, The Tulare Lake clay beds in the central portion, and the Kaweah and Tule River alluvial fans to the east.

Stormwater Drainage: Stormwater facilities consist of pipelines, storm drain inlets, retention basins, stormwater pump stations, and urban detention (water quality) basins. The project site will be within the service area, and the proposed project will eventually connect to the Community's drainage system.

Regulatory Setting

Clean Water Act: The Clean Water Act (CWA) is enforced by the U.S. EPA and was developed in 1972 to regulate discharges of pollutants into the waters of the United States. The Act made it unlawful to discharge any pollutant from a point source into navigable waters unless a National Pollution Discharge Elimination System (NPDES) Permit is obtained.

National Flood Insurance Act: The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

California Water Quality Porter-Cologne Act: California's primary statute leading water quality and water pollution concerns with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the nine Regional Water Quality Boards (RWQCB) power to protect water quality and further develop the Clean Water Act within California. The applicable RWQCB for the proposed project is the Central Valley RWQCB.

Central Valley RWQCB: The proposed project site is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB requires a National Pollution Discharge Elimination System (NPDES) Permit and Stormwater Pollution Prevention Plan (SWPPP) for projects disturbing more than one acre of total land area. Because the project is greater than one acre, a NPDES Permit and SWPPP will be required.

Mid-Kings River Groundwater Sustainability Agency: The Tulare Lake Subbasin is divided into five Groundwater Sustainability Agencies (GSA). The Armona Community Services District and the project site is within the Mid-Kings River GSA (MKR GSA). The MKR GSA is approximately 152 square miles and includes the Kings County Water District, the City of Hanford, and other smaller communities and irrigation companies. The MKR GSA serves approximately 60,000 people and many agricultural uses.

Mid-Kings River Groundwater Sustainability Plan: The MKR GSA has identified that the service area is over drafting groundwater by approximately 28,000-32,000 acre feet per year (AFY). To counter this, the GSA has the following plans and objectives:

- **New Recharge Basins:** The MKR GSA believes that an additional 1,500 acres of recharge basins need to be developed and believes this would be the most effective way to counter the over drafting.
- **Partnership with Kings County Water District**: The Kings County WD plans to develop roughly 500 acres of recharge basins. A partnership with the Kings County WD can help facilitate the overall goal of 1,500 acres.
- **System Improvements:** Current efforts to improve the system are to optimize the diversion capacities of the existing recharge basins and remove restrictions on existing canals to allow greater flows.
- **Conservation Measures:** The MKR GSA is attempting to convert local growers into more efficient irrigation systems to reduce the amount of water lost to evaporation and past the root zone.
- **Voluntary Fallowing:** The MKR GSA is developing a plan to lease the property of row crop growers to reduce the water usage during droughts.
- **On-Farm Recharge:** The MKR GSA is seeking to partner with local growers to use the recharge capacity of existing fields.
- **Meter Requirements:** The MKR GSA can better understand the water usage if all wells, public and private, are required to use a flow meter.
- **Pumping Restrictions:** Although it is known restricting the amount of water each well can pump will cause issues, the MKR GSA will consider this if other strategies fail to counter the over drafting.

2035 Kings County General Plan: The Health and Safety Element (HS) and Resource Conservation (RC) Element of the County of Kings General Plan contains the following flood control and water use policies that are potentially applicable to the proposed project:

HS Objective A4.1: Direct new growth away from designated flood hazard risk areas and regulate new development to reduce the risk of flood damage to an acceptable level. an acceptable level.

- HS Policy A4.1.4: Direct new urban growth to existing cities and community districts, or away from New Community Discouragement Areas to avoid flood hazard areas and increased risk to people and property.
- HS Policy A4.1.6: New development shall provide onsite drainage or contribute towards their fair share cost of off-site drainage facilities to handle surface runoff.

RC Objective A1.4: Protect the quality of surface water and groundwater resources in accordance with applicable federal, state and regional requirements and regulations.

- RC Policy A1.4.3: Require the use of feasible and cost-effective Best Management Practices (BMPs) and other measures designed to protect surface water and groundwater from the adverse effects of construction activities and urban and agricultural runoff in coordination with the California Water Quality Control Board, Central Valley Region.
- RC Policy A1.6.1: Require subdivisions with lot sizes of less than one acre to connect to the sewer and water services of a city or community district.

Armona Community Plan: The Armona Community Plan includes the following objectives and policies which mitigate potential impacts related to water quality:

ACP Objective 5B.1: Establish a diverse series of site hydrologic functions to receive and detain storm water runoff.

- ACP Policy 5B.1.1: Require new development to integrate onsite stormwater drainage features to increase the storm water detention throughout the community.
- ACP Policy 5B.1.2: Integrate stormwater detention basins into the design of parks, parkways, medians, and other open space areas to serve as dual purpose facilities.
- ACP Policy 5B.1.3: New stormwater drainage facilities established by new developments shall be required to establish a County Service Area or District Zone of Benefit that is supported by benefiting property assessments.

Discussion

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant Impact with Mitigation: The project will result in less than significant impacts to water quality due to potentially polluted runoff generated during construction activities. Construction may include excavation, grading, and other earthwork across most of the 20.08-acre project site. During storm events, exposed construction areas across the project site may cause runoff to carry pollutants, such as chemicals, oils, sediment, and debris. Implementation of a Stormwater Pollution Prevention Plan (SWPPP) will be required for the project. A SWPPP identifies all potential sources of pollution that could affect stormwater discharges from the project site and identifies best management practices (BMPs) related to stormwater runoff. As such, implementation of Mitigation Measures HYD- 1 and HYD-2 will ensure impacts remain *less than significant with mitigation incorporated.*

Mitigation Measures for Hydrology and Water Quality

Mitigation Measure HYD-1: Prior to the issuance of any construction/grading and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project site to the California SWRCB Storm Water Permit Unit.

Mitigation Measure HYD-2: The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the County 45 days prior to the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. A SWPPP for site construction shall be developed prior to the initiation of grading and implemented for all construction activity on the Project site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to storm water and shall include specific BMPs to control the discharge of material from the site. The following BMP methods shall include, but would not be limited to:

- Dust control measures will be implemented to ensure success of all onsite activities to control fugitive dust;
- A routine monitoring plan will be implemented to ensure success of all onsite erosion and sedimentation control measures;

- Provisional detention basins, straw bales, erosion control blankets, mulching, silt fencing, sand bagging, and soil stabilizers will be used;
- Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours prior to and during extreme weather conditions; and,
- BMPs will be strictly followed to prevent spills and discharges of pollutants onsite, such as material storage, trash disposal, construction entrances, etc.

b) **Would the project substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

Less than Significant Impact: Water services will be provided by the Armona Community Services District upon development.

The Community has one active well, with two additional wells used as an emergency backup. This active well has the capacity to pump an average of 1,000 gallons of water per minute, about 1.4 million gallons per day (MGD) or 511 million gallons per year (MGY). The other two wells are used for backup during the summer months. The current water supply is only sufficient for the current population, approximately 140.351 MGY. However, the ACSD is willing to drill more wells as the population grows. ACSD's Capital Facilities Plan includes the provision of new wells and additional water storage capacity to accommodate potential housing sites as identified in the existing General Plan Housing Element.

Using average per-person water use in the Armona Community (187 gallons, including commercial and industrial uses; County of Kings General Plan) and the average household size in the Armona Community (3.68 persons; US Census Bureau), water demand for the proposed 109-unit residential development is estimated to be approximately 75,009 gallons of water daily, which is approximately 27.4 MGY or 84-acre feet per year (AFY). With an expected available supply of 370.1 MGY, there will be enough water supply for the proposed project. The Project is consistent with the County's General Plan land use designation. As such, the Project would not affect groundwater supplies beyond what has already been analyzed in the most current General Plan EIR.

The project would result in the nearly full development of the site, which would convert approximately 20.02 acres from pervious surfaces to impervious surfaces. However, this would not significantly interfere with groundwater recharge because all stormwaters would be collected and diverted to a new stormwater basin located in the Southwest area of the project site for groundwater recharge. Because the addition of impervious surfaces would not interfere substantially with groundwater recharge and the project would not utilize groundwater resources beyond what has been previously analyzed in the County's General Plan EIR, the impact would be *less than significant.*

c) Would the project 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:

i. Result in substantial erosion or siltation on- or off-site?

Less than Significant with Mitigation Incorporated: The proposed project would result in the addition of impervious surfaces and alter existing drainage patterns on the 20.02-acre project site which would have the potential to result in erosion or siltation on- or off-site. The disturbance of soils during construction could cause erosion, resulting in temporary construction impacts. However, this impact would be appropriately mitigated through implementation of a Stormwater Pollution Prevention Plan (SWPPP) which include mandated erosion control measures, which are developed to prevent significant impacts related to erosion caused by runoff during construction (Mitigation Measure HYD-1). The Project proponent will also be required to prepare drainage plans (Mitigation Measure HYD-2) to ensure that existing drainage patterns are maintained during project operations and that that

the project would not result in substantial erosion or siltation on- or off-site. The impact is *less than significant with implementation of these mitigation measures.*

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

Less than Significant with Mitigation Incorporated: The proposed project would result in the addition of impervious surfaces on the 20.02-acre project site which would have the potential to increase surface runoff resulting in flooding on- or off-site. This impact would be appropriately mitigated through implementation of Mitigation Measure HYD-2, which requires the project to submit drainage plans to the County Engineer prior to the issuance of any permits, as well as Mitigation Measure H-1(a), which requires the development design to have limited runoff. The drainage plans will include BMPs to ensure runoff from the project will not result in flooding on- or off-site. Therefore, impacts are *less than significant with mitigation incorporated.*

Mitigation Measures for Impacts to Water Quality Resources Incorporated from County PEIR

H-1(a) Low Impact Development (LID). Future development pursuant to the 2035 Kings County General Plan shall incorporate LID principals into the project design to minimize long-term stormwater runoff. Such principles shall include:

- Permeable paving, such as pavers, porous concrete, or pathway comprised of decomposed granite that is effective in stormwater infiltration to help prevent excess runoff.
- Use of "urban bio-swales" to redirect stormwater into planter strips, rather than capturing runoff in pipes and diverting it to a remote location.
- Use of water efficient irrigation (e.g., drip irrigation system) to water trees, shrub beds, and areas of groundcover to eliminate evaporation losses and minimize runoff.
- Use of predominately (75 percent) native plants and drought-tolerant landscaping wherever possible.

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant with Mitigation Incorporated: The proposed project would result in the addition of impervious surfaces and alter existing drainage patterns on the 20.02-acre project site which would have the potential to impact existing stormwater drainage systems or provide additional sources of polluted runoff. The proposed project would contain a storm drainage basin to collect all runoff from the site. The disturbance of soils during construction could cause erosion, resulting in temporary construction impacts. However, this impact would be appropriately mitigated through implementation of a Stormwater Pollution Prevention Plan (SWPPP) which include mandated erosion control measures, which are developed to prevent significant impacts related to erosion caused by runoff during construction (Mitigation Measure HYD-1). During project operations, the proposed impervious surfaces, including roads, building pads, and parking areas, would collect automobile derived pollutants such as oils, greases, rubber, and heavy metals. This could contribute to point source and non-point source pollution if these pollutants were transported into waterways during storm events. The Project proponent will be required to prepare drainage plans (Mitigation Measure HYD-2) to ensure that the project would not overwhelm the planned stormwater drainage basin or

result in discharges of polluted runoff into local waterways. The impact is *less than significant with mitigation measures incorporated.*

iv. Impede or redirect flood flows?

Less than Significant with Mitigation Incorporated: The Project site is generally flat and no significant grading or leveling will be required. The proposed project site is not in proximity to a stream or river and will not alter the course of a stream or river. According to National Flood Hazard mapping by the Federal Emergency Management Agency, the proposed project site is not located within a 100-year flood hazard area. The proposed project would result in the addition of impervious surfaces on the 20.02-acre project site which could affect drainage and flood patterns. This impact would be appropriately mitigated through implementation of Mitigation Measure HYD-2, which requires the project to submit drainage plans to the County Engineer prior to the issuance of any permits. The drainage plans will include BMPs to ensure the project would not impede or redirect flood flows. Therefore, impacts are *less than significant with mitigation incorporated.*

d) Would the project, in flood hazard, tsunami, or seiche zones, risk the release of pollutants due to project inundation?

No Impact: The proposed project is located inland and not near an ocean or large body of water, therefore, would not be affected by a tsunami. The proposed project is in a relatively flat area and would not be impacted by inundation related to mudflow. Since the project is in an area that is not susceptible to inundation, the project would not risk release of pollutants due to project inundation. As such, there is *no impact.*

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact: The project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. The proposed project is consistent with the Mid Kings River GMP and the Central Valley RWQCB. The project will comply with all applicable rules and regulations regarding water quality and groundwater management and there is *no impact.*

XI. LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

Environmental Setting

The proposed project site is in the Armona Primary Sphere of Influence, just outside the community limits. The site is approximately 0.3 miles Northeast of the Armona downtown, and approximately 3 miles West of the Hanford Downtown. The site is zoned R-1-6 by the County of Kings Development Code and is designated as Medium Density Residential by the Armona Community Plan. The Project involves no rezoning or General Plan amendments.

The site currently contains one single-family rural residence and agriculture uses. The site is topographically flat and is bounded by agricultural uses to the North, East, and West and single-family residential development to the South.

Regulatory Setting

Armona Community Plan. The proposed project site is designated as Medium Density Residential by the Armona Community Plan. The Medium Density residential designation is intended for single family residential uses on smaller lots (4-7 dwelling units/acre). The goal of the Medium Density Residential is to concentrate growth within the community, increase investment in Armona's centralized and walkable community design, and preserve farmland. No change would be needed to the Community Plan.

Kings County Development Code: The proposed project site is designated as R-1-6 by the Kings County Development Code. The R-1-6 zone district is intended to provide living areas within the County where development is limited to concentrations of single-family dwellings and where regulations are designed to accomplish the following:

- promote and encourage a suitable environment for family life
- provide space for community facilities needed to complement urban residential areas and for institutions which require a residential environment
- to minimize traffic congestion
- avoid the overloading of utilities and public facilities designed to service primarily single-family residential uses in accordance with density standards of the General Plan
- facilitate the production of affordable housing
-

The R-1-6 zone supports minimum lot sizes of 6,000 sf but can be reduced with a density bonus.

2035 Kings County General Plan: The following goals and policies in the County of Kings General Plan are applicable to the project site's residential land use designation:

Land Use Element (LU)

LU Objective D1.1: Accommodate future urban growth within the Community Districts by establishing Community Plans that are developed with community resident and stakeholder input.

- LU Policy D1.1.2: Community Plans shall designate a variety and distribution of urban type land uses that include residential, commercial, industrial, open space and other public land uses that can accommodate future projected unincorporated growth.

LU Objective D1.2: Establish Community Plan land use policies and associated improvement standards to integrate smart growth principles and compact urban design to revitalize existing communities.

- LU Policy D1.2.2: Prioritize infill development of vacant and underutilized parcels within the existing special district boundaries where water and sewer service are available to reduce outward growth pressure and costly expansion of district facilities.

Circulation Element (C)

C Objective B1.2: Enhance pedestrian/bicycle access and safety through traffic calming street design measures and bicycle rack integration into new commercial structures.

- C Policy B1.2.1: Adopt traffic calming street design standards into the County's "Improvement Standards" to make available "Pedestrian Friendly" street design alternatives along Community District streets.

County of Kings Housing Element: The 2016-2024 General Plan Housing Element includes the following goals and policies which seek to provide a wide range of well-designed housing choices in every community.

Goal 1: Improve and maintain the quality of housing and residential neighborhoods.

- Policy 1.1 Promote and improve the quality of residential properties by ensuring compliance with housing and property maintenance standards.

Goal 2: Facilitate and encourage the provision of a range of housing types and prices to meet the diverse needs of residents.

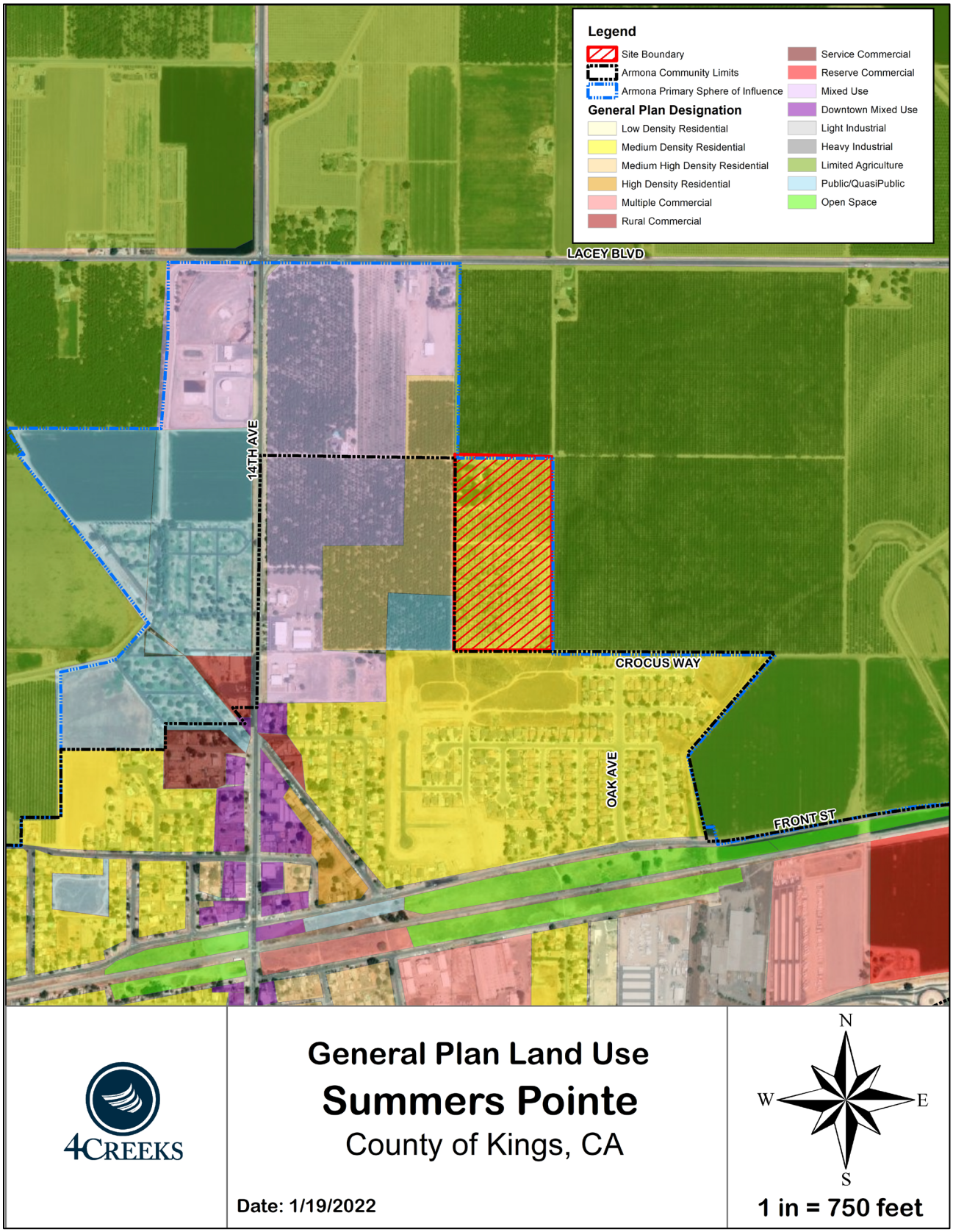


Figure 1-6: General Plan Land Use Designation

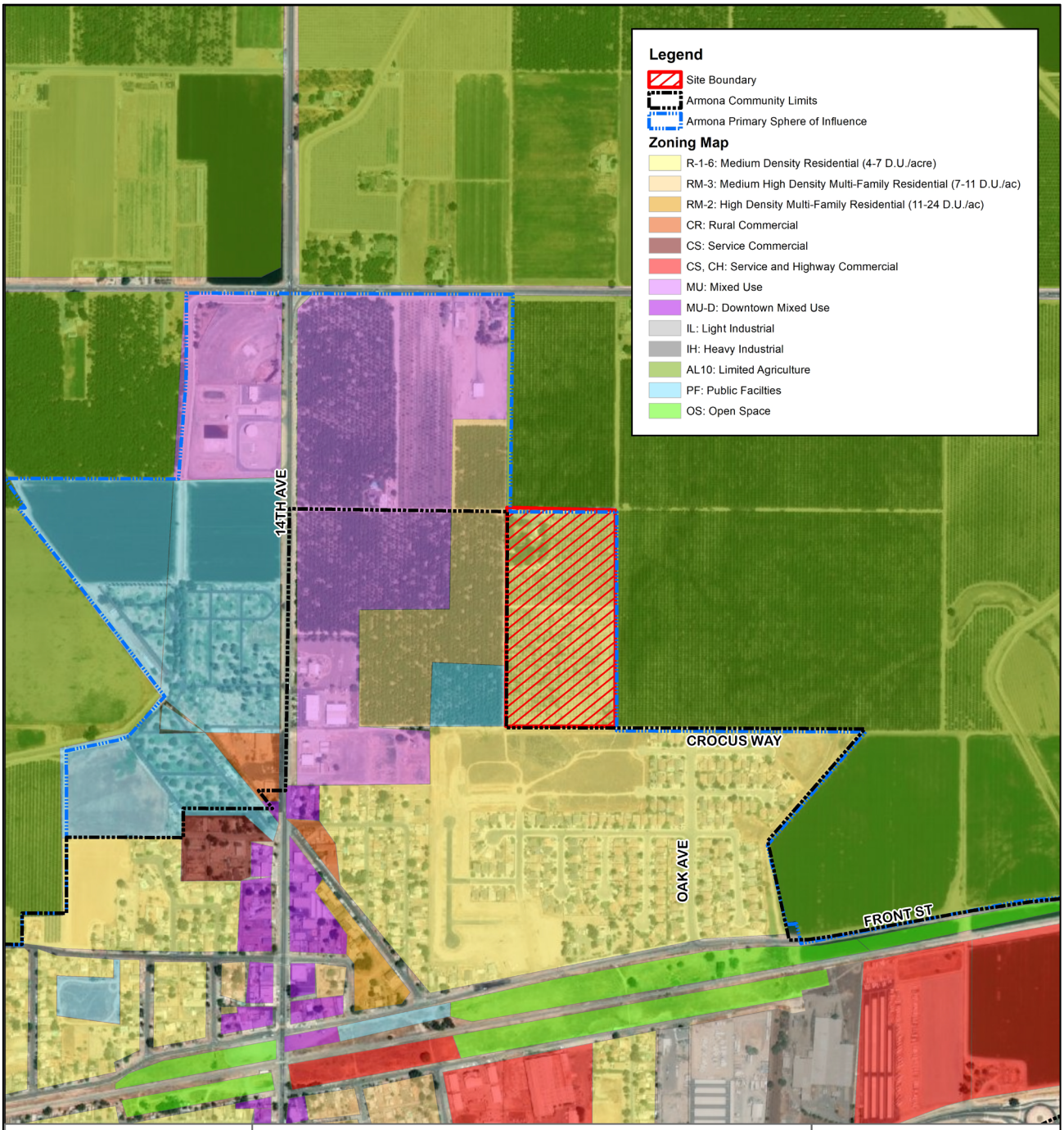


Figure 1-7: Zoning Map

Discussion

a) Would the project physically divide an established community?

No Impact: The proposed project will not physically divide an established community. The proposed project site is designated for Medium Density under the City's General Plan and R-1-6 zoning under the Kings County Development Code and would continue to operate as the same designation following project implementation. There is *no impact.*

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact: The project site is located on land designated for residential use. The proposed project does not conflict with this land use, or any other policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect. There is *no impact.*

XII. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b) Result in the loss of availability of a locally - important mineral resource recovery site delineated on a local general plan, specific plan or other lands use plan?	☐	☐	☐	☑

Environmental Setting

According to the Resource Conservation Element of the Kings County General Plan, there are currently no mineral extraction activities occurring within the County. The California Division of Mines and Geology has not identified any significant mineral resources within the County. Oil and gas resources have been identified in and extracted from portions of the County.

The principal active petroleum resource fields include the Pyramid Hills, Kettleman Middle and North Dome, Tulare Lake oil fields, and the Harvester gas field. The nearest field to the project site is the Tulare Lake oil fields, approximately 20 miles South of the project site. Additionally, Riverdale Oil field is approximately 12 miles Northwest of the project site in Fresno County.

Regulatory Setting

California State Surface Mining and Reclamation Act: The California State Surface Mining and Reclamation Act was adopted in 1975 to regulate surface mining to prevent adverse environmental impacts and to preserve the state's mineral resources. The Act is enforced by the California Department of Conservation's Division of Mine Reclamation.

2035 Kings County General Plan: The Resource Conservation Element of the County's General Plan contains the following objectives and policies related to mineral resources.

RC Objective H1.1: Provide for the development of mining and mineral extraction.

- RC Policy H1.1.1: Implement the Surface Mining and Reclamation Act by requiring all mining operations, including surface mining, to secure a Conditional Use Permit, pursuant to the Kings County Zoning Ordinance, prior to beginning any mining operation.
- RC Policy H1.1.2: All surface mines, unless otherwise exempted, shall be subject to reclamation plans that meet the requirements of the Kings County Surface Mining and Reclamation Act Ordinance (Article 17 Kings County Code of Ordinance) and the State Surface Mining and Reclamation Act (SMARA) requirements. Reclamation procedures shall restore the site for future beneficial use of the land. Mine reclamation costs shall be borne by the mine operator and guaranteed by financial assurances set aside for reclamation procedures.

RC Objective H1.2: Ensure that mineral extraction operations are designed, located and operated so that they do not harm humans or the natural environment or are incompatible with surrounding land uses.

- RC Policy H1.2.1: Discourage the location of mining operations near residential areas and other sensitive land uses unless all impacts to such uses can be mitigated.
- RC Policy H1.2.2: Minimize the adverse effects on environmental resources such as water quality and quantity, air quality, drainage and flood control, geophysical characteristics, biological resources, and aesthetic factors.

Discussion

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact: The project site has no known mineral resources that would be of a value to the region and the residents of the state, therefore the proposed project would not result in the loss of or impede the mining of regionally or locally important mineral resources. There is *no impact.*

b) Would the project result in the loss of availability of a locally - important mineral resource recovery site delineated on a local general plan, specific plan or other lands use plan?

No Impact: There are no known mineral resources of importance to the region and the project site is not designated under the Community Plan or County's General Plan as an important mineral resource recovery site. For that reason, the proposed project would not result in the loss of availability of known regionally or locally important mineral resources. There is *no impact.*

XIII. NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permeant 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) Generation of excessive ground-borne 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 public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

Environmental Setting

Noise is often described as unwanted sound. Sound is the variation in air pressure that the human ear can detect. If the pressure variations occur at least 20 times per second, they can be detected by the human ear. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Ambient noise is the "background" noise of an environment. Ambient noise levels on the proposed project site are primarily due to agricultural activities and traffic. Construction activities usually result in an increase in sound above ambient noise levels.

Sensitive Receptors: Noise level allowances for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hotels/motels, hospitals, schools, and libraries are some of the most sensitive land uses to noise intrusion and therefore have more stringent noise level allowances than most commercial or agricultural uses that are not subject to impacts such as sleep disturbance.

Regulatory Setting

2035 Kings County General Plan: The County of Kings General Plan Noise Element provides noise level criteria for land use compatibility for both transportation and non-transportation noise sources. The Noise Element of the 2035 Kings County General Plan contains the non-transportation noise standards for the unincorporated area of the county in Table 1-13. The standards are shown in Leq and Lmax. Leq is continuous dB, and Lmax is maximum allowed dB. For Single Family Residential, the exterior noise

during the daytime is to be below 75 Lmax, and the indoor noise during the daytime is to be below 55 Lmax.

Table N-8 Non-Transportation Noise Standards
Average (Leq) / Maximum (Lmax)[1]

Receiving Land Use	Outdoor Area[2] Daytime	Outdoor Area[2] Nighttime	Interior[3] Day & Night	Notes
All Residential	55 / 75	50 / 70	35 / 55	
Transient Lodging	55 / 75	---	35 / 55	4
Hospitals & Nursing Homes	55 / 75	---	35 / 55	5, 6
Theaters & Auditoriums	---	---	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	---	35 / 60	6
Office Buildings	60 / 75	---	45 / 65	6
Commercial Buildings	55 / 75	---	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	---	---	6
Industry	60 / 80	---	50 / 70	6

Notes:
1. The Table N-8 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of Table N-8, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
2. Sensitive areas are defined acoustic terminology section.
3. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
5. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
6. The outdoor activity areas of these uses (if any), are not typically utilized during nighttime hours.

Table 1-13: County of Kings Non-Transportation Noise Standards. Source: County of Kings 2035 General Plan

The County of Kings General Plan addresses noise and vibration within the Noise (N) Element. The following noise related policies are applicable to the proposed project:

- N Policy A1.1.1: Appropriate noise mitigation measures shall be included in a proposed project design when the proposed new use(s) will be affected by traffic or railroad noise sources and exceed the County's "Noise Standards for New Uses Affected by Transportation Noise Sources" (Table N-7). Mitigation measures shall reduce projected noise levels to a state of compliance with this standard.
- N Policy B1.1.1: Appropriate noise mitigation measures shall be included in a proposed project design when the proposed new use(s) will be affected by or include non-transportation noise sources and exceed the County's "Non-Transportation Noise Standards" (Table N-8). Mitigation measures shall reduce projected noise levels to a state of compliance with this standard within sensitive areas. These standards are applied at the sensitive areas of the receiving use.

- N Policy B1.1.3: Noise associated with construction activities shall be considered temporary but will still be required to adhere to applicable County Noise Element standards.
- N Policy C1.1.2: Where noise mitigation measures are required to satisfy the noise level standards of this Noise Element, emphasis shall be placed on the use of setbacks and site design, prior to consideration of the use of noise barriers.

Discussion

a) Would the project result in generation of a substantial temporary or permeant 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?

Less than Significant Impact: Project construction is anticipated to last approximately 21 months and will involve temporary noise sources in the vicinity of the project. The average noise levels generated by construction equipment that will likely be used in the proposed project are provided in Table 1-14.

The single-family homes to the Southeast are the nearest sensitive receptors to the Project Site. The nearest residence is approximately 230 feet from the Project Site. The County requires that mitigation measures be implemented if noise levels exceed 75 dB in sensitive outdoor areas or if interior noise levels exceed 55 dB (Lmax). As shown in Figure 1-8, it was found that a residence must be at least 160 feet from construction to avoid noise levels exceeding these thresholds.

There are no residences or other sensitive receptors within 160 feet of the proposed project. The nearest agricultural residence is approximately 230 feet from the Project Site. From this distance, the maximum exterior noise level is 72 dBA, and the maximum interior noise level is 47 dBA (Table 1-14). Therefore, noise generated by construction activities would not exceed thresholds established by Kings County for sensitive receptors. Additionally, noise-producing construction activities will be limited to daytime hours and the project will comply with all County ordinances regarding construction-related noise levels and noise-generating equipment.

Long term noise levels resulting from the project would include single family residential homes, which are not normally associated with high operational noise levels. Because noise generated during project construction would be intermittent, short term, and would not exceed the thresholds established by Kings County for sensitive receptors and the project does not propose uses that would typically generate high noise levels, the impact is *less than significant*.

Type of Equipment	Exterior Lmax at 50 feet (dBA)	Calculated Lmax at 230 feet (dBA)	
		Exterior	Interior
Tractors	84	71	46
Loaders	80	67	42
Backhoes	80	67	42
Excavators	85	72	47
Generator Sets	82	69	44
Air Compressors	80	67	42
Rubber Tired Dozers	85	72	47
Forklifts	75	62	37
Welders	73	60	35
Graders	85	72	47
Scrapers	85	72	47
Cranes	85	72	47
Paving Equipment	85	72	47
Rollers	85	72	47

Table 1-14. Noise levels of noise-generating construction equipment at various distances. Source: Federal Highway Administration Construction Noise Handbook (dBA at 50 feet). Noise levels beyond 50 feet were estimated using the inverse square law based on given values for dBA at 50 feet.

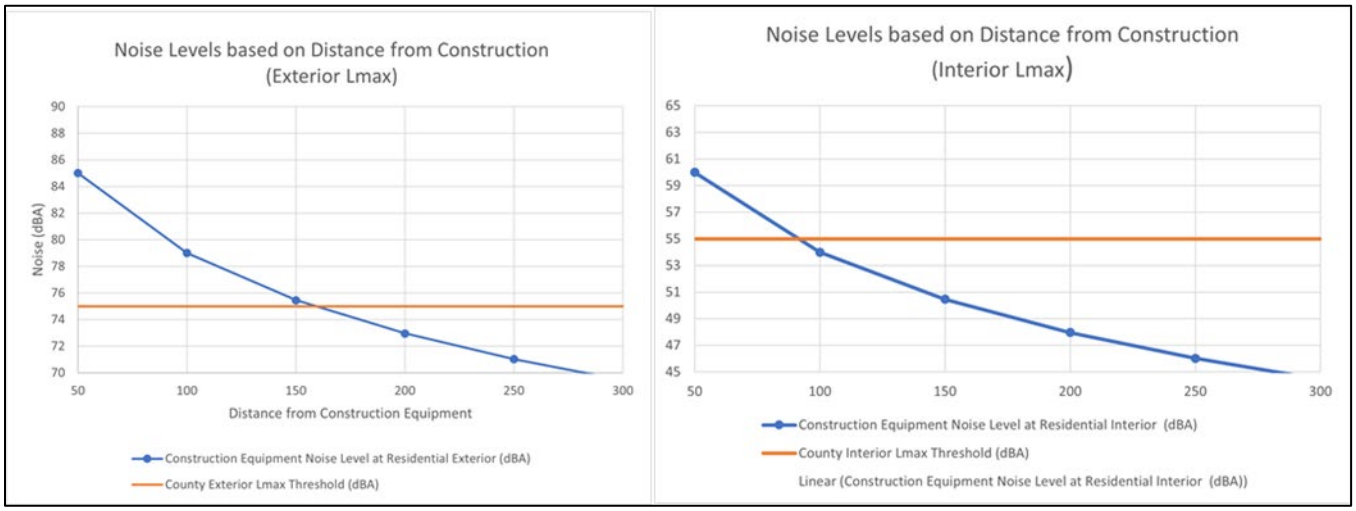


Figure 1-8: Construction Related Noise Levels Based on Distance from Construction Equipment. Interior Noise Assume 25 dB Exterior to Interior Noise Reduction

b) Would the project result in generation of excessive ground-borne vibration or groundborne noise levels?

Less than Significant Impact: Although project operations would not include uses or activities that typically generate excessive groundborne vibration or groundborne noise levels, project construction

could introduce temporary groundborne vibration to the project site and the surrounding area. Sources that may produce perceptible vibrations are provided in Table 1-15.

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level (LV) at 25 feet
Pile driver (impact)	1.518 (upper range) 0.644 (typical)	112 104
Pile driver (sonic)	0.734 upper range 0.170 typical	105 93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall)	0.008 in soil 0.017 in rock	66 75
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Table 1-15. Vibration Levels Generated by Construction Equipment. Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, September 2018.

The primary source of vibration during project construction would likely be from a bulldozer (tractor), which would generate 0.089 inch per second PPV at 25 feet with an approximate vibration level of 87 VdB. Vibration from the bulldozer would be intermittent and not a source of continual vibration. There are no adopted County standards or thresholds of significance for vibration. The evaluation of potential impacts related to construction vibration levels is based on the published data in the 2018 FTA Guidelines. At 25 feet, the buildings most susceptible to vibration could be impacted at .12 inch/second. Because vibrations generated by project construction would not exceed 0.12 inch/second, the impact is *less than significant.*

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 public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact: Kings County does have an Airport Land Use Compatibility Plan; however, the Project Site is not within an area covered by an airport land use plan and is not included within any Compatibility Maps for any public airport or public use airport. The proposed project is not located within an airport land use plan, within the vicinity of a private airstrip, or within two miles of a public airport. There is *no impact*.

XIV. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Environmental Setting

The United States Census Bureau stated the population in the County of Kings to be 152,486 as of April 2020. This is a slight decrease from the 2010 census, which counted the population in the County of Kings to be 152,982. The Armona community had a population of 4,274 in 2020. This is an increase from the 2010 population of 4,156. Factors that influence population growth in Armona include job availability, housing availability, and the capacity of proposed and existing infrastructure.

Regulatory Setting

The County of Kings and Armona community population size is controlled by the Kings County Development Code and Housing Element of the General Plan. These documents regulate the number of dwelling units per acre allowed on various land uses and establish minimum and maximum lot sizes, which has a direct impact on the Armona community population size.

County of Kings 2016-2024 Housing Element: The County of Kings Housing Element addresses population and housing. The following population and housing related policies are applicable to the proposed project:

- Policy 3.1: Offer regulatory and/or financial incentives, as available and appropriate, to encourage the construction of quality housing.
- Policy 3.3: Utilize planned developments and other creative mechanisms to facilitate the construction of more creative, well-designed, housing projects.

Discussion

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact: The United States Census Bureau stated the population in the Armona community to be 4,274 as of April 2020. The project proposes to construct 109 new single family residential units. The US Census Bureau states that the City's average household size is 3.68 persons. Based on this average household size, the anticipated population increase because of the proposed project is 401 persons. The construction of housing at this location would not be unplanned, as the County's General Plan designated the proposed project site for medium density residential and is zoned R-1-6, single family residential. Additionally, the community is planning for more businesses, services, and infrastructure to accommodate the new population. Overall, the project will not constitute an unplanned increase in growth and population. There is *no impact.*

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact: The project would not displace any existing housing. There is one existing house on the site which will not be removed. Overall, this project will increase the amount of available housing in the community. There is *No Impact*.

XV. PUBLIC SERVICES

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable serve ratios, response times of other performance objectives for any of the public services:				
a. Fire protection?	☐	☐	☑	☐
b. Police protection?	☐	☐	☑	☐
c. Schools?	☐	☐	☑	☐
d. Parks?	☐	☐	☑	☐
e. Other public facilities?	☐	☐	☑	☐

Environmental Setting

Fire: The Armona community and project site is served by the Kings County Fire Department which operates 12 fire stations within the County of Kings. The Kings County Department will continue to provide fire protection services to the proposed project site following project implementation. Kings County Fire Station #5 serves the Armona community and is located approximately .75 miles South of the proposed project site.

Police: Law enforcement services are provided to the project site via the Kings County Sheriff's Department. The Kings County Sheriff's Department will continue to provide police protection services to the proposed project site following project implementation. The Kings County Sheriff's Department is located approximately 2.1 miles East of the proposed project site in Hanford. There is a substation located in Armona, but it is currently closed due to budget constraints.

Schools: The proposed project site is located within the Armona Union Elementary School District for kindergarten through 8th grade and the Hanford Joint Union High School for 9th to 12th grade. The nearest school is approximately .60 miles South of the project site (Parkview Middle School).

Regulatory Setting

2035 Kings County General Plan: The Health and Safety Element (HS) and the Land Use Element (LU) of the County of Kings General Plan addresses public services. The following public services related policies are applicable to the proposed project:

- HS Policy C2.2.3: Use the 1997 Uniform Code for the abatement of Dangerous Buildings. All new structures to be occupied shall be built to current Fire Code Standards.
- LU Policy D1.4.7: Refer any development proposal for five or more residential units which may have a direct or indirect impact on school facilities to the affected school district for review and comment.
- LU Policy D1.4.8: Development shall pay school district impact fees, pursuant to Section 65995.(b) of the California Government Code, at the time a building permit is issued to finance the construction of school facilities made necessary by the development.

Armona Community Plan: The Armona Community Plan includes the following policies which would reduce potential impacts to public services within Armona:

ACP Objective 7A.1: Provide sufficient law enforcement to protect residents from personal and property crimes.

- ACP Policy 7A.1.1: Promote community safety by providing sufficient sheriff patrol coverage to provide 20 minute or faster response time to priority emergency calls.

ACP Objective 7B.1: Expand the Fire Department Station personnel and equipment as the community grows to maintain the current level of service.

- ACP Policy 7B.1.1: Fire Department services shall increase as the Armona population grows in order to maintain existing levels of service.
- ACP Policy 7B.1.2: Adequate water supply shall be maintained throughout the Armona fire hydrant system.

Discussion

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable serve ratios, response times or other performance objectives for any of the public services:

a. Fire protection?

Less than Significant Impact: The Kings County Fire Department will provide fire protection services to the proposed development. The closest fire station is Kings County Fire Station #5, located .75 miles South of the project site at 11235 14th Ave. The Fire Department uses the National Fire Protection Association (NFPA) standard for fire protection services, which requires 1.2 firefighters per 1,000 residents. The addition of 109 residential units will increase the demand for fire protection services. The county currently has .64 firefighters per 1,000 residents. By 2035, the county expects growth that could result in .21 firefighters per 1,000 residents. This will require an additional 86 on-duty full time firefighters by 2035. The Armona Community would require an additional 9 firefighters by 2035. However, the existing fire stations are placed to provide optimum service, so no new stations will be needed. To support the expansion of fire services, a development impact fee per dwelling unit will be paid to offset any potential impacts to existing fire department facilities and services.

The timing of when new fire service facilities would be required or details about size and location cannot be known until such facilities are planned and proposed, and any attempt to analyze impacts to a potential future facility would be speculative. As new or expanded fire service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review in order to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant.*

b. Police protection?

Less than Significant Impact: The Kings County Sheriff's Department will provide services to the proposed development. The Kings County Sheriff's Department is located approximately 2.1 miles East of the proposed project site. The development would increase the demand for police service with the addition of 109 residential units. The Sheriff Department's goal is to provide one deputy per 1,000 residents. Currently, the department provides 0.4 deputies per 1,000 residents. By 2035, the county expects growth that could result in .25 deputies per 1,000 residents. To meet the counties' goal 33 additional deputies would need to be hired by 2035. However, adequate facilities exist to accommodate additional deputies, but funding is not available to provide them. The shortage and the additional demand will be compensated by a development impact fee of per dwelling unit to offset any potential impacts to existing sheriff department facilities.

The timing of when new police service facilities would be required or details about size and location cannot be known until such facilities are planned and proposed, and any attempt to analyze impacts to a potential future facility would be speculative. As new or expanded police service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review in order to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant*.

c. Schools?

Less than Significant Impact: The proposed project is within the Armona Union Elementary School District for kindergarten through 8th grade and the Hanford Joint Union High School for 9th to 12th grade. The County of Kings predicts the generation rates are 0.55 students per household for kindergarten through 8^{th} and 0.18 students per household for 9^{th} through 12^{th} grade. Since the proposed project includes the addition of 109 single-family residential units, the number of students will increase by approximately 80. The proposed project site is located within the Community limits and therefore, growth associated with the Project has been planned and expected. In addition to the goals and policies of the County General Plan, future development is required by state law to pay development impact fees to the school districts at the time of building permit issuance. These impact fees are used by the school districts to maintain existing and develop new facilities, as needed. Therefore, the impact is *less than significant.*

d. Parks?

Less than Significant Impact: The addition of 109 new residential units would result in more use at existing parks. Parks within a half-mile to one-mile radius that would service the proposed development include Hood Park. Since the project would not lower the existing level of services

for parks, and the proposed project would contribute its fair share to parks facilities through in-lieu fees, the impact is *less than significant.*

e. Other public facilities?

Less than Significant Impact: The proposed project would be required to pay a development impact fee per unit for the public library. Additional development fees will be paid to offset the increased demand for public services related to transportation, water, wastewater, groundwater recharge, storm drainage, and general governmental services. Fees for transportation, water, wastewater, and general government are based on building square footage and will be calculated prior to the issuance of building permits. Fees for groundwater recharge and storm drainage are based on site acreage.

While the payment of development fees could result in the construction of new or altered public service facilities, no specific projects have been identified at this time. As new or expanded public service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review in order to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant*.

XVI. RECREATION

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	☐	☐	☐	☑

Environmental Setting

There are six regional and community park facilities totaling 130.67 acres within unincorporated Kings County. The Armona Community Service District maintains a community park. Armona currently has 3.17 acres of parkland. The County of Kings provides different types of parks and open space facilities, or park types, to meet park and open space recreation needs of the community. Park types include pocket parks, neighborhood parks, community parks, regional parks, special use parks, greenbelts/trails, and open space/natural areas. Kings County currently does not have an existing park to population ratio requirement. However, Armona's community plan has set a ratio of two acres of parkland per 1,000 residents.

Regulatory Setting

2035 Kings County General Plan: The General Plan's Open Space Element analyzes the parks and recreation facilities and establishes goals and policies for future development of the parks and recreation system. The following features of the General Plan relate to parks and recreation facilities:

- OS Policy D1.1.2: Community Plans should facilitate the development and maintenance of community park(s) within Community District areas to expand recreational resources available to residents.

Armona Community Plan: The Armona Community Plan establishes policies relating to parks and recreation:

- ACP Policy 3A.2.1: Require all new residential development located north of Hanford Armona Road to provide for the establishment of a three-and-a-half-acre park planned within the North Community Expansion Area.
- ACP Policy 3A.2.4: Require new residential development to establish an ongoing funding mechanism to support the long-term maintenance of new neighborhood park and connective pathways along open space corridors.

- ACP Policy 3A.2.5: The adopted standard for parkland acres per 1,000 individuals within the Armona Community Plan shall be 2 acres of parkland per 1,000 individuals.

Discussion

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?

Less than Significant Impact with Mitigation ncorporation: With the predicted increase in population from the Armona Community Plan, Armona would need 10.3 acres of parkland to meet the requirement of two acres of parkland per 1,000 residents. This project proposes to construct 109 new single-family homes. The US Census Bureau states that the City's average household size is 3.68 persons. Based on this average household size, the anticipated population increase because of the proposed project is 401 persons. This would equate to 0.802 acres of parkland. Implementation of the proposed project would result in increased use of existing parks and other recreational facilities. If necessary, the project site has a 1.7-acre lot dedicated to a stormwater retention basin that can be partially dedicated to park space. The impact is *less than significant with mitigation incorporated.*

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?

No Impact: The proposed project does not include any recreational facilities or require the construction or expansion of any recreational facilities that would have an adverse physical effect on the environment. There is *no impact.*

Mitigation Measures:

Mitigation Measure REC-1: Prior to recording the final map, the developer will designate a minimum of 0.802 acres of parkland on the Project site or within the Community of Armona. A cost estimate for continued maintenance of the parkland will be calculated and will be included in the project's zone of benefits.

XVII. TRANSPORTATION

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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 the CEQA guidelines Section 15064.3, Subdivision (b)?	☑	☐	☐	☐
d) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
e) Result in inadequate emergency access?	☐	☐	☐	☑

Environmental Setting

Vehicular Access: Vehicular access to the project is available via Crocus Way, with plans for future road connections. The project includes three new streets and a court that provide full access to the project site.

Parking: Each home will contain parking with a driveway, as well as available parking on the street. During construction, workers will utilize existing parking areas and/or temporary construction staging areas for parking of vehicles and equipment.

Regulatory Setting

CEQA Guidelines Section 15064.3, Subdivision (b): Criteria for Analyzing Transportation Impacts

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's

vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

County of Kings Improvement Standards: The County of Kings Improvement Standards Specifications are developed and enforced by the County of Kings Public Works Department to guide the development and maintenance of streets within the County. The cross-section drawings contained in the County's Improvement Standards dictate the development of County roads within the County.

2035 Kings County General Plan: Many agencies, including the County of Kings, utilize Level of Service (LOS) to evaluate traffic operating conditions. LOS can be used to determine where transportation improvements should be located. LOS is determined by the Average Total Daily Vehicles in Both Directions (ADT) for each type of road. Table 1-16 below lists the standards Kings County currently utilizes.

Roadway Type	Total Daily Vehicles in Both Directions (ADT)				
	Level of Service A	Level of Service B	Level of Service C	Level of Service D	Level of Service E
6-Lane Freeway	36,900	61,100	85,300	103,600	115,300
4-Lane Freeway	23,800	39,600	55,200	67,100	74,600
6-Lane Arterial	7,300	44,700	52,100	53,500	----
4-Lane Arterial (turn lanes)	4,800	29,300	34,700	35,700	----
4-Lane Collector	2,400	14,650	17,350	17,850	----
2-Lane Facility	----	4,200	13,800	16,400	16,900

Note: 1 Based upon Florida DOT Tables (2000 Highway Capacity Manual). ADT = Average Daily Traffic
2. All volumes are approximate and assume ideal roadway characteristics. Actual threshold volumes for each Level of Service listed above may vary depending on a number of factors including curvature and grade, intersection or interchange spacing, percentage of trucks and other heavy vehicles, lane widths, signal timing, on-street parking, amount of cross traffic and pedestrians, driveway spacing, etc.

Table 1-16: County of Kings LOS Standards. Source: County of Kings 2035 General Plan

The Circulation Element © of the County of Kings General Plan includes the following objectives and policies that are potentially applicable to the proposed project:

- C Policy A1.1.6: Work closely with Caltrans, Kings County Association of Governments, and the City of Hanford to develop an alternative design for the 13th Avenue and State Route 198 interchange to enhance traffic safety and accommodate future growth demands.

- C Policy A1.2.1: Coordinate land use planning with planned transportation facilities to make efficient use of the transportation system and reduce total vehicle miles traveled, vehicle emissions, and energy use through improved accessibility to schools, job centers, and commercial services.
- C Policy A1.2.3: Establish transportation related development impact fees in coordination with the City of Hanford to create a funding mechanism for construction of the alternative 13th Avenue/State Route 198 interchange design.
- C Policy A1.3.1: Maintain and manage County roadway systems to maintain a minimum Level of Service Standard "D" or better on all major roadways and arterial intersections.
- C Policy A1.3.2: Require proposed developments that have the potential to generate 100 peak hour trips or more to conduct a traffic impact study that follows the most recent methodology outlined in Caltrans Guide to the Preparation of Traffic Impact Studies.
- C Policy A1.3.3: Implement traffic operational improvements such as road widening, signals, and lanes to maximize service and efficiency.
- C Policy A1.3.5: Require new development to pay its fair share of costs for street and traffic improvements based on traffic generated and its impact to traffic levels of service.
- C Policy B1.2.1: Adopt traffic calming street design standards into the County's "Improvement Standards" to make available "Pedestrian Friendly" street design alternatives along Community District streets.
- C Policy B1.2.3: Integrate pedestrian infrastructure that includes sidewalks, tree lined streets, and traffic calming crossings to balance both car and people use of neighborhood streets in new mixed-use development.
- C Policy B1.3.1: New development shall make circulation system improvements or pay its fair share to ensure maintenance of acceptable levels of service.

Armona Community Plan: The Armona Community Plan establishes policies relating to transportation:

- ACP Policy 6A.4.1: The County shall work closely with Caltrans, KCAG and the City of Hanford to develop an alternative design for the highway interchange at 13th Avenue and State Route 198 to enhance traffic safety and accommodate future growth demands.
- ACP Policy 6A.4.3: A transportation related development impact fee shall be established in coordination with the City of Hanford to create a funding mechanism for construction of the alternative 13th Avenue/State Route 198 interchange design.

Discussion

a) Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less than Significant Impact: The 2035 Kings County General Plan determined the current LOS and projected LOS in 2035 of main roads throughout the County from a variety of sources. Notable streets near the project site are listed below in Table 1-18. Currently, all the main roads and highways in and around Armona are at an acceptable LOS. In 2035, the General Plan projects the segments of State Route 198 near Armona will exceed the acceptable LOS. 14th Avenue, Lacey Boulevard, and Houston Avenue are projected to be at an acceptable LOS in 2035.

Roadway Segment	Limits	Number of Lanes	Current ADT	Current LOS	ADT in 2035	LOS in 2035
14th Avenue	Grangeville Boulevard – Houston Avenue	2	5,880	C	3,790	B
State Route 198	Houston Avenue – 14th Avenue	4	29,000	B	67,350	E
State Route 198	14th Avenue – Hanford-Armona Road	4	32,000	B	67,710	E
Lacey Boulevard	13th Avenue – 18th Avenue	2	8,110	C	10,750	C
Houston Avenue	17th Avenue – 14th Avenue	2	9,340	C	10,170	C
Houston Avenue	14th Avenue – 12th Avenue	2	2,000	B	4,980	C

Table 1-17: Current and Future LOS of roads near Armona. Source: County of Kings 2035 General Plan

Using the trip generation rate from *Trip Generation Manual, 11th Edition*, Institute of Transportation Engineers (Table 1-18), the project is projected to generate 1,028 daily trips. Applying this number to each street segment in Armona, 14th Avenue would increase the amount of average daily trips but would maintain a C LOS. The remaining segments would remain at their projected LOS. To help improve the LOS in Armona, the project will follow C Policy A1.3.5 and pay its fair share of costs for street and traffic improvements.

Land Use	Units	Daily		A.M. Peak Hour					P.M. Peak Hour				
		Rate	Total	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Single-Family Detached Housing (210)	109	9.43	1,028	0.70	26:74	20	56	76	0.94	63:37	64	38	102

Table 1-18: Trips Generated From the Project. Source: Trip Generation Manual, 11th Edition, Institute of Transportation Engineers

The proposed project will not increase the LOS more than has been projected for in the future. Transportation development fees will be used to help reduce the LOS to an acceptable level. Overall, the project does not conflict with any program, plan, ordinance or policy related to the circulation system. There is *a less than significant impact.*

b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?

Potentially Significant Impact: The State of California Governor's Office of Planning and Research document entitled Technical Advisory on Evaluating Transportation Impacts in CEQA dated December 2018 (OPR Guidelines) provides guidance for determining a project's transportation impacts based on vehicle miles traveled (VMT). VMT measures how much actual automobile travel (additional miles driven) a proposed Project would create on California roads. If the project adds excessive automobile travel onto roads, then the project may cause a significant transportation impact. The OPR Guidelines advises "a proposed Project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita." The OPR guidelines provide screening criteria, where if the project meets any of the criteria, a VMT analysis is not required. However, the project does not meet any of the screening thresholds.

Based on the OPR's VMT requirements, all projects must limit the generation of VMT to be 15% or more below the County's average. A project that does not meet these requirements will have a significant impact. The VMT per capita of the project was calculated for existing year (2022) using the estimates from the KGAG model. While the project would be built over time, the Year 2022 analysis shows how the VMT generated by the proposed project compares to current travel and VMT characteristics in Kings County. The Traffic Analysis Zone (TAZ) that the project is in has a VMT per capita of 10.60. The County Baseline VMT is 9.6 VMT per capita. Therefore, the project would need 8.16 VMT per capita to meet the 15% below the baseline. The project is 23% over 8.16. Therefore, there is a *potentially significant impact.* Further analysis regarding potential mitigation measures will be analyzed as part of the Environmental Impact Report.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact: The project does not propose any incompatible uses or include any design features that could increase traffic hazards. The project does include two new vehicle access points via Crocus Way. This improvement will be subject to review by the County's engineer to ensure the new access point does not pose any safety risks due to project design. The proposed project would not substantially increase hazards in or around the project area there is *no impact.*

d) Would the project result in inadequate emergency access?

No Impact: This project would not result in inadequate emergency access. Emergency access to the site would be via Crocus Street. A network of drive aisles within the proposed project property provides full access to all buildings within the development. The Project would have *no impact* on emergency access.

XVIII. TRIBAL CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) 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	☐	☑	☐	☐
ii) 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.	☐	☑	☐	☐

Environmental Setting

The Project area is in the Southern Valley Yokuts ethnographic territory of the San Joaquin Valley and located between the Kings River and the north shore of Tulare Lake. The Yokuts were generally divided into three major groups, the Northern Valley Yokuts, the Southern Valley Yokuts, and the Foothill Yokuts. The Project area is within the Tachi Yokuts territory. The closest village for this area was *Waiu*, which was located on Mussel Slough approximately 6 miles southwest of the Project Site. Primary Yokuts villages were typically located along lakeshores and major stream courses, with scattered secondary or temporary camps and settlements located near gathering areas in the foothills.

Cultural Resources Record Search: A Cultural Resources Records Search was conducted by the Southern San Joaquin Valley Information Center on January 21, 2022. The records search included a review of all recorded archaeological and historical resources in the Project area and within a 0.5-mile radius of the Project. Sources consulted included archaeological site and survey base maps, historical USGS topographic maps, reports of previous investigations, cultural resource records (DPR forms) as well as listings of the

Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. The records search stated there have been six previous cultural resource studies within the project area and seven additional studies within one-half mile of the project site. According to the records search, there are no recorded cultural resources within the project area and five recorded cultural resources within a one-half mile radius. These resources are the Southern Pacific Railroad, the site of the former Armona Train Station, a historic era well/cisterns, a historic era canal, and a historic era water tower. The full findings of the cultural records search can be found in Appendix C.

Native American Consultation: The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a)(1-2)).

Additional information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

The site is currently vacant and has been routinely disturbed as part of the agricultural operations. If any artifacts are inadvertently discovered during ground-disturbing activities, existing federal, State, and local laws and regulations will require construction activities to cease until such artifacts are properly examined and determined not to be of significance by a qualified cultural resources professional.

Regulatory Setting

Historical Resources: Pursuant to CEQA, a historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources may include, but are not limited to, "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically or archaeologically significant" (PRC§5020.1[j]). In addition, a resource included in a local register of historical resources or identified as significant in a local survey conducted in accordance with the state guidelines are also considered historic resources under California Public Resources Code (PRC) Section 5020.1.

According to CEQA guidelines §15064.5 (a)(3), criteria for listing on the California Register of Historical Resources includes the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in our past.

- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history.
  According to CEQA guidelines §21074 (a)(1)(2), criteria for tribal cultural resources includes the following:
- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    - Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    - Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

Archaeological Resources: As stated above, archaeological resources may be considered historical resources. If they do not meet the qualifications under the California Public Resources Code 21084.1 or California Code of Regulations Section 15064.5, they are instead determined to be "unique" as defined by the CEQA Statute Section 21083.2. A unique archaeological resource is an artifact, object, or site that:

- Contains information (for which there is a demonstrable public interest) needed to answer important scientific research questions;
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resource (TCR): Tribal Cultural Resources can include site features, places, cultural landscapes, sacred places, or objects, which are of cultural value to a Tribe. It is either listed on or eligible for the CA Historic Register or a local historic register or determined by the lead agency to be treated as TCR.

Paleontological Resources: For the purposes of this section, "paleontological resources" refers to the fossilized plant and animal remains of prehistoric species. Paleontological Resources are a limited scientific and educational resource and are valued for the information they yield about the history of the earth and its ecology. Fossilized remains, such as bones, teeth, shells, and leaves, are found in geologic deposits (i.e., rock formations). Paleontological resources generally include the geologic formations and localities in which the fossils are collected.

Native American Reserve (NAR): This designation recognizes tribal trust and reservation lands managed by a Native American Tribe under the United States Department of the Interior's Bureau of Indian Affairs over which the County has no land use jurisdiction. The County encourages adoption of tribal management plans for these areas that consider compatibility and impacts upon adjacent area facilities and plans.

National Historic Preservation Act: The National Historic Preservation Act was adopted in 1966 to preserve historic and archeological sites in the United States. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation offices.

California Historic Register: The California Historic Register was developed as a program to identify, evaluate, register, and protect Historical Resources in California. California Historical Landmarks are sites, buildings, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, experimental, or other value. In order for a resource to be designated as a historical landmark, it must meet the following criteria:

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

2035 Kings County General Plan: The Resource Conservation Element of the County of Kings General Plan includes the following objectives and policies that are potentially applicable to the proposed project:

Resource Conservation Objective I1.1: Promote the rehabilitation or adaptation to new uses of historic sites and structures.

- RC Policy I1.1.2 Direct proposed developments that may affect proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or other similarly purposed advisory body under the Kings County Parks and Recreation Advisory Commission for review and comment.
- RC Policy I1.1.3 Encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California Inventory of Historic Resources.
- RC Policy I1.1.4 Refer applications that involve the removal, destruction, or alteration of proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or its successor for recommended mitigation measures.

Resource Conservation Objective I1.2: Identify potential archaeological and historical resources and, where appropriate, protect such resources.

- RC Policy I1.2.2 Continue to solicit input from local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American Activity and/or to sites of cultural importance.
- RC Policy I1.2.3 Address archaeological and cultural resources in accordance with the California Environmental Quality Act (CEQA) for discretionary land use applications.
- RC Policy I1.2.4 The County will respectfully comply with Government Code §65352.3 (SB18) by conducting formal consultations with tribes as identified by the Native American Heritage Commission on all general plan and specific plan amendments.
- RC Policy I1.2.5 The County will respectfully comply with Government Code §6254.(r) and 6254.10 by protecting confidential information concerning Native American cultural resources. For example adopting internal procedures such as keeping confidential archaeological reports away from public view or discussion in public meetings.
- RC Policy I1.2.6 The County shall work in good faith with the Santa Rosa Rancheria Tachi Yokut Tribe (“Tribe”), the developer and other parties if the Tribe requests return of certain Native

American artifacts from private development projects (e.g. for interpretive or educational value). The developer is expected to act in good faith when considering the Tribe's request for artifacts. Artifacts not desired by the Tribe shall be placed in a qualified repository as established by the California State Historical Resources Commission (see Guidelines for the Curation of Archaeological Collections, May 1993). If no facility is available, then all artifacts shall be donated to the Tribe.

Armona Community Plan: The Armona Community Plan contains the following policies to limit impacts to cultural resources:

- ACP Policy 4A.1.4 Preserve historical landmarks and require new development to integrate these Community valued features into the overall design of the development.
- ACP Policy 8D.1.1 New development within the Armona Community Planning Area shall be required to provide onsite monitoring for archaeological, cultural and historic remains and artifacts whenever earth moving construction activities have unearthed archaeological remains. Monitoring shall be done by an individual or firm that is found acceptable by the Tachi Yokut Tribe based at the Santa Rosa Rancheria.
- ACP Policy 8D.1.2 If any discoveries are made, construction shall immediately cease and the nature of the finding determined. The local tribe(s) as identified by the California Native American Heritage Commission shall be immediately notified and allowed the opportunity to evaluate the findings.

Discussion

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. 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

Less Than Significant Impact with Mitigation Incorporation: The project would not cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources. Based on the results of the records search, no previously recorded tribal cultural resources are located within the project site. Although no cultural resources were identified, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that impacts to this checklist item will be *less than significant with mitigation incorporation*.

ii. 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.

Less Than Significant Impact with Mitigation Incorporation: The lead agency has not determined there to be any known tribal cultural resources located within the project area. Additionally, there are not believed to be any paleontological resources or human remains buried within the project area's vicinity. However, if resources were found to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American Tribe. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that any impacts resulting from project implementation remain *less than significant with mitigation incorporation*.

Mitigation Measures for Impacts to Tribal Cultural Resources:

Mitigation Measure CUL-1:

In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project:

a. Cultural Resources Alert on Project Plans. The project proponent shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources.

b. Pre-Construction Briefing. The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and on the procedures to be enacted if resources are found.

c. Stop Work Near any Discovered Cultural Resources. The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during construction of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA.

d. Mitigation for Discovered Cultural Resources. If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist

shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.

e. Native American Monitoring. Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities during construction. Tribal participation would be dependent upon the availability and interest of the Tribe.

f. Disposition of Cultural Resources. Upon coordination with the Kings County Community Development Agency, any pre-historic archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

Mitigation Measure CUL-2: In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project:

a. Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop in the vicinity of the find and the Kings County Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD). The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(e) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

b. Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin Valley Information Center.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relation 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 adequate 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?	☐	☐	☐	☑

Environmental Setting

Wastewater: Sewer services are provided to the site by the Armona Community Services District (ACSD). The ACSD owns and operates a sewage treatment plant on the south end of town that serves almost all Armona's residents. It currently has the capacity to receive approximately 0.534 MGD. The ACSD has determined that there is currently a need for the expansion to a capacity of 0.70 to 1.0 MGD to support future populations.

Solid Waste: The Kings Waste and Recycling Authority (KWRA) receives solid waste from 13 service providers who perform solid waste collection and disposal services, including recyclable materials, for all County unincorporated areas, and the cities of Corcoran, Hanford, and Lemoore. A new landfill was opened in 2009 and is expected to support Kings County until at least 2030. In addition, a planned landfill West of Kettleman City is expected to accommodate waste generated by the County through the year 2047.

Water: The ACSD provides water to the Community, including the proposed project site. The Community has one active well, with two additional wells used as an emergency backup. This active well has the capacity to pump an average of 1,000 gallons of water per minute, about 1.4 million gallons per day (MGD) or 511 million gallons per year (MGY). The backup wells are used for backup during the summer months. The current water supply is only sufficient for the current population, approximately 140.351 MGY. However, the ACSD is willing to drill more wells as the population grows. ACSD's Capital Facilities Plan includes the provision of new wells and additional water storage capacity to accommodate potential housing sites as identified in the existing General Plan Housing Element.

Regulatory Setting

CalRecycle: California Code of Regulations, Title 14, Natural Resources – Division 7 contains all current CalRecycle regulations regarding nonhazardous waste management in the state. These regulations include standards for the handling of solid waste, standards for the handling of compostable materials, design standards for disposal facilities, and disposal standards for specific types of waste.

Central Valley RWQCB: The Central Valley RWQCB requires a Stormwater Pollution Prevention Plan (SWPPP) for projects disturbing more than one acre of total land area. Because the project is greater than one acre, a SWPPP to manage stormwater generated during project construction will be required.
The Central Valley RWQCB regulates Wastewater Discharges to Land by establishing thresholds for discharged pollutants and implementing monitoring programs to evaluate program compliance. This program regulates approximately 1500 dischargers in the region.
The Central Valley RWQCB is also responsible for implementing the federal program, the National Pollutant Discharge Elimination System (NPDES). The NPDES Program is the federal permitting program that regulates discharges of pollutants to surface waters of the U.S. Under this program, a NPDES permit is required to discharge pollutants into Water's of the U.S. There are 350 permitted facilities within the Central Valley Region.

Kings County Countywide Integrated Waste Management Plan: This plan includes source reduction, recycling, composting, special waste, and household waste programs, all of which strive to reduce overall solid waste generation. Implementation of these programs may further extend the life of existing and planned landfills that would or are expected to serve the County.

2035 Kings County General Plan: The 2035 General Plan Resource Conservation Element includes the following policies which would reduce potential impacts to water supply and infrastructure:

- RC Policy A1.2.2: Require the use of low water consuming, drought-tolerant and native landscaping and other water conserving techniques, such as mulching, drip irrigation and moisture sensors, for new development.

Armona Community Plan: The Armona Community Plan includes the following policies which mitigate potential impacts related to water quality:

- ACP Policy 8B.1.2: Coordinate with the Armona Community Services District to explore options for integrating reclaimed water usage within new growth areas.

- ACP Policy 8B.1.3: Require new residential and commercial development to integrate drought tolerant landscaping and water conservation fixtures with the structures to reduce the average per capita water use within the Community.
- ACP Policy 8B.2.1: A water service development impact fee shall be established and required of all new development within the Armona CSD to support District expansion of this service.

Discussion

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relation of which could cause significant environmental effects?

Less than Significant Impact: The proposed project would result in new water services. However, the proposed site has no change of use proposal. The ACSD is willing to provide new wells and additional water facilities as needed along with the population growth. To compensate, new development will be required to pay impact fees for new water services. It is not anticipated that implementation of the proposed project would result in increased demand for any utility services beyond the planned conditions. There is *a less than significant impact.*

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less than Significant Impact: Water services will be provided by the ACSD. The Community's water supply source is comprised of 2 groundwater wells. The current system provides 1,800 GPM, which is sufficient for the existing population only. Using average per-person daily water use in the Armona Community (187 gallons, including commercial and industrial uses; County of Kings General Plan) and the average household size in the Armona Community (3.68 persons; US Census Bureau), the proposed site of 109 new residential units would require 75,009 GPD, or about 84 AFY. The project does not propose any new or expanded uses against the Armona Community Plan. By 2035, the community plan anticipates 5,973 additional residents which would require approximately 1,116,951 GPD, or 1,251 AFY. However, ACSD has indicated that it would drill new wells and construct additional water facilities as needed. To compensate, new development will be required to pay impact fees for new water services, along with the reduced water use implementations from the polices set forth in the Armona Community Plan. Therefore, the impact is *less than significant.*

c) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than Significant Impact: The project does not propose any new or expanded uses and is therefore not anticipated to result in increased demand for wastewater treatment services beyond existing conditions in the Armona Community Plan. Additionally, the site's current and future wastewater service demand has been evaluated by the City's PEIR. The current capacity of the wastewater system is approximately 0.534 MGD. It currently receives .353 MGD, leaving an available 0.181 MGD. Based on the average per-person daily wastewater use (109 gallons, including commercial and industrial uses; County of Kings General Plan) and Armona's average of 3.68 persons per household, the 109-unit project would produce approximately .0044 MGD of wastewater.

Because the Community's sewer system has the capacity to meet the project site's expected demand for wastewater treatment, and it is not anticipated that the project will increase the site's demand for wastewater treatment, it can be inferred that the existing wastewater treatment system has adequate capacity to serve the proposed project. There is a *less than significant impact.*

d) Would the project 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?

No Impact: The KWRA provides solid waste services to the proposed project site. The project does not propose any new or expanded uses and is therefore not anticipated to result in increased generation of solid waste beyond existing conditions. Because the City's existing infrastructure has the capacity to accommodate the solid waste currently planned in the community plan for expanded population, it can be inferred that the existing solid waste infrastructure has adequate capacity to serve the proposed project. The project would not generate solid waste in excess of State or Local Standards and there is *no impact.*

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact: This proposed project conforms to all applicable statutes and regulations related to solid waste disposal. The proposed project will comply with the adopted policies related to solid waste, and will comply with all applicable federal, state, and local statutes and regulations pertaining to disposal of solid waste, including recycling. Therefore, the proposed project would have *no impact* on solid waste regulations.

XX. 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 With Mitigation Incorporation	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 a 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?	☐	☐	☐	☑

Environmental Setting

There are no State Responsibility Areas (SRAs) within the vicinity of the project site, and the project site is not categorized as a "Very High" Fire Hazard Severity Zone (FHSZ) by CalFire. This CEQA topic only applies to areas within an SRA or a Very High FHSZ.

Regulatory Setting

Fire Hazard Severity Zones: geographical areas designated pursuant to California Public Resources Codes Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code, Sections 51175 through 51189.

Discussion

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact: The project would not substantially impair an adopted emergency response plan or emergency evacuation plan. The project will be reviewed by the Kings County Fire Department to ensure the project does not impair emergency response or emergency evacuation. Additionally, the proposed project site is not located within an SRA or a Very High FHSZ. There is *no impact.*

b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact: The project is located on a flat area of agricultural and urban land which is considered to be at little risk of fire. Additionally, the proposed project site is not located within an SRA or a Very High FHSZ. There is *no impact.*

c) Would the project 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?

Less than Significant Impact: The construction of the project involves adding new local residential streets, and new and relocated utilities. Utilities such as emergency water sources and power lines would be included as part of the proposed development, however all improvements would be subject to City standards and Fire Chief approval. The proposed project would not exacerbate fire risk and the impact would be *less than significant*

d) Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes?

No Impact: The project site is not located in an area designated as a Fire Hazard Severity Zone and lands associated with the Project site are relatively flat. Therefore, the project would not be susceptible to downslope or downstream flooding or landslides as a result of post-fire instability or drainage changes. There is *no impact.*

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Does the project have the potential substantially to 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 a rare or endangered plant or animal 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?	☐	☐	☑	☐

Discussion

a)) Does the project have the potential to 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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant Impact with Mitigation Incorporation: This initial study found the project could have significant impacts on aesthetics, cultural resources, geology and soils, hydrology and water quality, recreation, transportation (VMT) and tribal cultural resources. However, implementation of the identified mitigation measures for each respective section would ensure that impacts are *less than significant with mitigation incorporation* with the exception of transportation which was found to have a *significant and unavoidable impact.*

bb) 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)?

Less than Significant Impact: CEQA Guidelines Section 15064(h) states that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. Due to the nature of the project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The proposed project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., increase in population could lead to an increased need for housing, increase in traffic, air pollutants, etc).

With the exception of transportation (VMTs) area of analysis which was found to have a significant and unavoidable impact. All other areas of analysis described in Sections I through XX above, found that any potentially significant impacts of the proposed project would be reduced to a less-than-significant level following incorporation of the mitigation measures listed in the Mitigation Monitoring and Reporting Program. All pending, approved, and completed projects in the vicinity of the proposed project would be subject to review in separate environmental documents and required to conform to the 2035 Kings County General Plan, the Kings County Development Code, mitigate for project-specific impacts, and provide appropriate engineering to ensure the development meets all applicable federal, State and local regulations and codes. As currently designed, and by complying with the recommended mitigation measures, the proposed project would not contribute to a cumulative impact. Thus, the cumulative impacts of pending, approved, and completed projects would be less than cumulatively considerable. Impacts would be *less than significant with mitigation incorporated*.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact: The analyses of environmental issues contained in this Initial Study indicate that the project is not expected to have substantial impact on human beings, either directly or indirectly. Mitigation measures have been incorporated in the project design to reduce all potentially significant impacts to less than significant, which results in a *less than significant impact* to this checklist item.

1.7 Supporting Information and Sources

1. District Accepted Fleet Mix for Residential Projects, Valley Air
2. Armona Community Plan
3. County of Kings General Plan
4. County of Kings General Plan PEIR
5. KCAG Climate Action Plan
6. County of Kings Zoning Ordinance
7. Improvement Standards, County of Kings
8. SJVAPCD Regulations and Guidelines
9. FEMA Flood Maps
10. California Air Resources Board's (CARB's) Air Quality and Land Use Handbook
11. 2019 California Environmental Quality Act CEQA Guidelines
12. California Building Code
13. California Stormwater Pollution Prevention Program (SWPPP)
14. Government Code Section 65962.5
15. California Environmental Protection Agency (CEPA) San Joaquin Valley Air Pollution Control District Mitigation Measures
16. Southern California Edison 2019 Power Content Label
17. Transit Noise and Vibration Impact Assessment, Federal Transit Administration, September 2018.
18. 2020 U.S. Census
19. Federal Highway Administration Construction Noise Handbook
20. Kings County Multi-jurisdictional Local Hazard Mitigation Plan
21. California Scenic Highway Program
22. California Farmland Mapping and Monitoring Program
23. EMFAC 2021 (v1.0.1) Emissions Inventory
24. EPA, Greenhouse Gasses
25. Tulare Lake Subbasin Groundwater Sustainability Plan
26. OPR Technical Advisory on Evaluating Transportation Impacts in CEQA, 2018

Appendix C

VMT Assessment & Traffic Impact Study

PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

Ms. Molly Baumeister
4Creeks
324 South Santa Fe Street, Suite A
Visalia, California 93292

May 26, 2022

Subject: Vehicle Miles Traveled Discussion
Proposed Tract 936, Summers Pointe
Generally Northwest of the Intersection of Crocus Way and Oak Avenue
Armona, Kings County, California

Dear Ms. Baumeister:

The purpose of this letter is to present a discussion of vehicle miles traveled (VMT) for purposes of determining whether the project will cause a significant transportation impact.

Project Description

The proposed project site is located on approximately 20.08 acres generally located northwest of the intersection of Crocus Way and Oak Avenue in Kings County, California (APN 017-100-012 and 017-100-013). The Project is a single-family residential subdivision with 109 homes, at least nine of which will be affordable housing. We understand that the Project conforms to the Armona Community Plan and does not require a General Plan Amendment. Site access will be via two local streets connecting to Crocus Way and one street stubbed to the east for a future connection.

Trip Generation

Trip generation estimates are presented herein for informational purposes and are not part of the CEQA impact analysis. Data provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*, are typically used to estimate the number of trips anticipated to be generated by proposed projects. ITE presents data for single-family residential neighborhoods in Land Use 210, Single-Family Detached Housing. Table 1 presents trip generation estimates for the 100 homes not classified as affordable housing.

Table 1
Trip Generation Calculations

Land Use	Size	Daily		A.M. Peak Hour					P.M. Peak Hour				
		Rate	Total	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
210	100 homes	9.43	943	0.70	26:74	18	52	70	0.94	63:37	59	35	94

Reference: *Trip Generation Manual, 11th Edition*, Institute of Transportation Engineers 2021
Rates are reported in trips per dwelling unit. Splits are reported as Entering/Exiting as a percentage of the total.

CEQA Impact Analysis

Senate Bill 743 (Steinberg, 2013), which was codified in California Public Resources Code § 21099, required changes to the guidelines implementing the California Environmental Quality Act (CEQA Guidelines) (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 1500, et seq.) as to the analysis of transportation impacts. Per Public Resources Code § 21099(b)(1):

> "The Office of Planning and Research shall prepare, develop, and transmit to the Secretary of the Natural Resources Agency for certification and adoption proposed revisions to the guidelines adopted pursuant to Section 21083 establishing criteria for determining the significance of transportation impacts of projects within transit priority areas. Those criteria shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. In developing the criteria, the office shall recommend potential metrics to measure transportation impacts that may include, but are not limited to, vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated. The office may also establish criteria for models used to analyze transportation impacts to ensure the models are accurate, reliable, and consistent with the intent of this section."

In January 2019, the Natural Resources Agency certified the Office of Planning and Research's (OPR) proposed revisions, which resulted in the creation of Section 15064.3 of the CEQA Guidelines. Section 15064.3(a) describes its purpose as:

> "This section describes specific considerations for evaluating a project's transportation impacts. Generally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) below (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact."

OPR created a Technical Advisory (December 2018) (TA)[1] as guidance for evaluating vehicle miles traveled (VMT) impacts. The TA is incorporated herein by reference. VMT significance thresholds are recommended by OPR beginning on page 8 of the TA. Beginning on page 10 of the TA, OPR states:

> "Public Resources Code section 21099 directs OPR to propose criteria for determining the significance of transportation impacts. In this Technical Advisory, OPR provides its recommendations to assist lead agencies in selecting a significance threshold that may be appropriate for their particular projects. While OPR's Technical Advisory is not binding on public agencies, CEQA allows lead agencies to 'consider thresholds of significance . . . recommended by other public agencies, provided the decision to adopt those thresholds is supported by substantial evidence.' (CEQA Guidelines, § 15064.7, subd. (c).) Based on OPR's extensive review of the applicable research, and in light of an assessment by the

[1] https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

> California Air Resources Board quantifying the need for VMT reduction in order to meet the State's long-term climate goals, OPR recommends that a per capita or per employee VMT that is fifteen percent below that of existing development may be a reasonable threshold.
>
> "Fifteen percent reductions in VMT are achievable at the project level in a variety of place types. [citing CAPCOA (2010) *Quantifying Greenhouse Gas Mitigation Measures*, p. 55, available at http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf]
>
> "Moreover, a fifteen percent reduction is consistent with SB 743's direction to OPR to select a threshold that will help the State achieve its climate goals. As described above, section 21099 states that the criteria for determining significance must 'promote the reduction in greenhouse gas emissions.' In its document *California Air Resources Board 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals15*, CARB assesses VMT reduction per capita consistent with its evidence-based modeling scenario that would achieve State climate goals of 40 percent GHG emissions reduction from 1990 levels by 2030 and 80 percent GHG emissions reduction levels from 1990 by 2050. Applying California Department of Finance population forecasts, CARB finds per-capita light-duty vehicle travel would need to be approximately 16.8 percent lower than existing, and overall per-capita vehicle travel would need to be approximately 14.3 percent lower than existing levels under that scenario. Below these levels, a project could be considered low VMT and would, on that metric, be consistent with 2017 Scoping Plan Update assumptions that achieve climate state climate goals."

According to the California Air Resources Board's (CARB) webpage[2]:

> "Senate Bill 375 requires CARB to develop and set regional targets for greenhouse gas (GHG) emission reductions from passenger vehicles. CARB has set regional targets, indexed to years 2020 and 2035, to help achieve significant additional GHG emission reductions from changed land use patterns and improved transportation in support of the State's climate goals, as well as in support of statewide public health and air quality objectives. Metropolitan planning organizations (MPOs) must prepare a sustainable communities strategy (SCS) that will reduce GHG emissions to achieve these regional targets, if feasible to do so."

The same CARB webpage identifies a thirteen percent (13%) target for GHG emission reduction from passenger vehicles (indexed to year 2035)[3] for the Kings County Association of Governments (KCAG) MPO.

OPR's recommendation "that a per capita or per employee VMT that is fifteen percent below that of existing development" is a valid threshold for the County of Kings (County) because it is consistent with CARB's thirteen percent (13%) GHG vehicle emission reduction target to which KCAG's members are subject. It is reasonable to conclude that a reduction in VMT

[2] https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets
[3] https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets

directly corresponds to a reduction in GHG emissions from passenger vehicles and that a proposed project that is estimated to generate a per capita or per employee VMT that is more than fifteen percent (15%) below that of existing development will result in GHG emission reduction consistent with CARB's thirteen percent (13%) reduction target for the KCAG metropolitan planning organization (MPO). For purposes of the County's VMT evaluation efforts, it is appropriate to utilize OPR's recommended fifteen-percent-below-existing-development VMT threshold because it is consistent CARB's applicable GHG emission reduction target.

The TA suggests that screening thresholds be utilized to identify projects that are expected to cause a less-than-significant impact. Page 12 of the TA indicates:

> "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."

With respect to map-based screening, the TA states:

> "Residential and office projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with VMT data, for example from a travel survey or a travel demand model, can illustrate areas that are currently below threshold VMT (see recommendations below). Because new development in such locations would likely result in a similar level of VMT, such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis."

KCAG created an online VMT mapping tool that identifies VMT per capita and VMT per employee by traffic analysis zone (TAZ). The mapping tool is available at: https://www.arcgis.com/apps/webappviewer/index.html?id=84b4b47b08ac41af88779212180ff36c. A print generated using the mapping tool is attached.

KCAG's mapping tool was created utilizing trip-based transportation models created for the eight (8) San Joaquin Valley MPOs to satisfy the requirements of SB 375. The modeling process is described in the *Documentation for the EIGHT SAN JOAQUIN VALLEY MPO TRAFFIC MODELS TO MEET THE REQUIREMENTS OF SB 375* (August 30, 2012)[4], which is incorporated herein by reference.

According to Appendix VIII of KCAG's 2018 Regional Transportation Plan (RTP), the 2012 transportation model was revalidated for a 2015 base year and is described on Appendix VIII page 26 as:

> "The KCAG model was revalidated to a 2015 base year for the 2018 RTP. The revalidation included new inventories of base year housing and employment, updates to the road network and transit coverage to reflect recent changes in the transportation system, and updated traffic counts to represent the 2015 base year.

[4] https://www.mcagov.org/DocumentCenter/View/195/Traffic-Model

> The KCAG model traffic validation is based on several criteria, including vehicle-miles of travel, total volume by road type, and percent of links within acceptable limits."

The RTP, which was adopted by KCAG and can be found at:

https://www.kingscog.org/vertical/Sites/%7BC427AE30-9936-4733-B9D4-140709AD3BBF%7D/uploads/KCAG_2018_RTPSCS_Full_Document.pdf,

and the underlying traffic data are incorporated herein by reference.

Page 26 of Appendix VIII describes KCAG's VMT projection process as follows:

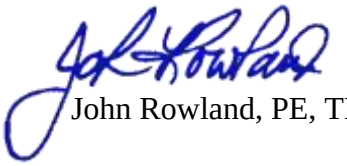
> "Vehicle miles of travel (VMT) were estimated from the travel demand model by multiplying link volumes by link distances. The model estimates intrazonal trips (trips remaining within a TAZ) but does not assign these trips to the model road network. The intrazonal trips were multiplied by the estimated intrazonal distances to calculate intrazonal VMT."

The KCAG mapping tool reflects a VMT per capita of 10.60 for the TAZ in which the Project will be located, which is above the County VMT per capita average of 9.6. Therefore, it can be concluded that, based upon KCAG's VMT mapping tool, the Project's VMT impact is potentially significant because VMT associated with the Project is not less than the fifteen-percent-below-existing-development threshold.

In order to mitigate the project's VMT impacts, home-based VMT per capita would need to be reduced by 23 percent. Current mitigation guidance provided by CAPCOA states the maximum possible reduction in VMT is 20 percent in suburban locations (CAPCOA, 2010). This is because a residential project is only able to decrease VMT with certain methods, primarily by increasing transit use or providing more employment opportunities and complementary land uses near the residences. These methods are difficult to achieve in suburban areas as compared to dense urban areas. Therefore, the proposed project is unable to mitigate the VMT impact, resulting in a significant and unavoidable impact.

Thank you for the opportunity to present this discussion of VMT. Please feel free to call our office if you have any questions.

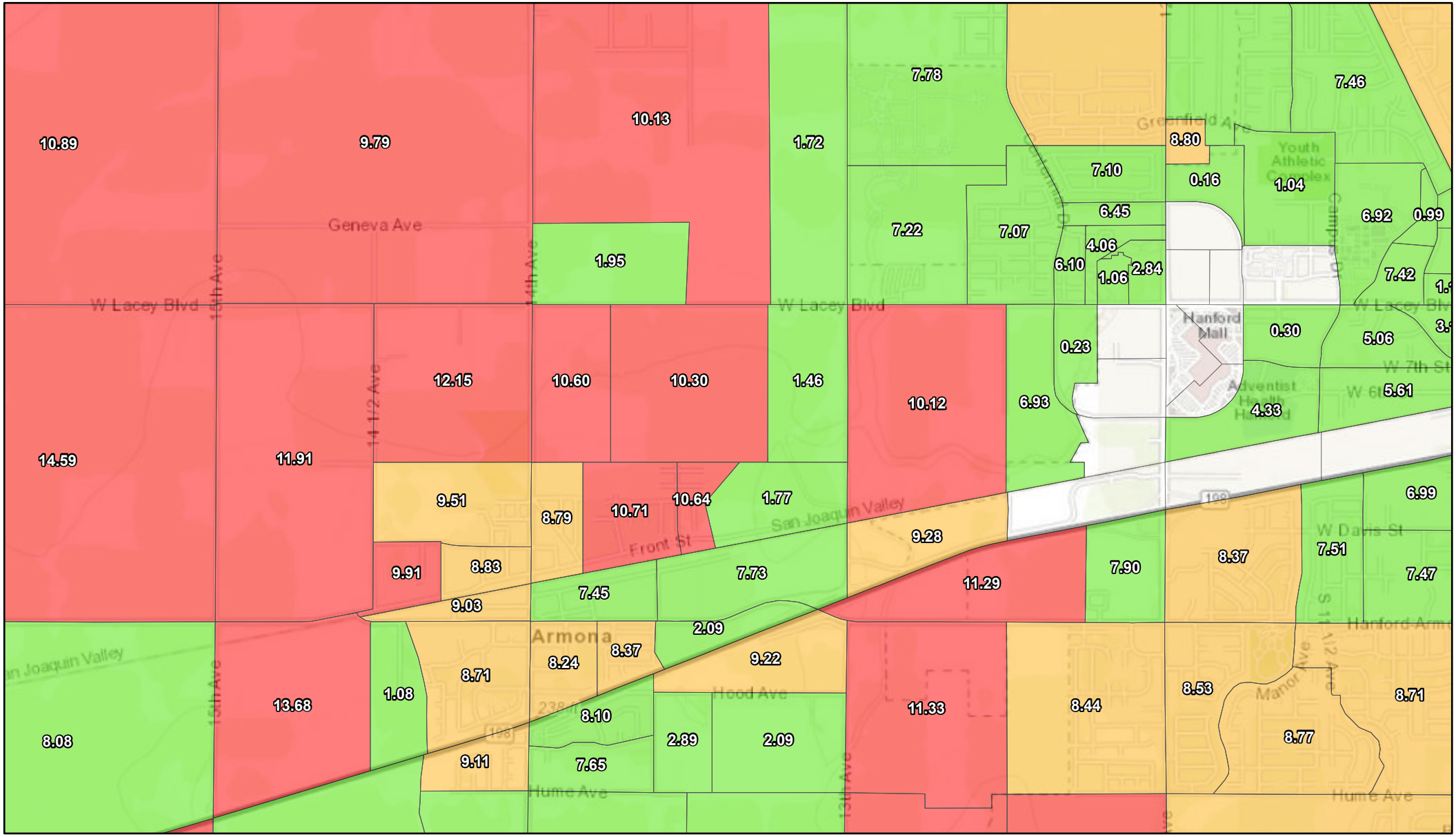
PETERS ENGINEERING GROUP



John Rowland, PE, TE

Attachment: KCAG screening map

ArcGIS Web Map



5/26/2022, 3:57:41 PM

Vehicle Miles Traveled per Capita

- < 8.2 (15% or More Below County Average)
- 8.2 – 9.6 (14% Below County Average to Average)
- > 9.6 (Above County Average)

1:33,046

0 0.23 0.45 0.9 mi

0 0.35 0.7 1.4 km

Tract 936 Summers Pointe Subdivision

Armona, CA

September 27, 2022

Traffic Impact Analysis Report

Prepared For:

County of Kings | Public Works Department
1400 W. Lacey Boulevard
Hanford, CA 93230

Prepared By:

4Creeks, Inc.
324 S. Santa Fe Street, Suite A
Visalia, CA 93292

Table of Contents

Acronyms and Abbreviations

AM	One-hour period of highest traffic during the AM hours of the day (7-9 AM)
AWSC	All-way stop control
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CIP	Capital Improvement Program
EB	Eastbound
HCM	Highway Capacity Manual, 6th Edition
KCAG	Kings County Association of Governments
LOS	Level of Service
NB	Northbound
OWSC	One-way stop control
PM	One-hour period of highest traffic during the PM hours of the day (4-6 PM)
SB	Southbound
SF	Square feet
SR	State Route
TIF	Transportation Impact Fee
TIA	Traffic Impact Analysis
TWSC	Two-way stop control
WB	Westbound
VPH	Vehicles per hour

Executive Summary

This Traffic Impact Analysis (TIA) provides the analysis results for the proposed Tract 936 Summers Pointe Subdivision (Project) located on approximately 20.08 acres north of Armona in Kings County, California. The Project includes 109 single-family residential homes located east of 14th Avenue and north of Crocus Way with access via Lupine Street or Oak Avenue from Front Street, which runs east and west. Figures 1 and 2 show a vicinity map and site plan of the Project, respectively.

The purpose of the TIA is to evaluate the impacts on the transportation infrastructure due to the addition of the traffic from the proposed Project. To evaluate the impacts on the transportation infrastructure due the addition of traffic from the Project, four study intersections were evaluated during the weekday morning (AM) peak hour and evening (PM) peak hour under four study scenarios. The study intersections were evaluated for Existing, Existing Plus Project, Near Term With Project, and Cumulative Year 2046 With Project conditions.

Level of Service (LOS) Standards

The State of California does not recognize traffic congestion and delay as an environmental impact per the California Environmental Quality Act (CEQA). However, many local agencies, including the County of Kings, use level of service (LOS) standards to assess street and highway performance. The 2035 Kings County General Plan states that the minimum acceptable LOS standard shall be no lower than LOS E for urban areas and no lower than LOS D for rural areas. The Armona Community Plan defers to the 2035 Kings County General Plan and states that the minimum acceptable level of service is LOS D. LOS D will be taken as the threshold for acceptable traffic operation for this Project due to its rural location.

Existing Conditions

All four study intersections operate at acceptable service levels (LOS D or better) during the AM and PM peak hours.

Existing Plus Project Conditions

All four study intersections operate at acceptable service levels (LOS D or better) during the AM and PM peak hour.

Near Term With Project Conditions

Intersections 1, 2, and 3 operate at acceptable service levels (LOS D or better) during the AM and PM peak hour.

Intersection 4 (13th Avenue and Front Street) would degrade from LOS C to LOS D in the AM peak hour. The intersection would degrade from LOS D to LOS F in the PM peak hour. At Intersection 4, added traffic from the Near Term projects in addition to the proposed Project would degrade the level of service from an acceptable level to an unacceptable level, constituting significant inconsistencies with the 2035 Kings County General Plan. This intersection is currently one-way stop controlled, and the identified inconsistencies can be mitigated with all-way stop control. Mitigation measures are described in further detail in Section 6.0 and Appendix J.

Cumulative (Year 2046) With Project Conditions

Intersections 1, 2, and 3 operate at acceptable service levels (LOS D or better) during the AM and PM peak hour.

Intersection 4 would degrade from LOS D to LOS F in the AM peak hour when comparing the Cumulative Year 2046 conditions to the Cumulative Year 2046 With Project conditions. Intersection 4 will degrade from LOS E to LOS F during the PM peak hour. At Intersection 4, added traffic from the Projects in addition to growth projections for the area would degrade the level of service from an acceptable level to an unacceptable level, constituting significant inconsistencies with the 2035 Kings County General Plan. This intersection is currently one-way stop controlled, and the identified inconsistencies can be mitigated with traffic signalization. Mitigation measures are described in further detail in Section 6.0 and Appendix J.

Traffic Signal Warrant 3, Peak Hour

Per the request of the County of Kings, traffic signal warrant analyses for the intersection of 14th Avenue and Front Street were completed using Warrant 3, Peak Hour, per the guidelines of the California Manual on Uniform Traffic Control Devices (CA MUTCD). The signal warrant analyses for 14th Avenue and Front Street were completed and the warrant was not met for any of the study scenarios.

1.0 Project Information

This report summarizes the results of the Traffic Impact Analysis (TIA) for the proposed Tract 936 Summers Pointe Subdivision (Project). Analysis methodologies and assumptions are discussed further in Appendix A.

1.1 Project Description and Location

The Project is a low-density residential subdivision (APNs 017-100-012, 017-100-013) located north of Armona in Kings County, California. The subdivision is approximately 20.08 acres, located east of 14th Avenue and north of Crocus Way. The Project includes 109 lots for single-family residential homes. Access to the site is anticipated via local roads, Crocus Way, Lupine Street, and Oak Avenue. The subdivision is accessible from Front Street, which runs east and west. A vicinity map and site plan of the Project are included on the following Figures 1 and 2, respectively.

1.2 Study Intersections

The study area is located north of State Route 198 in Armona, California. The following study intersections were identified by the County of Kings for analysis:

1. 14th Avenue/Front Street
2. Lupine Street/Front Street
3. Oak Avenue/Front Street
4. 13th Avenue/Front Street

No significant improvements to the roadway system are assumed in this analysis. When a roadway or intersection is identified as operating below the County level of service (LOS) standard, improvements will be recommended based on the 2035 Kings County General Plan and the findings of this TIA.

1.3 Analysis Time Periods and Scenarios

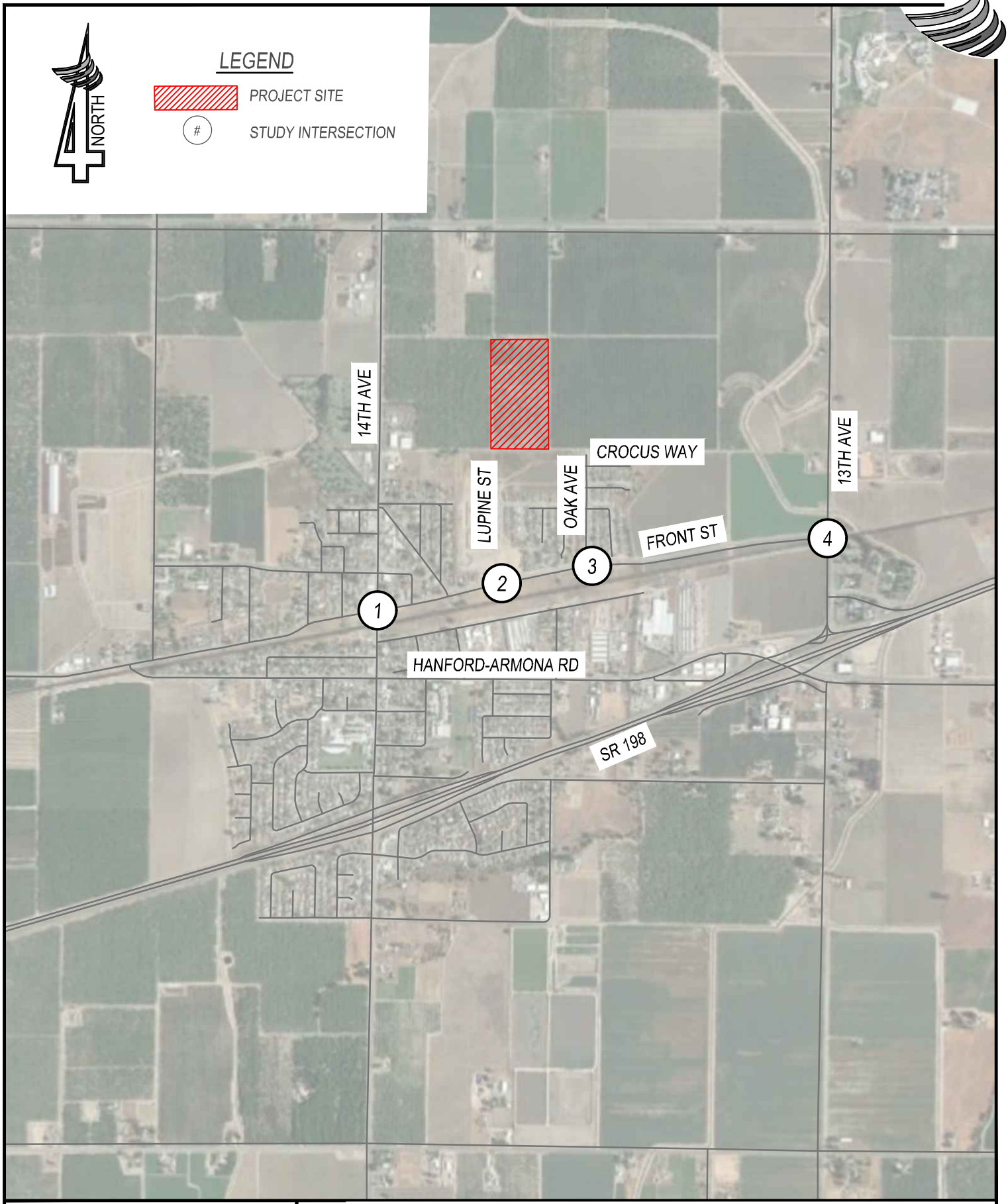
Intersection operational analyses to determine the LOS were performed for the following time periods:

- Weekday AM peak hour between 7:00 AM and 9:00 AM
- Weekday PM peak hour between 4:00 PM and 6:00 PM

The following analysis scenarios were determined based on County guidelines:

- Existing Conditions
- Existing Plus Project Conditions
- Near Term With Project Conditions
- Cumulative Year 2046 With Project Conditions

Per the request of the County of Kings, traffic signal warrant analyses for the intersection of 14th Avenue and Front Street were completed using Warrant 3, Peak Hour, per the guidelines of the California Manual on Uniform Traffic Control Devices (CA MUTCD). No other signal warrant analyses were completed.



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VISALIA, CA 93292
(559) 802-3052

Figure 1: Vicinity Map
Tract 936 Summers Pointe Subdivision TIA

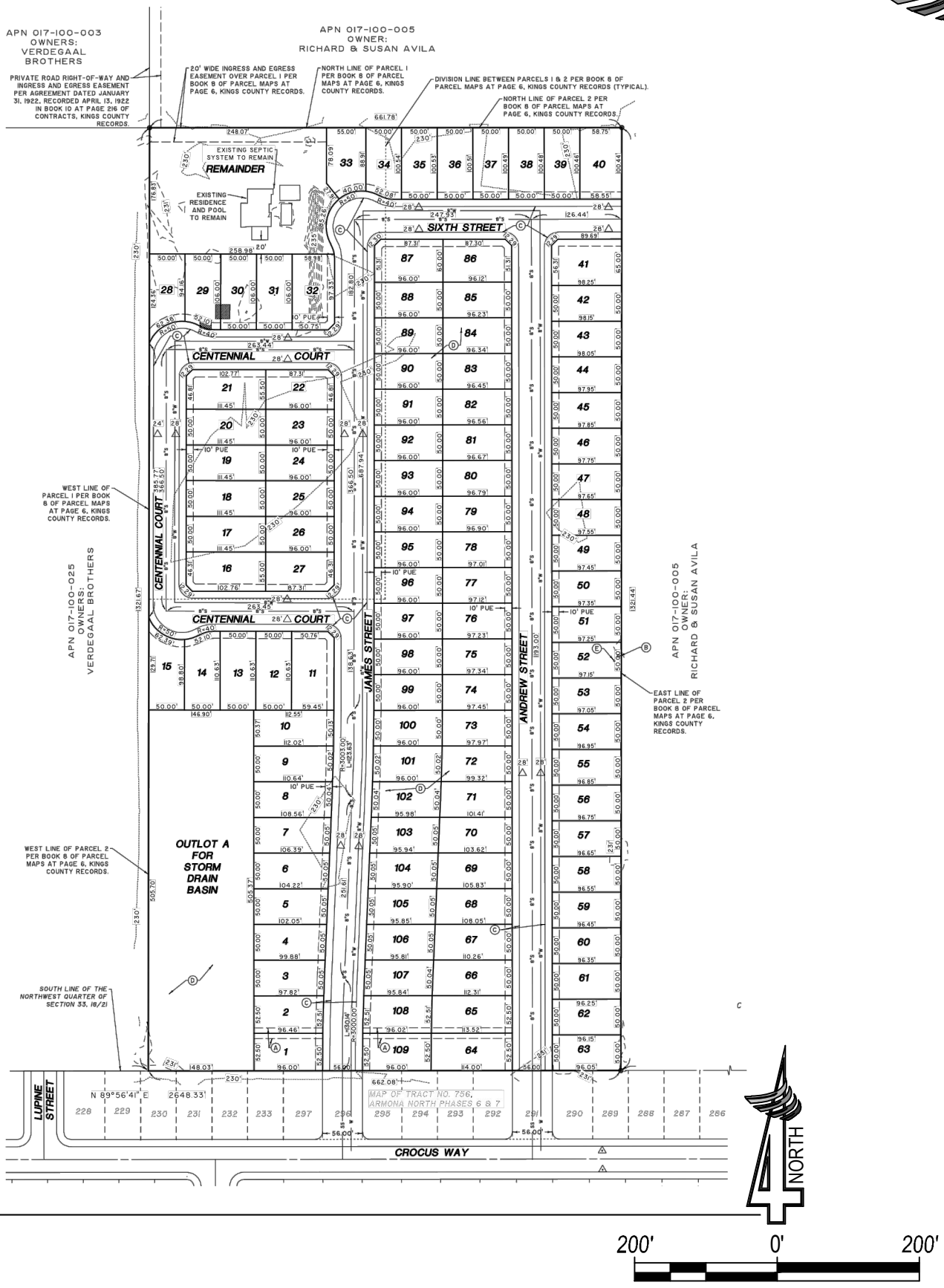

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Figure 2: Site Map
Tract 936 Summers Pointe Subdivision TIA

The four study intersections are all currently under stop control. These intersections were analyzed using the operations methodology of the Highway Capacity Manual, 6th Edition (HCM) for stop-controlled intersections as described in Chapter 19 of the HCM. Synchro Version 11 software utilizing the HCM 2016 methodology was used to analyze each of the study intersections. LOS ratings for stop sign-controlled intersections are based on the average control delay expressed in seconds per vehicle. The control delay is calculated for each movement, not the entire intersection, at one- or two-way stop-controlled intersections. For single-lane approaches, the control delay is the average of all movements in that lane. The delay ranges for unsignalized intersections are lower than for signalized intersections because drivers expect less delay at stop-controlled intersections.

Each of the study intersections were analyzed using Synchro Version 11 software and HCM 2016 methodology. The LOS assessment under all scenarios is based on current traffic controls unless otherwise noted. The LOS methodology for stop-controlled intersections is described in detail in Appendix A.

2.0 Existing Conditions

2.1 Traffic Volumes

Turning movement volumes were collected at the four study intersections during the weekday for both the AM and PM peak periods. Volumes were collected on Wednesday, May 18th, 2022, between 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM. These existing AM and PM peak hour traffic volumes are shown on Figure 3. Appendix B includes the data sheets for the collected vehicle, bicycle, and pedestrian counts.

2.2 Operational Analysis

The study intersection lane configurations and intersection controls are shown on Figure 3. Using the existing traffic volumes and the roadway geometry from Figure 3, the existing conditions LOS were calculated for each peak period and are shown in Table 1. LOS calculation sheets for Existing Conditions are included in Appendix D.

Table 1: Existing Level of Service Summary

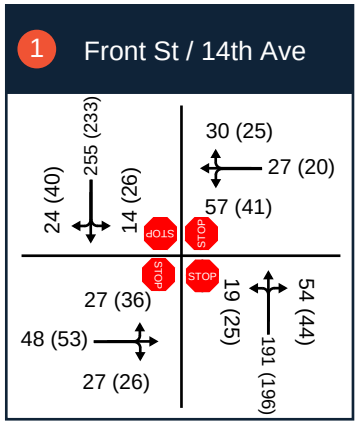
Intersection	Existing Conditions	
	LOS (AM / PM)	Average Vehicle Delay, seconds (AM/PM)
14th Ave / Front St	(B/B)	(13.6/11.6)
Lupine St / Front St	(A/A)	(9.7/9.5)
Oak Ave / Front St	(B/B)	(10.1/10.5)
13th Ave / Front St	(C/C)	(16.3/19.5)

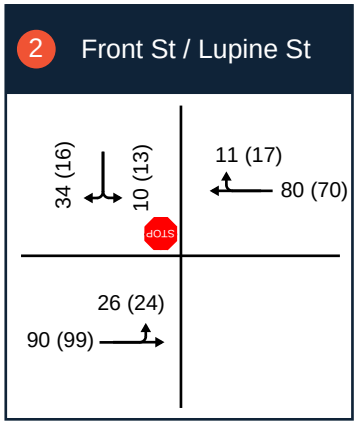
As shown in Table 1, all intersections are currently operating within the limits of the County's adopted LOS standard (LOS D or better).

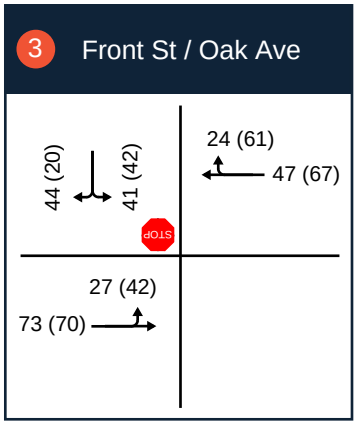
2.3 Traffic Signal Warrant Results – Existing Conditions

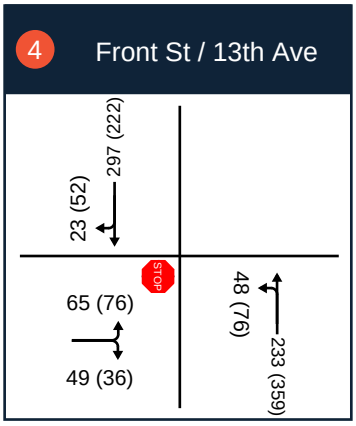
A traffic signal warrant analysis using Warrant 3, Peak Hour, was prepared for the intersection of 14th Avenue / Front Street per the County's request. The results of the peak hour warrant under existing conditions are summarized in Table 2. The results show that 14th Avenue / Front Street does not meet the Warrant 3 in either peak hour. Signal warrant worksheets are provided in Appendix C.

Signalization of an intersection may be appropriate if the intersection meets one or more of the nine signal warrants detailed in the CA MUTCD. Even if the Peak Hour Volume Warrant is met, a more detailed signal warrant study is recommended before a traffic signal is installed. The more detailed study should consider volumes during the daily peak hours of roadway traffic, pedestrian traffic, and collision histories.









LEGEND

- STOP Stop Sign
- X Study Intersection
- XX AM Volumes
- (XX) PM Volumes

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Figure 3: Existing Conditions Peak Hour Traffic Volumes
Tract 936 Summers Pointe Subdivision TIA

Table 2: Warrant 3, Peak Hour Results – Existing Conditions

#	Intersection	Control	Meets AM Peak Hour?	Meets PM Peak Hour?
1	14th Ave / Front St	AWSC	No	No

3.0 Existing Plus Project Conditions

This section describes the impacts of the proposed Project on the existing transportation system in the immediate vicinity of the Project site. The Existing Plus Project Conditions evaluates existing traffic volumes and roadway conditions plus new traffic generated by the proposed Project.

Traffic generated from the proposed Project is determined and added to the roadway system based on the following process:

- Trip Generation – the number of Project-only trips are estimated.
- Trip Distribution – the direction the trips travel to and from the Project site is estimated.
- Trip Assignment – the Project-only trips are assigned to intersection movements and street segments.

3.1 Project Trip Generation

Data provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*, was used to estimate the number of trips anticipated by the proposed Project. Trip generation estimates for the Project are shown in Table 3 and are based on the number of units of residential housing planned in the proposed project.

The total trip generation is provided in Table 3. The proposed Project is expected to generate 1,028 trips, including 76 AM peak hour trips (20 inbound, 56 outbound) and 102 PM peak hour trips, (64 inbound, 38 outbound).

Table 3: Project Trip Generation Estimates

Land Use	Units	Daily		A.M. Peak Hour					P.M. Peak Hour				
		Rate	Total	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Single-Family Detached Housing (210)	109	9.43	1,028	0.70	26:74	20	56	76	0.94	63:37	64	38	102

Reference: *Trip Generation Manual, 11th Edition*, Institute of Transportation Engineers. Rates shown are in trips per dwelling unit.

3.2 Project Trip Distribution and Assignment

Trip distribution is a process that determines the proportion of vehicles that are expected to travel between the Project site and various destinations outside the Project study area and determines the various routes that vehicles would likely take from the Project site to each destination using the calculated trip distribution. The regional distribution of Project trips was estimated by performing a select zone analysis using an appropriate travel model. The Kings County Association of Governments (KGAG) maintains an activity-based model for Kings County, including Armona. Trip distribution assumptions for the proposed Project were developed based on existing travel patterns, knowledge of the study area, and consultation with County staff and the KCAG travel demand model.

The Project trips shown in Table 3 were distributed on the nearby roadway network. Figure 4 shows the Project trip distribution percentages that were developed for the Project and the trip assignment project volumes that were developed for the Project. The assigned Project trips were then added to traffic volumes under Existing Conditions to generate Existing Plus Project Peak Hour Traffic Volumes shown on Figure 5.

3.3 Intersection Level of Service Analysis – Existing Plus Project Conditions

Results of the intersection level of service analysis for Existing Plus Project Conditions are summarized in Table 4 below. The results for Existing Conditions are included for comparison purposes. LOS calculation sheets for Existing Plus Project Conditions are included in Appendix E.

Under this scenario, all intersections continue to operate at acceptable service levels (LOS D or better) during the AM and PM peak hour.

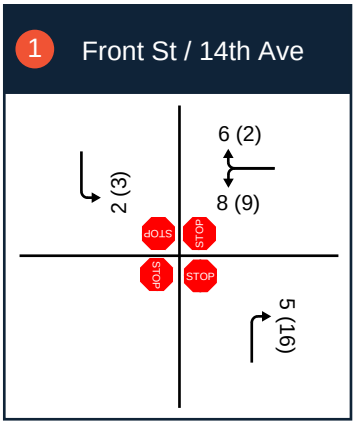
Table 4: Intersection Level of Service Analysis – Existing Plus Project Conditions

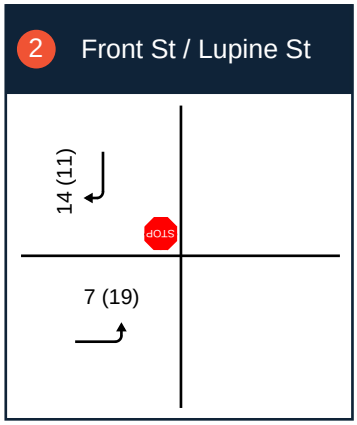
#	Intersection	Control	Peak Hour[1]	Existing Conditions		Existing Plus Project Conditions		Change in Delay
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
1	14th Ave / Front St	AWSC	AM	13.6	B	14.1	B	0.5
			PM	11.6	B	12.0	B	0.4
2	Lupine / Front St	OWSC	AM	9.7	A	9.8	A	0.1
			PM	9.5	A	9.6	A	0.1
3	Oak Ave / Front St	OWSC	AM	10.1	B	11.0	B	0.9
			PM	10.5	B	11.4	B	0.9
4	13th Ave / Front St	OWSC	AM	16.3	C	19.5	C	3.2
			PM	19.5	C	25.6	D	6.1

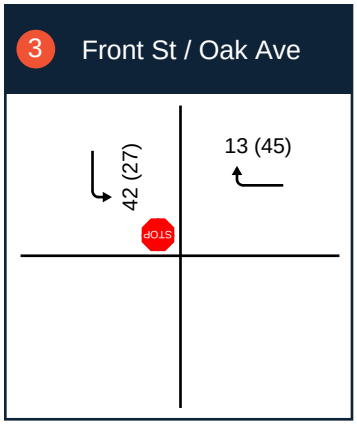
Notes:
1. AM – morning peak hour, PM – evening peak hour
2. Delay – Entire intersection weighted average control delay expressed in seconds per vehicle for signalized and all way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop-controlled intersections.
3. LOS – Level of Service. **Bold** indicates unacceptable Level of Service. Red indicates a significant impact.

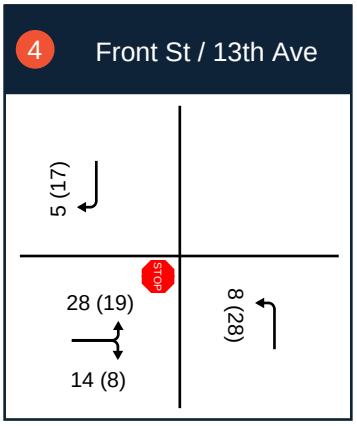
3.4 Signal Warrant Analysis – Existing Plus Project Conditions

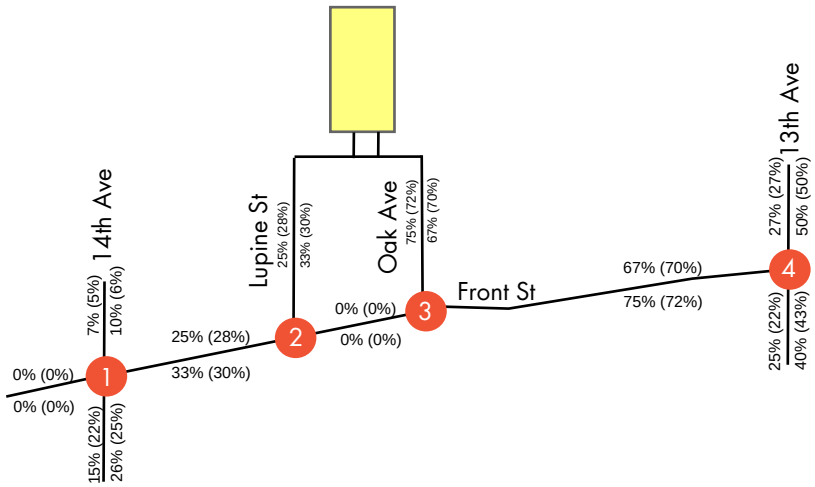
The results of the peak hour warrant under Existing Plus Project Conditions are summarized in Table 5 below. Signalization of an intersection may be appropriate if the intersection meets one or more of the nine signal warrants detailed in the CA MUTCD. Warrant 3, Peak Hour, was used here to indicate whether signalization may be appropriate, but even if the peak hour volume warrant is met, a more detailed signal warrant study is recommended before a traffic signal is installed.











LEGEND

- Project Site
- Stop Sign
- X — Study Intersection
- XX — AM Volumes / Project Trip Distribution
- (XX) — PM Volumes / Project Trip Distribution

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Figure 4: Project Trip Assignment and Distribution
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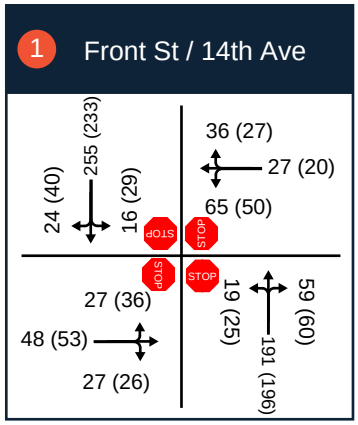

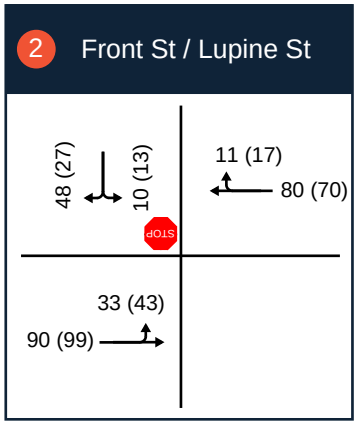

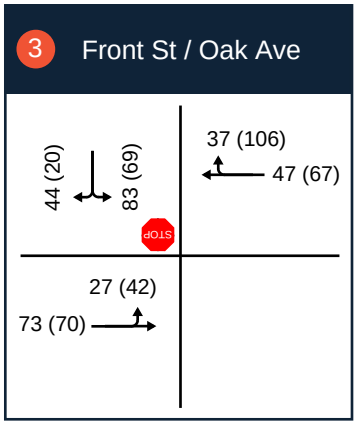

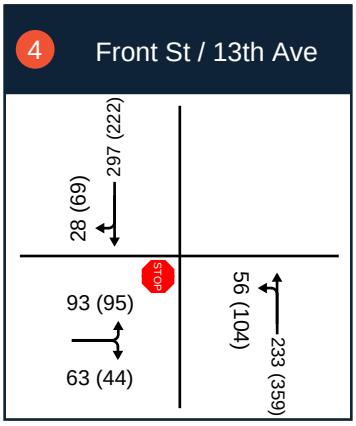

LEGEND

- STOP Stop Sign
- X Study Intersection
- XX AM Volumes
- (XX) PM Volumes

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Figure 5: Existing Plus Project Peak Hour Traffic Volumes
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The intersection does not meet Warrant 3 for either the AM or PM peak hour.

Table 5: Peak Hour Signal Warrant Results – Existing Plus Project Conditions

#	Intersection	Control	Meets AM Peak Hour?	Meets PM Peak Hour?
1	14th Ave / Front St	AWSC	No	No

4.0 Near Term With Project Conditions

This section includes the level of service calculations under the Near Term With Project Conditions. The Near Term With Project Conditions includes known pending and approved projects in the vicinity of the proposed Project. Per discussions with the County, the known pending and approved projects are as follows:

- Phase 5 Development – 38 single-family homes
- Phases 6 & 7 Developments – 97 single-family homes
- Phase 4-3 Development – 12 single-family homes

4.1 Project Trip Generation

The total trip generation for the near-term projects is provided in Table 6. The proposed near-term projects totaling 147 single-family homes are expected to generate 1,386 trips, including 103 AM peak hour trips (27 inbound, 76 outbound) and 138 PM peak hour trips, (87 inbound, 51 outbound).

Table 6: Near Term Projects Trip Generation Estimates

Land Use	Units	Daily		A.M. Peak Hour					P.M. Peak Hour				
		Rate	Total	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Single-Family Detached Housing (210)	147	9.43	1,386	0.70	26:74	27	76	103	0.94	63:37	87	51	138

Reference: *Trip Generation Manual, 11th Edition*, Institute of Transportation Engineers. Rates shown are in trips per dwelling unit.

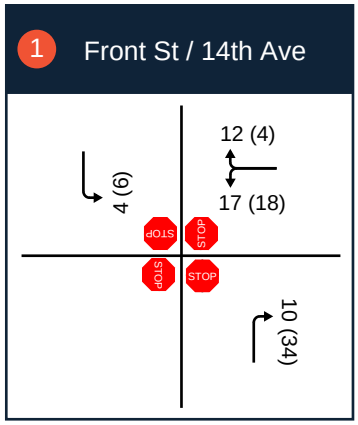
4.2 Project Trip Distribution and Assignment

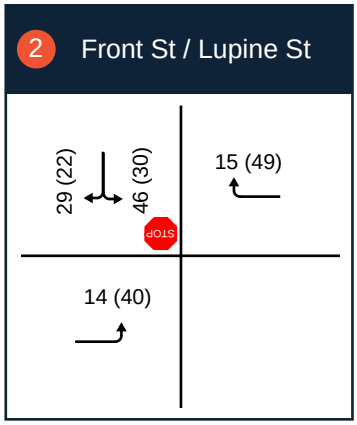
Trip distribution assumptions for the near-term projects were developed based on existing travel patterns, knowledge of the study area, and consultation with County staff, and the KCAG travel demand model.

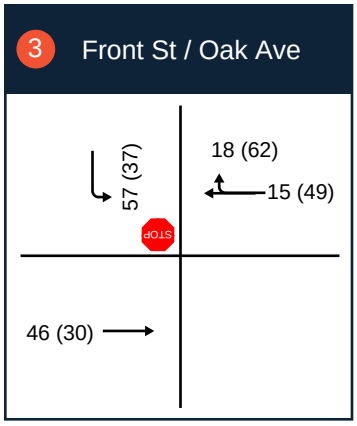
The near-term project trips shown in Table 6 were distributed on the nearby roadway network. Figure 6 shows the project trip assignment volumes that were developed for the Near Term With Project conditions. Figure 7 shows the Near Term Conditions using the project trip assignments from Table 6. The assigned project trips were then added to traffic volumes under Existing Conditions to generate Near Term With Project traffic volumes, shown on Figure 8. Lane geometries and traffic controls were maintained consistent with existing.

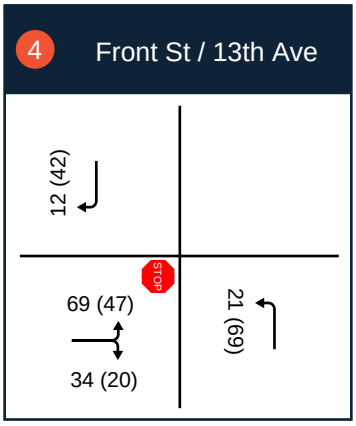
4.3 Intersection Level of Service Analysis – Near Term With Project Conditions

The intersection LOS analysis results for Near Term With Project Conditions are summarized in Table 7 below. LOS calculation sheets for Near Term With Project Conditions are included in Appendix F.









LEGEND

- STOP Stop Sign
- X Study Intersection
- XX AM Volumes
- (XX) PM Volumes

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Figure 6: Near Term With Project Project Trip Assignment
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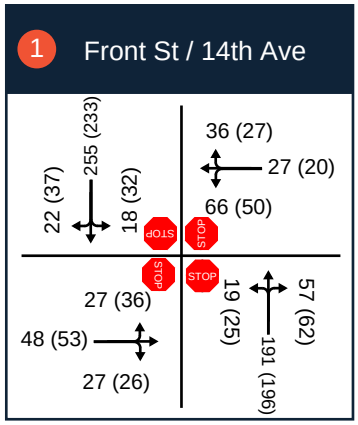

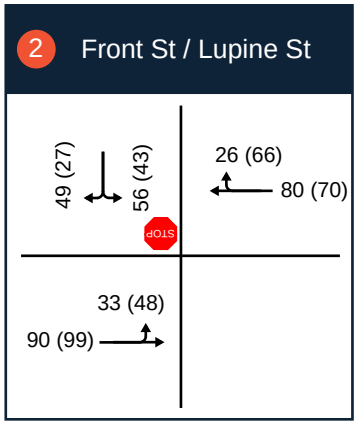

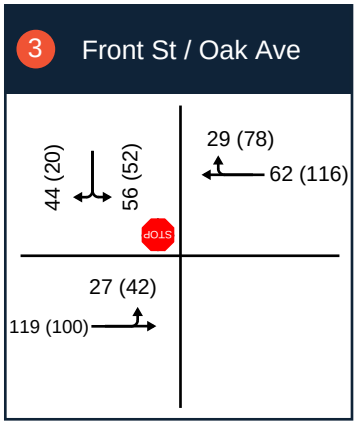

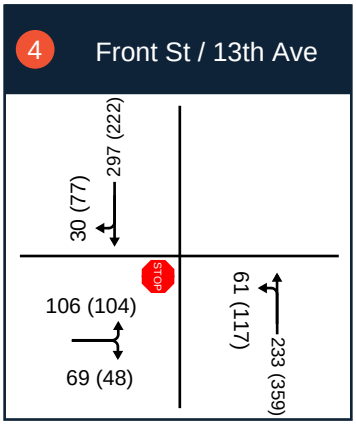

LEGEND

- STOP Stop Sign
- X Study Intersection
- XX AM Volumes
- (XX) PM Volumes

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Figure 7: Near Term Peak Hour Traffic Volumes
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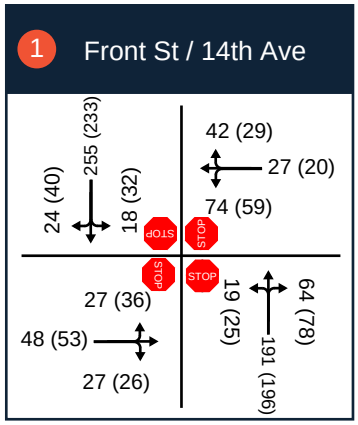

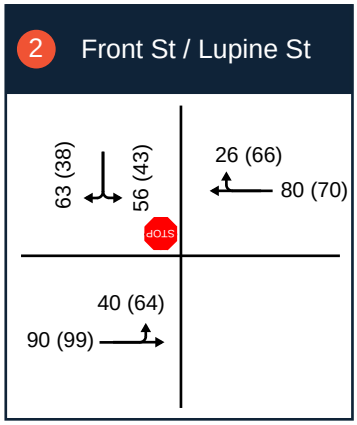

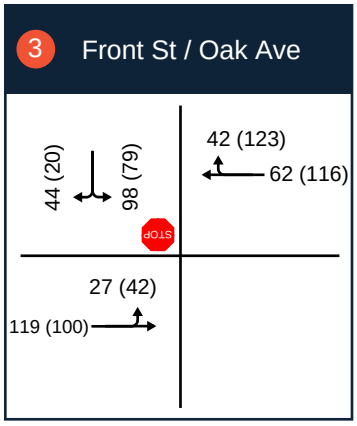

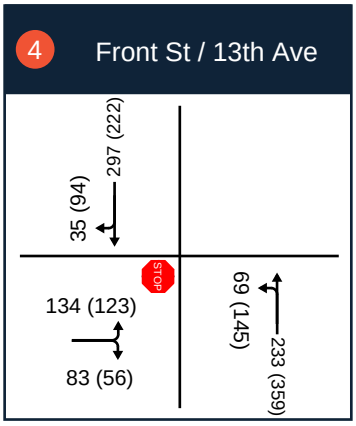

LEGEND

- STOP Stop Sign
- X Study Intersection
- XX AM Volumes
- (XX) PM Volumes

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Figure 8: Near Term With Project Peak Hour Traffic Volumes
Tract 936 Summers Pointe Subdivision TIA

Under the Near Term With Project scenario, 13th Avenue level of service deteriorates to LOS F during the PM peak hour.

Table 7 – Intersection Level of Service Analysis – Near Term With Project Conditions

#	Intersection	Control	Peak Hour[1]	Near Term Conditions		Near Term With Project Conditions		Change in Delay
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
1	14th Ave / Front St	AWSC	AM	14.1	B	14.8	B	0.7
			PM	11.9	B	12.5	B	0.6
2	Lupine / Front St	OWSC	AM	11.7	B	12.0	B	0.3
			PM	10.7	B	10.9	B	0.2
3	Oak Ave / Front St	OWSC	AM	11.0	B	12.3	B	1.3
			PM	11.7	B	12.8	B	1.1
4	13th Ave / Front St	OWSC	AM	21.5	C	27.9	D	6.4
			PM	30.3	D	**50.0**	**F**	19.7

Notes:
1. AM – morning peak hour, PM – evening peak hour
2. Delay – Entire intersection weighted average control delay expressed in seconds per vehicle for signalized and all way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop-controlled intersections.
3. LOS – Level of Service. **Bold** indicates unacceptable Level of Service. Red indicates a significant impact.

4.4 Signal Warrant Analysis – Near Term With Project Conditions

The results of the peak hour warrant under Near Term With Project Conditions are summarized in Table 8 below. As noted previously, signalization of an intersection may be appropriate if the intersection meets one or more of the nine signal warrants detailed in the CA MUTCD. Warrant 3, Peak Hour, was used here to indicate whether signalization may be appropriate, but even if the peak hour volume warrant is met, a more detailed signal warrant study is recommended before a traffic signal is installed. The intersection does not meet Warrant 3 for either the AM or PM peak hour.

Table 8 – Peak Hour Signal Warrant Results - Near Term With Project Conditions

#	Intersection	Control	Meets AM Peak Hour?	Meets PM Peak Hour?
1	14th Ave / Front St	AWSC	No	No

5.0 Cumulative Year 2046 With Project Conditions

This section presents the results of the level of service calculations under Cumulative Year 2046 With Project Conditions. Existing Conditions volumes at the study intersections were projected forward 24 years using growth factors derived from the KCAG travel demand model. Trip distribution assumptions are the same as those assumed under Existing Plus Project Conditions. Figure 9 shows projected turning movement volumes at the study intersections for Cumulative (Year 2046) Conditions. Trip assignment values for the proposed project from Figure 4 were added to the Cumulative Year 2046 Conditions to generate the peak hour volumes for Cumulative 2046 With Project Conditions – see Figure 10.

5.1 Intersection Level of Service Analysis – Cumulative 2046 With Project Conditions

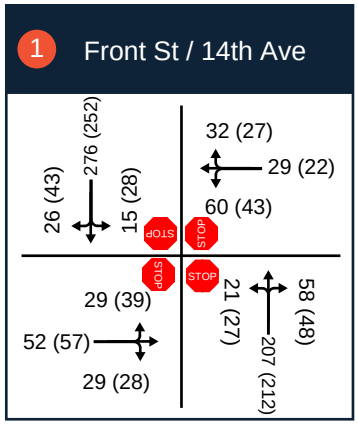
The intersection LOS analysis results for Cumulative 2046 With Project Conditions are summarized in Table 9. LOS calculations sheets for Cumulative 2046 With Project Conditions are included in Appendix G.

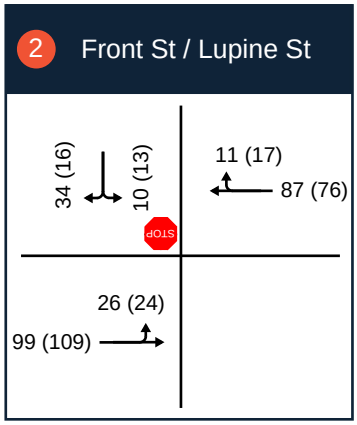
Under the Cumulative Year 2046 scenario, 13th Avenue level of service deteriorates to LOS E in the PM peak hour. During the Cumulative Year 2046 With Project scenario, 13th Avenue reaches LOS F in both the AM and PM peak hours.

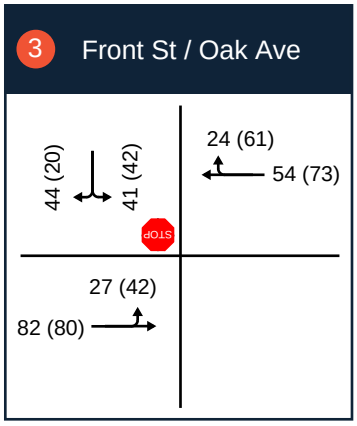
Table 9 – Intersection Level of Service Analysis (Cumulative 2046 With Project Conditions)

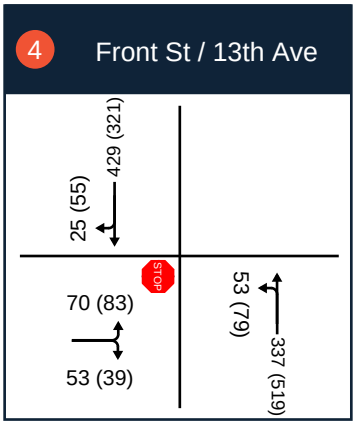
#	Intersection	Control	Peak Hour[1]	Cumulative 2046 Conditions		Cumulative 2046 Plus Project Conditions		Change in Delay
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
1	14th Ave / Front St	AWSC	AM	15.7	C	17.2	C	1.5
			PM	12.5	B	18.0	C	5.5
2	Lupine / Front St	OWSC	AM	9.8	A	10.0	B	0.2
			PM	9.6	A	9.7	A	0.1
3	Oak Ave / Front St	OWSC	AM	10.2	B	12.4	B	2.2
			PM	10.7	B	12.5	B	1.8
4	13th Ave / Front St	OWSC	AM	25.9	D	**63.7**	**F**	37.8
			PM	**35.9**	**E**	**147.4**	**F**	111.5

Notes:
1. AM – morning peak hour, PM – evening peak hour
2. Delay – Entire intersection weighted average control delay expressed in seconds per vehicle for signalized and all way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop-controlled intersections.
3. LOS – Level of Service. **Bold** indicates unacceptable Level of Service. Red indicates a significant impact.









LEGEND

- STOP Stop Sign
- X Study Intersection
- XX AM Volumes
- (XX) PM Volumes

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Figure 9: Cumulative (Year 2046) Peak Hour Traffic Volumes
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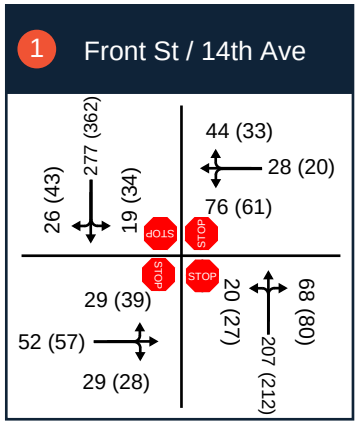

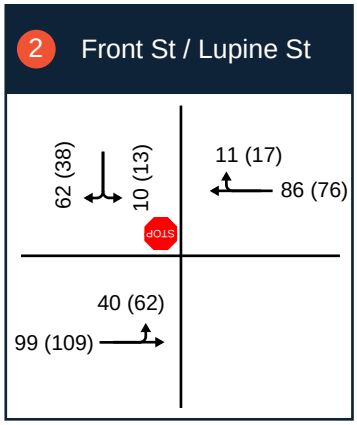

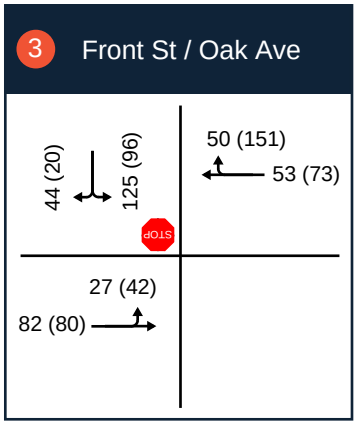

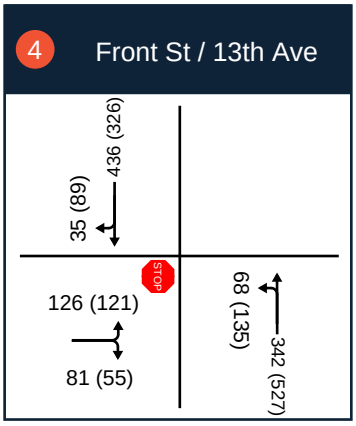

LEGEND

- STOP Stop Sign
- X Study Intersection
- XX AM Volumes
- (XX) PM Volumes

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Figure 10: Cumulative (Year 2046) With Project Peak Hour Traffic Volumes
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5.2 Signal Warrant Analysis – Cumulative (Year 2046) With Project Conditions

The results of the peak hour warrant under Cumulative (Year 2046) With Project Conditions are summarized in Table 10 below. As noted previously, signalization of an intersection may be appropriate if the intersection meets one or more of the nine signal warrants detailed in the CA MUTCD. Warrant 3, Peak Hour, was used here to indicate whether signalization may be appropriate, but even if the peak hour volume warrant is met, a more detailed signal warrant study is recommended before a traffic signal is installed. The intersection does not meet Warrant 3 for either the AM or PM peak hour.

Table 10 – Peak Hour Signal Warrant Results – Cumulative (Year 2046) With Project Conditions

#	Intersection	Control	Meets AM Peak Hour?	Meets PM Peak Hour?
1	14th Ave / Front St	AWSC	No	No

6.0 Conclusions and Recommendations

6.1 Analysis Summary

The analysis presented in this report has identified that intersections 1, 2, and 3 remain within the County's adopted level of service standard (LOS D or better) for all study scenarios. Intersection 4, 13th Avenue and Front Street, is projected to operate below the County's standard LOS during the Near Term With Project Condition and the Cumulative Year 2046 With Project Condition.

Intersection 1 was evaluated using Signal Warrant 3, Peak Hour, for each study scenario. Warrant 3 was not met in any study scenario. However, a more detailed study in the future may be pertinent to consider additional factors, including collision history, to determine further need for a traffic signal.

6.2 Recommended Improvements

Based on the analysis presented in this report, the following improvements are recommended to mitigate the 13th Avenue / Front Street intersection that is projected to operate below the County's LOS standards as noted above:

- Install AWSC at 13th Avenue and Front Street for the Near Term With Project Condition. It is recommended that a further, more detailed study for a multi-way stop per the guidelines of the CA MUTCD be completed prior to installation.
    - The AWSC intersection would improve to LOS B with an average delay of 14.0 seconds for the AM peak hour.
    - The AWSC intersection would improve to LOS C with an average delay of 18.2 seconds for the PM peak hour.
- Install a traffic signal at 13th Avenue and Front Street to improve Cumulative Year 2046 with Project Conditions. It is recommended that a further, more detailed study for a signal per the guidelines of the CA MUTCD and HCM be completed prior to installation.
    - The signalized intersection would improve to LOS A with an average control delay of 7.7 seconds for the AM peak hour.
    - The signalized intersection would improve to LOS B with an average control delay of 12.5 seconds for the PM peak hour.

Level of service calculation sheets for the Mitigated Conditions discussed above are included in Appendix J.

6.3 Project Requirements

Per the analyses completed as part of this TIA, improvements to the intersection of 13th Avenue and Front Street will be necessary to maintain a level of service of D or better. If a signal at the intersection is not in the County's General Plan, then the County should consider adding it and the Project will pay its **proportionate share percentage** for the signal installation. Based on the data in this TIA and the KCAG models that extend up through the year 2046, the Project has the following proportionate share percentage for any unidentified improvements to the intersection of 13th Avenue and Front Street:

$$P_{AM} = T/(T^{46} - T^{E})*100\% = 55/(1088-715) = 14.7\%$$

- P = Project's Proportionate Share
- T = Project AM peak hour trips entering the intersection
- T^{46} = 2046 AM peak hour trips entering the intersection
- T^{E} = Existing AM peak hour trips entering the intersection

$$P_{PM} = T/(T^{46} - T^{E})*100\% = 72/(1253\text{-}821) = 16.7\%$$

- P = Project's Proportionate Share
- T = Project PM peak hour trips entering the intersection
- T^{46} = 2046 PM peak hour trips entering the intersection
- T^{E} = Existing PM peak hour trips entering the intersection

$$P_{AVERAGE} = (P_{AM} + P_{PM})/2 = 15.7\%$$

Appendix A – Level of Service Methodology

The description and procedures for calculating capacity and level of service is found in Transportation Research Board, *Highway Capacity Manual (HCM) 6th edition*. The HCM represents the latest research on capacity and quality of service for transportation facilities and is the basis of design for this TIA.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service (LOS) is a measure of the operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and driver comfort and convenience.

Six levels of service are defined, and letters designate each level, A through F, with A representing the best operating conditions and F the worst. Each LOS represents a range of operating conditions and the driver's perception of these conditions. Safety is not a factor in establishing level of service.

The description of level of service for interrupted flow facilities are given in the table below. Interrupted flow facilities include signalized intersections and unsignalized intersections.

Level of Service	Description
A	Very low delay
B	Low delay
C	Acceptable delay
D	Tolerable delay
E	Limit of acceptable delay
F	Unacceptable delay

Reference: *Highway Capacity Manual, 6th Edition,* Transportation Research Board, 2016

LOS A describes primarily free-flow operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.

LOS B describes reasonably unimpeded operations. The ability to maneuver within the traffic stream is only slightly restricted, and control delays at signalized intersections are not significant.

LOS C describes stable operations, however, ability to maneuver and change lanes in midblock locations may be more restricted than LOS B. Longer queues, adverse signal coordination, or both may contribute to lower travel speeds.

LOS D borders on a range in which small increases in flow may cause substantial increases in delay and decreases in travel speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination thereof.

LOS E is characterized by significant delays and lower travel speeds. Such operations are caused by a combination of adverse signal progression, inappropriate signal timing, high volumes, extensive delays at critical intersections, or high signal density.

LOS F is characterized by urban street flow at extremely low speeds. Intersection congestion is likely critical at signalized locations, with high delays, high volumes, and extensive queuing.

Signalized Intersections

The capacity of a roadway is related primarily to the geometric characteristics of the facility, as well as the composition of the traffic stream of the facility. Geometrics are a fixed characteristic of a facility. At a signalized intersection, an additional element is introduced to the concept of capacity: time allocation. A traffic signal allocates time among conflicting traffic movements that are seeking use of the same physical space. The way in which time is allocated has a significant impact on the operation of the intersection and on the capacity of the intersection and its approaches.

Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, i.e., in the absence of traffic control, geometric delay, incidents, and any other vehicles. Specifically, level of service criteria for traffic signals are staged in terms of average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, cycle length, ratio of green time to cycle length, and the volume-to-capacity ratio for the lane group.

For each intersection analyzed, the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined at the intersection. A level of service designation is given to the control delay to better describe the level of operation. The description of levels of service for signalized intersections can be found below.

Level of Service	Description	Average Vehicle Delay (seconds)
A	Volume-to-capacity ratio is no greater than 1.0. Progression is exceptionally favorable, or the cycle length is very short.	<10
B	Volume-to-capacity ratio is no greater than 1.0. Progression is highly favorable, or the cycle length is very short.	>10-20
C	Volume-to-capacity ratio is no greater than 1.0. Progression is favorable, or the cycle length is moderate.	>20-35
D	Volume-to-capacity ratio is high but no greater than 1.0. Progression is ineffective or cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35-55
E	Volume-to-capacity ratio is high but no greater than 1.0. Progression is unfavorable and cycle length is long. Individual cycle failures are frequent.	>55-80
F	Volume-to-capacity ratio is greater than 1.0. Progression is very poor and cycle length is long. Most cycles fail to clear the queue.	>80

Reference: *Highway Capacity Manual, 6th Edition,* Transportation Research Board, 2016

Unsignalized Intersections

The current procedures for unsignalized intersections are laid out in the HCM. The current procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver comfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, i.e., in the absence of traffic control, geometric delay, incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to stop or slow at the intersection.

The Transportation Research Board *Highway Capacity Manual, 6th Edition*, (HCM) defines level of service (LOS) as "a quantitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst".

Two-Way Stop Controlled Intersections

Two-way stop controlled intersections (TWSC) in which stop signs are used to assign the right-of-way are the most prevalent type of intersection in the United States. At TWSC intersections, the stop-controlled approaches are referred to as minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A LOS designation is given to the expected control delay for each minor movement. LOS is not defined for the intersection as a whole. Control delay is the increased time of travel for a vehicle approaching and passing through a stop-controlled intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection. A description of LOS for TWSC intersections are shown below.

Level of Service	Average Vehicle Delay (seconds)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Reference: *Highway Capacity Manual, 6th Edition,* Transportation Research Board, 2016

LOS ratings for stop sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At one- or two-way stop controlled intersections, the control delay is calculated for each movement, not the intersection as a whole. For approaches consisting of a single lane, the control delay is computed as the average of all movements in that lane. The delay ranges for unsignalized intersections are lower than for signalized intersections because drivers expect less delay at stop-controlled intersections.

Each of the study intersections were analyzed using Synchro Version 11 software and HCM 2016 methodology. The LOS assessment under all scenarios is based on current traffic controls unless otherwise noted.

Appendix B – Existing Traffic Counts

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

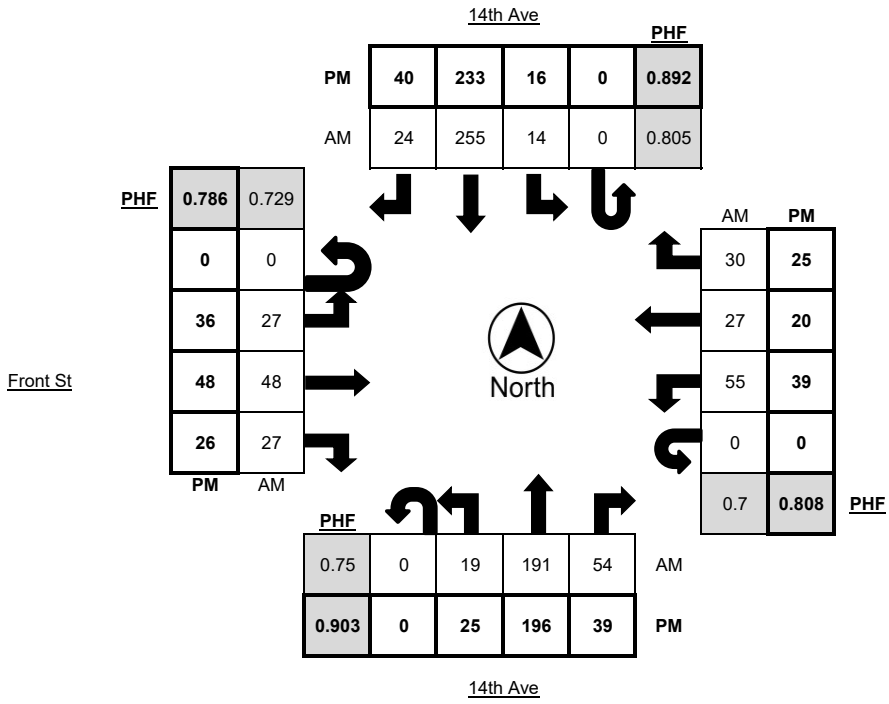
LOCATION Front St @ 14th Ave
LATITUDE 36.3158
COUNTY Kings
LONGITUDE -119.7090
COLLECTION DATE Wednesday, May 18, 2022
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	4	28	1	2	0	2	37	3	1	0	1	3	7	1	0	4	3	1	0
7:15 AM - 7:30 AM	0	5	39	0	3	0	0	44	0	4	0	9	5	4	1	0	6	4	3	1
7:30 AM - 7:45 AM	0	5	44	4	6	0	3	60	6	2	0	7	8	5	1	0	14	11	7	2
7:45 AM - 8:00 AM	0	2	50	11	2	0	2	81	4	3	0	7	13	5	1	0	23	5	12	0
8:00 AM - 8:15 AM	0	8	51	29	3	0	4	78	9	3	0	9	14	12	1	0	11	7	6	1
8:15 AM - 8:30 AM	0	4	46	10	1	0	5	36	5	4	0	4	13	5	0	0	7	4	5	2
8:30 AM - 8:45 AM	0	4	42	6	4	0	1	35	4	1	0	6	8	5	1	0	7	4	1	0
8:45 AM - 9:00 AM	0	2	39	5	2	0	3	38	9	2	0	12	11	4	1	0	8	3	2	0
TOTAL	**0**	**34**	**339**	**66**	**23**	**0**	**20**	**409**	**40**	**20**	**0**	**55**	**75**	**47**	**7**	**0**	**80**	**41**	**37**	**6**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	7	47	9	2	0	4	60	12	1	0	9	12	7	2	0	11	4	4	1
4:15 PM - 4:30 PM	0	5	41	10	3	0	5	62	6	3	0	5	9	7	0	0	4	5	6	0
4:30 PM - 4:45 PM	0	4	56	12	2	0	6	63	12	1	0	10	14	2	1	0	13	6	7	0
4:45 PM - 5:00 PM	0	9	52	8	4	0	1	48	10	1	0	12	13	10	0	0	11	5	8	0
5:00 PM - 5:15 PM	0	8	47	10	0	0	2	54	8	5	0	9	10	5	1	0	5	5	6	0
5:15 PM - 5:30 PM	0	7	51	5	2	0	2	48	14	2	0	5	14	8	0	0	6	4	10	1
5:30 PM - 5:45 PM	0	4	44	13	1	0	7	53	8	2	0	16	12	9	1	0	10	8	10	0
5:45 PM - 6:00 PM	0	8	49	13	2	0	6	52	13	3	0	5	7	4	0	0	5	10	2	1
TOTAL	**0**	**52**	**387**	**80**	**16**	**0**	**33**	**440**	**83**	**18**	**0**	**71**	**91**	**52**	**5**	**0**	**65**	**47**	**53**	**3**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	0	19	191	54	12	0	14	255	24	12	0	27	48	27	3	0	55	27	30	5
4:00 PM - 5:00 PM	0	25	196	39	11	0	16	233	40	6	0	36	48	26	3	0	39	20	25	1

	PHF	Trucks
AM	0.810	4.2%
PM	0.906	2.8%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

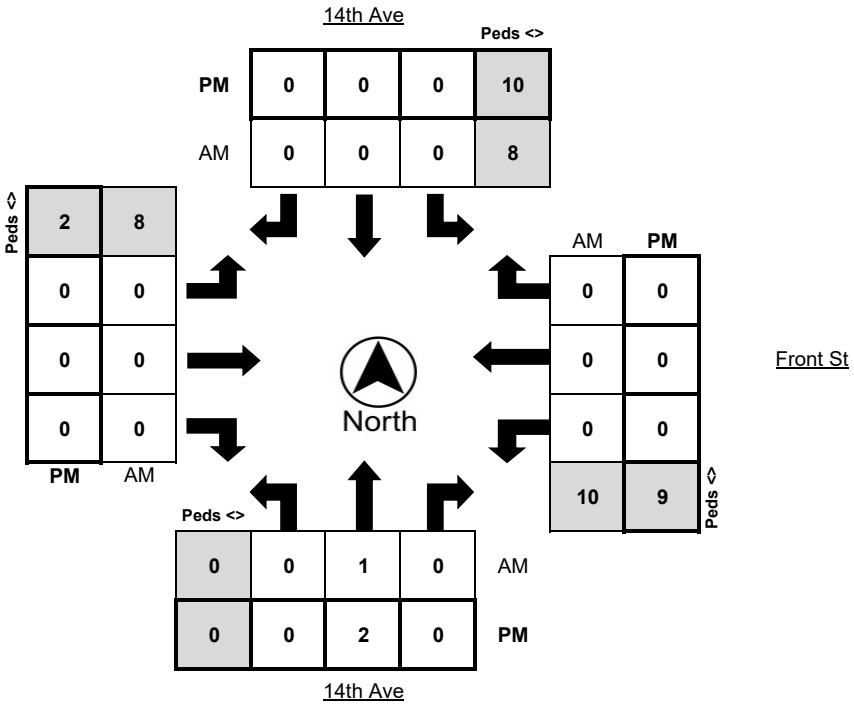
LOCATION Front St @ 14th Ave
LATITUDE 36.3158
COUNTY Kings
LONGITUDE -119.7090
COLLECTION DATE Wednesday, May 18, 2022
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:45 AM - 8:00 AM	0	1	0	8	0	0	0	0	0	0	0	7	0	0	0	2
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	0
TOTAL	**0**	**1**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**10**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	7	0	0	0	0	0	0	0	1	0	0	0	2
4:15 PM - 4:30 PM	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM - 4:45 PM	0	1	0	1	0	0	0	0	0	0	0	2	0	0	0	0
4:45 PM - 5:00 PM	0	1	0	0	0	0	0	0	0	0	0	5	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	4	0	1	0	0	0	0	0	1	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	4	0	0	0	0	0	0	0	0	1	0	0	0
TOTAL	**0**	**2**	**0**	**18**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**11**	**1**	**0**	**0**	**2**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	1	0	8	0	0	0	0	0	0	0	10	0	0	0	8
4:00 PM - 5:00 PM	0	2	0	10	0	0	0	0	0	0	0	9	0	0	0	2

	Bikes	Peds
AM Peak Total	1	26
PM Peak Total	**2**	**21**



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310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

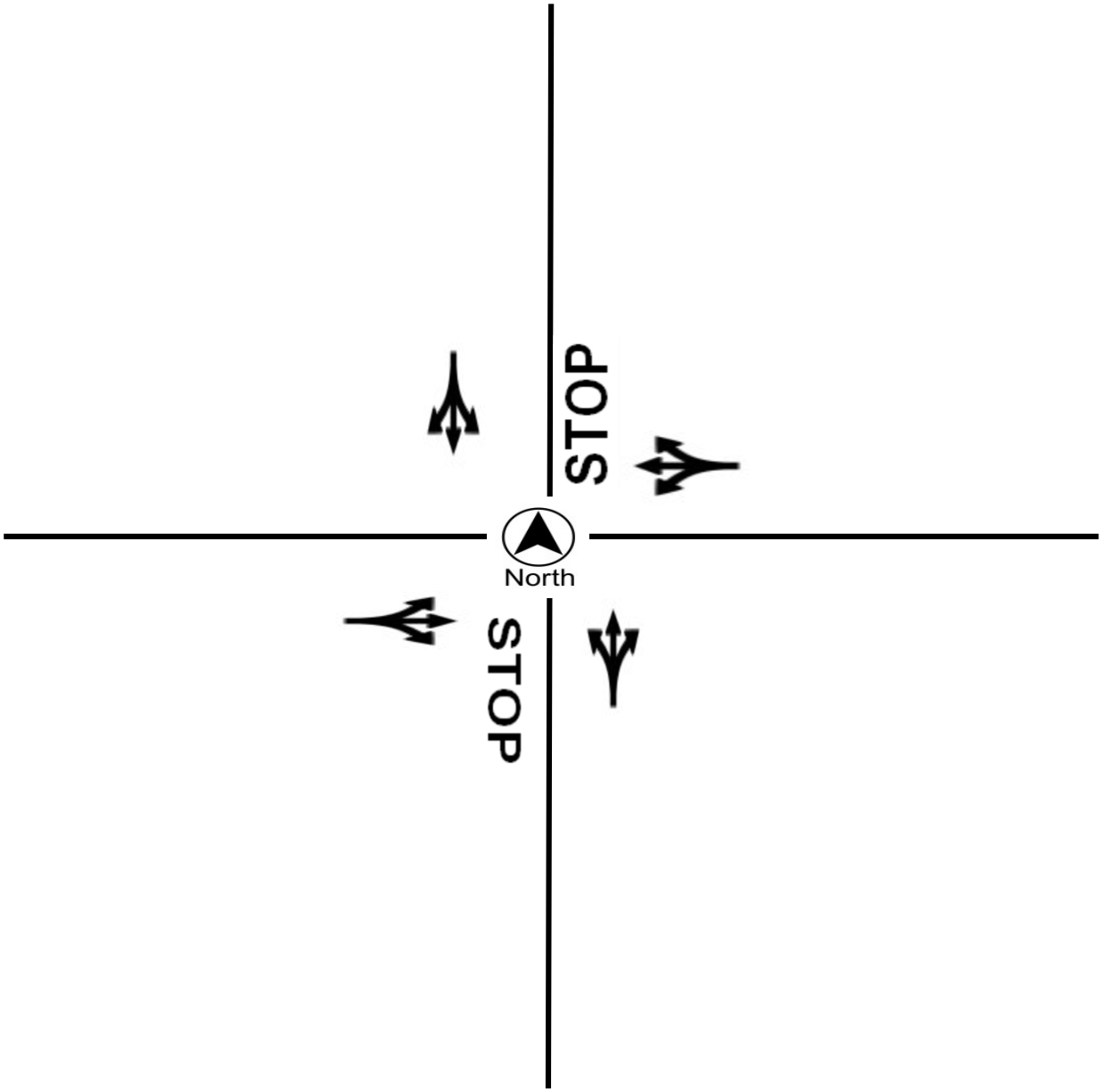
Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

LOCATION	Front St @ 14th Ave	**N/S STREET**	14th Ave
COUNTY	Kings	**E/W STREET**	Front St
COLLECTION DATE	Wednesday, May 18, 2022	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	Two-Way Stop

COMMENTS



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Hanford, CA 93230

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Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

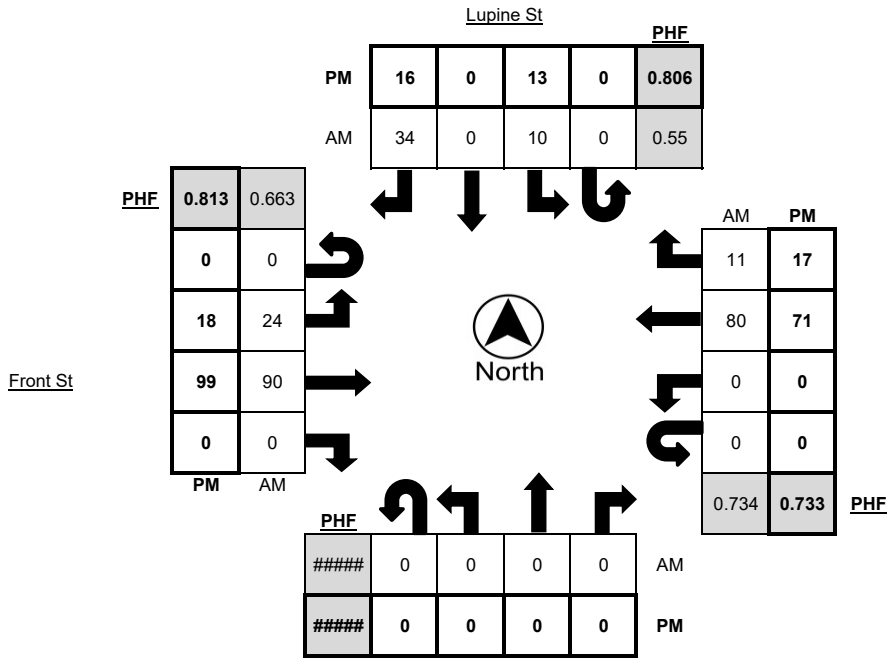
LOCATION Lupine St @ Front St
LATITUDE 36.3167
COUNTY Kings
LONGITUDE -119.7038
COLLECTION DATE Wednesday, May 18, 2022
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	0	0	0	0	0	1	0	4	0	0	0	4	0	0	0	0	6	3	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	2	0	4	0	0	3	6	0	0	0	0	13	3	2
7:30 AM - 7:45 AM	0	0	0	0	0	0	3	0	12	0	0	0	13	0	0	0	0	17	6	1
7:45 AM - 8:00 AM	0	0	0	0	0	0	5	0	15	0	0	7	25	0	1	0	0	29	2	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	1	0	6	0	0	12	31	0	0	0	0	20	1	1
8:15 AM - 8:30 AM	0	0	0	0	0	0	1	0	1	0	0	5	21	0	0	0	0	14	2	2
8:30 AM - 8:45 AM	0	0	0	0	0	0	4	0	3	1	1	4	10	0	0	0	0	9	6	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	7	0	3	1	0	3	18	0	0	0	0	8	3	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**0**	**48**	**2**	**1**	**34**	**128**	**0**	**1**	**0**	**0**	**116**	**26**	**6**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	0	0	0	0	4	0	2	0	0	6	18	0	2	0	0	22	8	1
4:15 PM - 4:30 PM	0	0	0	0	0	0	6	0	3	1	0	6	22	0	0	0	0	14	3	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	6	0	0	4	32	0	0	0	0	16	4	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	3	0	5	0	0	2	27	0	0	0	0	19	2	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	3	0	0	5	15	0	0	0	0	16	4	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	2	0	3	1	0	3	22	0	0	0	0	24	4	1
5:30 PM - 5:45 PM	0	0	0	0	0	0	5	0	5	1	0	4	34	0	0	0	0	22	3	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	2	0	3	0	0	9	17	0	1	0	0	13	5	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**30**	**3**	**0**	**39**	**187**	**0**	**3**	**0**	**0**	**146**	**33**	**2**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	0	0	0	0	0	0	10	0	34	0	0	24	90	0	1	0	0	80	11	4
4:00 PM - 5:00 PM	0	0	0	0	0	0	13	0	16	1	0	18	99	0	2	0	0	71	17	1

	PHF	Trucks
AM	0.750	2.0%
PM	0.944	1.7%



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Hanford, CA 93230

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Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

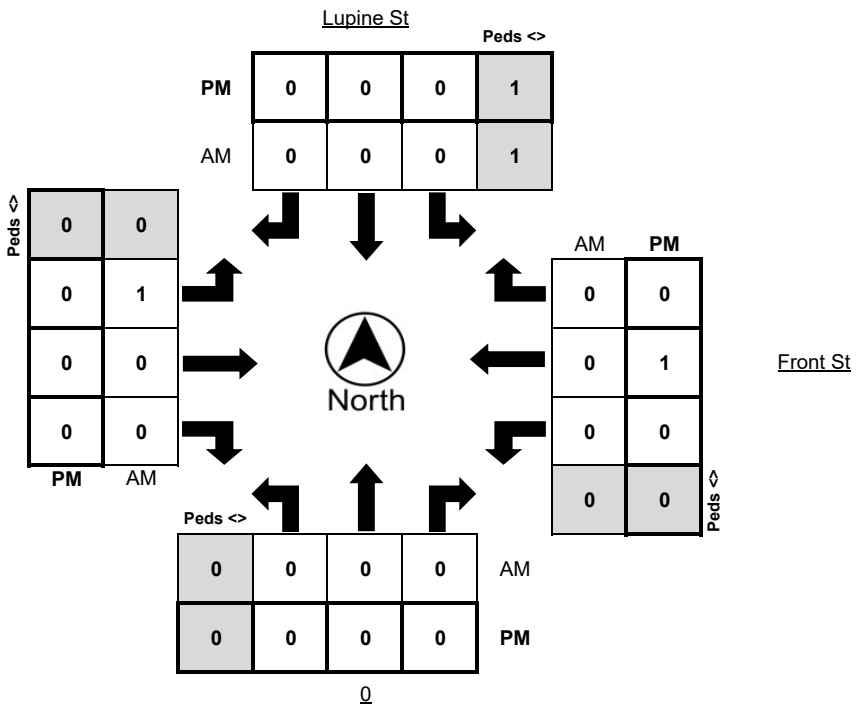
LOCATION Lupine St @ Front St
LATITUDE 36.3167
COUNTY Kings
LONGITUDE -119.7038
COLLECTION DATE Wednesday, May 18, 2022
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
4:15 PM - 4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0

	Bikes	Peds
AM Peak Total	1	1
PM Peak Total	1	1



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

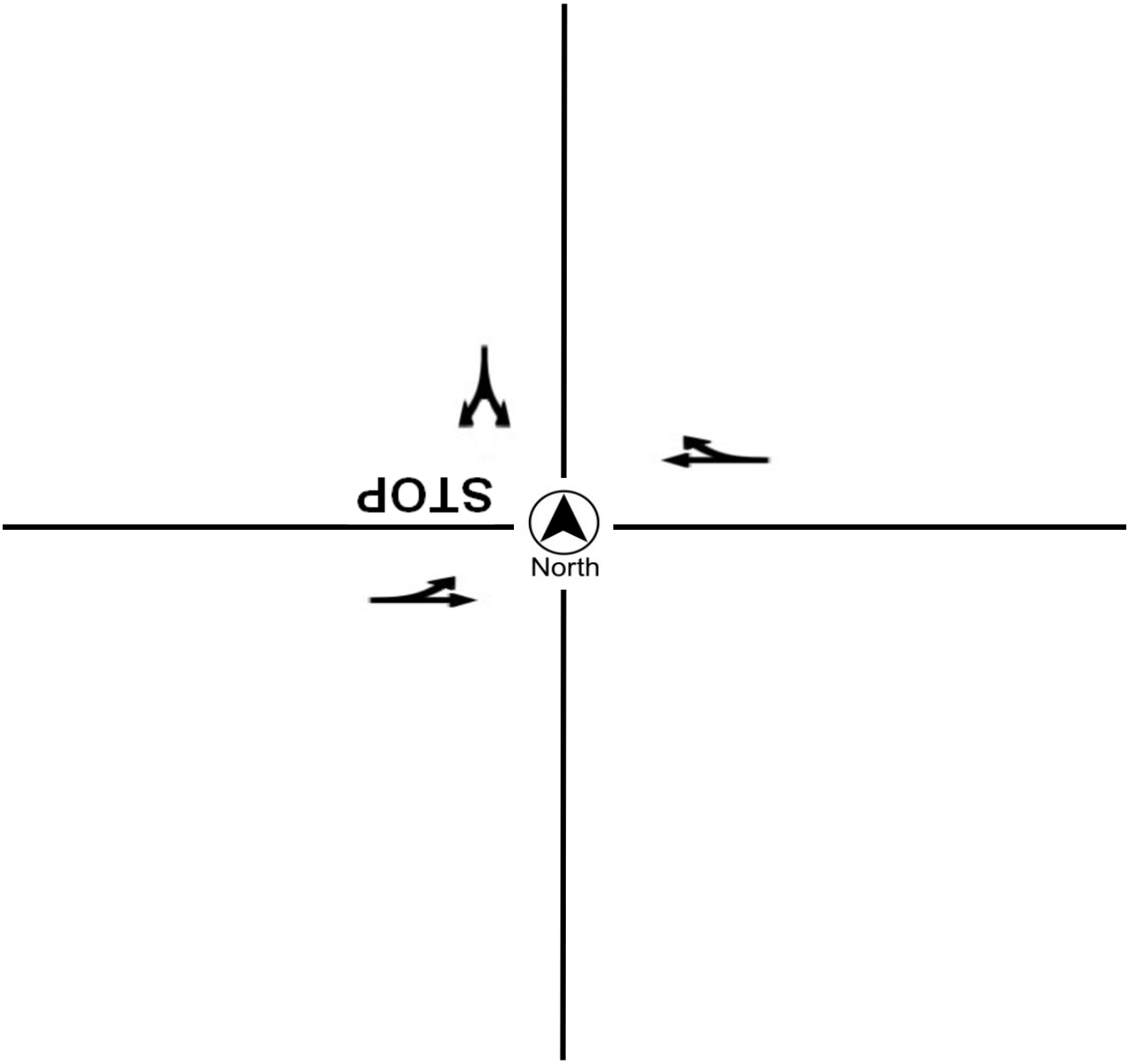
Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

LOCATION	Lupine St @ Front St	**N/S STREET**	Lupine St
COUNTY	Kings	**E/W STREET**	Front St
COLLECTION DATE	Wednesday, May 18, 2022	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way Stop

COMMENTS



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Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

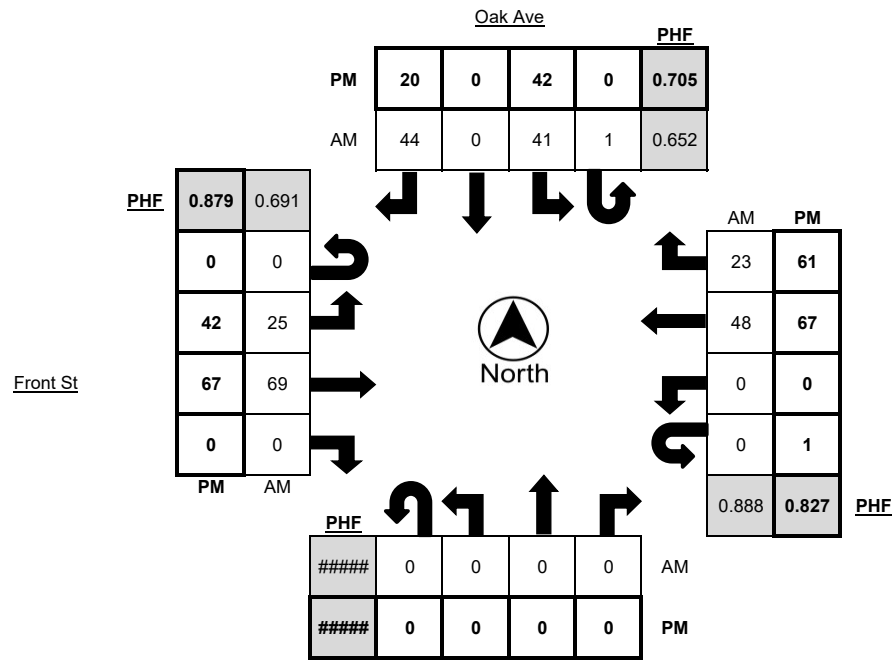
LOCATION Oak Ave @ Front St
LATITUDE 36.3172
COUNTY Kings
LONGITUDE -119.7006
COLLECTION DATE Wednesday, May 18, 2022
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	0	0	0	0	0	5	0	2	0	0	1	4	0	0	0	0	8	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	14	0	5	1	0	0	8	0	0	0	0	12	7	1
7:30 AM - 7:45 AM	0	0	0	0	0	1	19	0	13	0	0	1	14	0	0	0	0	10	6	1
7:45 AM - 8:00 AM	0	0	0	0	0	0	11	0	18	0	0	6	17	0	0	0	0	15	4	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	5	0	7	0	0	15	19	0	1	0	0	13	7	1
8:15 AM - 8:30 AM	0	0	0	0	0	0	6	0	6	0	0	3	19	0	0	0	0	10	6	2
8:30 AM - 8:45 AM	0	0	0	0	0	0	13	0	3	0	0	1	13	0	1	0	0	10	6	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	8	0	3	0	0	4	21	0	1	0	0	8	8	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**1**	**81**	**0**	**57**	**1**	**0**	**31**	**115**	**0**	**3**	**0**	**0**	**86**	**44**	**5**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	0	0	0	0	6	0	5	0	0	6	16	0	0	0	0	25	14	1
4:15 PM - 4:30 PM	0	0	0	0	0	0	11	0	2	0	0	10	18	0	0	1	0	16	12	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	11	0	5	0	0	16	15	0	0	0	0	13	14	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	14	0	8	0	0	10	18	0	0	0	0	13	21	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	7	0	2	0	0	2	14	0	0	0	0	18	12	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	6	0	5	0	0	5	18	0	0	0	0	23	16	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	8	0	9	0	0	15	25	0	0	0	0	15	11	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	15	0	5	0	0	9	8	0	0	0	0	12	13	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**78**	**0**	**41**	**0**	**0**	**73**	**132**	**0**	**0**	**1**	**0**	**135**	**113**	**1**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	0	0	0	0	0	1	41	0	44	0	0	25	69	0	1	0	0	48	23	4
4:00 PM - 5:00 PM	0	0	0	0	0	0	42	0	20	0	0	42	67	0	0	1	0	67	61	1

	PHF	Trucks
AM	0.884	2.0%
PM	0.893	0.3%



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Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

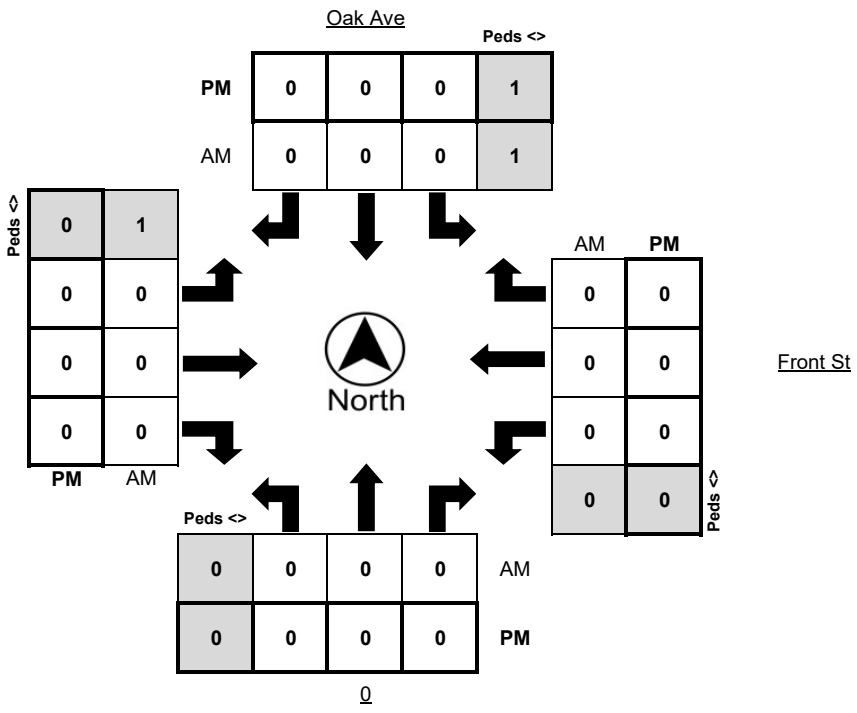
LOCATION Oak Ave @ Front St
LATITUDE 36.3172
COUNTY Kings
LONGITUDE -119.7006
COLLECTION DATE Wednesday, May 18, 2022
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM - 8:45 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:00 PM - 5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	2
PM Peak Total	0	1



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

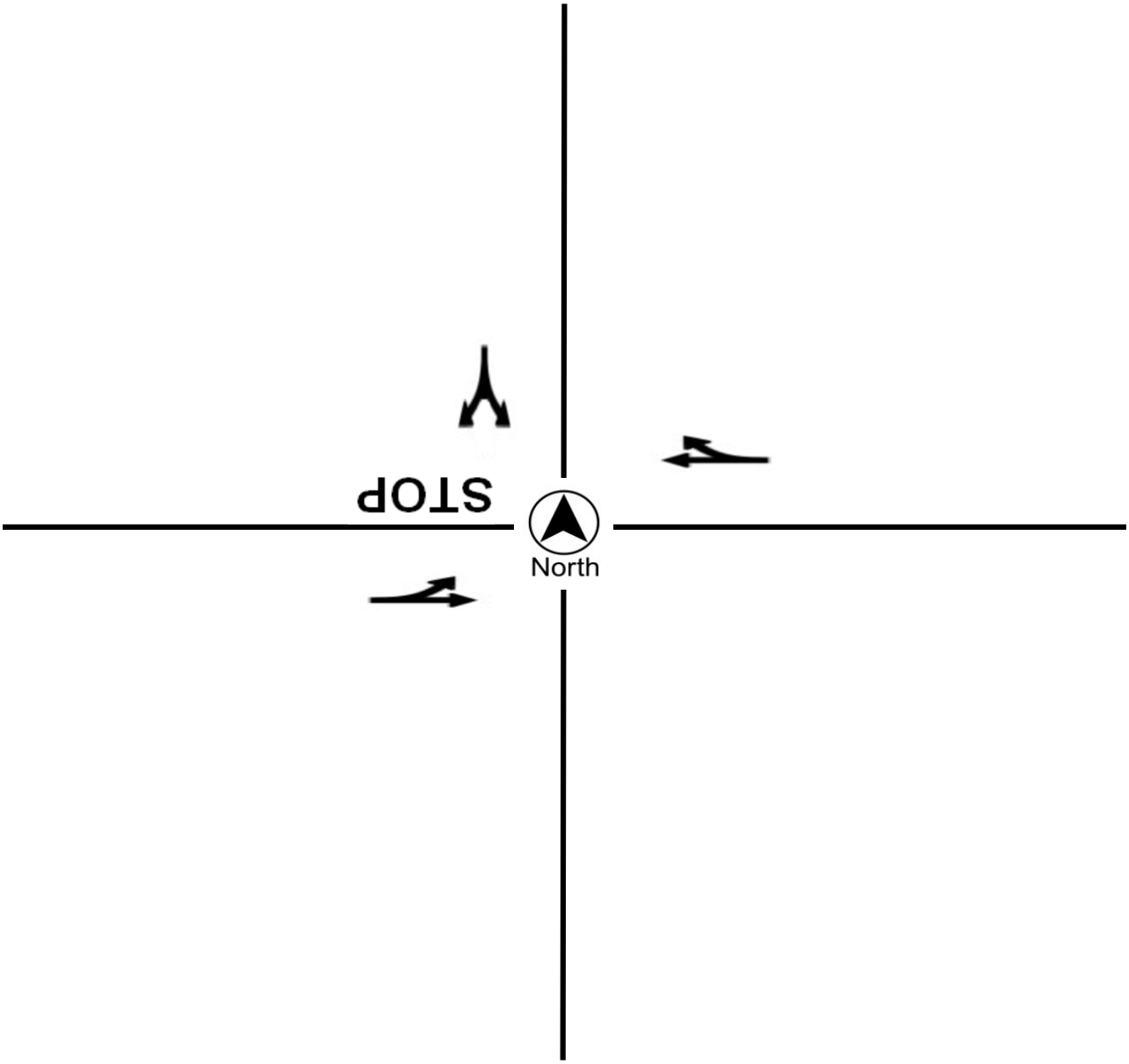
Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

LOCATION	Oak Ave @ Front St	**N/S STREET**	Oak Ave
COUNTY	Kings	**E/W STREET**	Front St
COLLECTION DATE	Wednesday, May 18, 2022	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way Stop

COMMENTS



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Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

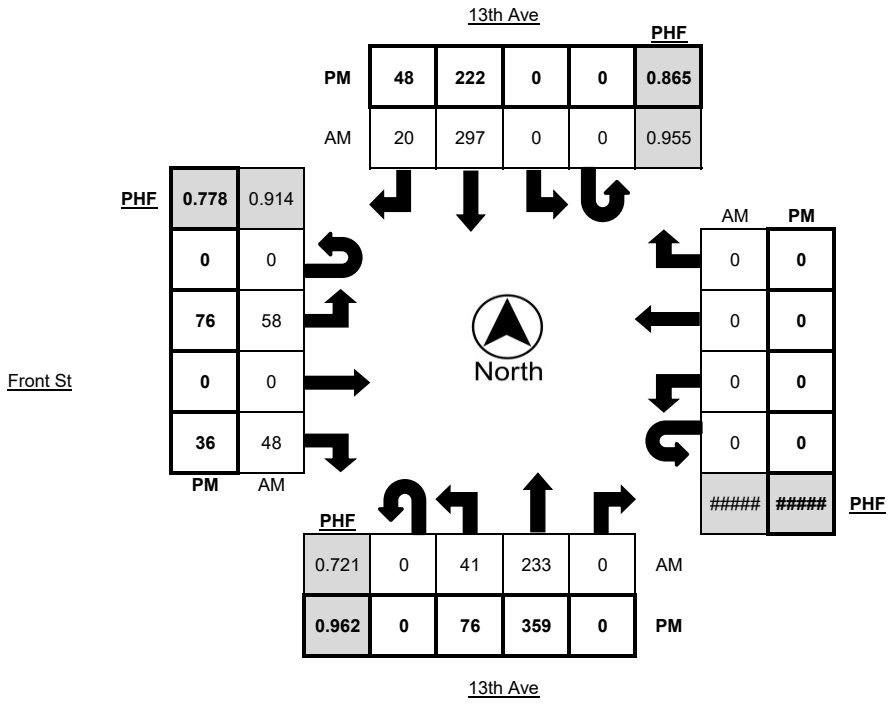
LOCATION 13th Ave @ Front St
LATITUDE 36.3182
COUNTY Kings
LONGITUDE -119.6910
COLLECTION DATE Wednesday, May 18, 2022
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
7:00 AM - 7:15 AM	0	4	29	0	2	0	0	64	5	2	0	2	0	6	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	13	36	0	2	0	0	70	6	0	0	11	0	12	1	0	0	0	0	0
7:30 AM - 7:45 AM	0	8	66	0	2	0	0	78	5	2	0	13	0	16	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	16	79	0	1	0	0	78	4	0	0	16	0	12	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	4	52	0	1	0	0	71	5	5	0	18	0	8	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	8	57	0	5	0	0	50	9	2	0	17	0	7	1	0	0	0	0	0
8:30 AM - 8:45 AM	0	6	72	0	0	0	0	54	9	0	0	22	0	4	2	0	0	0	0	0
8:45 AM - 9:00 AM	0	4	85	0	1	0	0	68	12	1	0	19	0	10	1	0	0	0	0	0
TOTAL	**0**	**63**	**476**	**0**	**14**	**0**	**0**	**533**	**55**	**12**	**0**	**118**	**0**	**75**	**5**	**0**	**0**	**0**	**0**	**0**

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	22	91	0	1	0	0	63	15	2	0	15	0	7	2	0	0	0	0	0
4:15 PM - 4:30 PM	0	17	87	0	0	0	0	55	11	0	0	14	0	15	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	15	97	0	0	0	0	53	10	0	0	16	0	9	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	22	84	0	1	0	0	51	12	1	0	31	0	5	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	15	95	0	1	0	0	58	15	1	0	15	0	3	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	23	86	0	1	0	0	42	14	1	0	25	0	4	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	19	71	0	0	0	0	41	9	0	0	22	0	10	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	15	73	0	0	0	0	53	10	0	0	16	0	5	0	0	0	0	0	0
TOTAL	**0**	**148**	**684**	**0**	**4**	**0**	**0**	**416**	**96**	**5**	**0**	**154**	**0**	**58**	**2**	**0**	**0**	**0**	**0**	**0**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
7:15 AM - 8:15 AM	0	41	233	0	6	0	0	297	20	7	0	58	0	48	1	0	0	0	0	0
4:00 PM - 5:00 PM	0	76	359	0	2	0	0	222	48	3	0	76	0	36	2	0	0	0	0	0

	PHF	Trucks
AM	0.850	2.0%
PM	0.959	0.9%



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Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

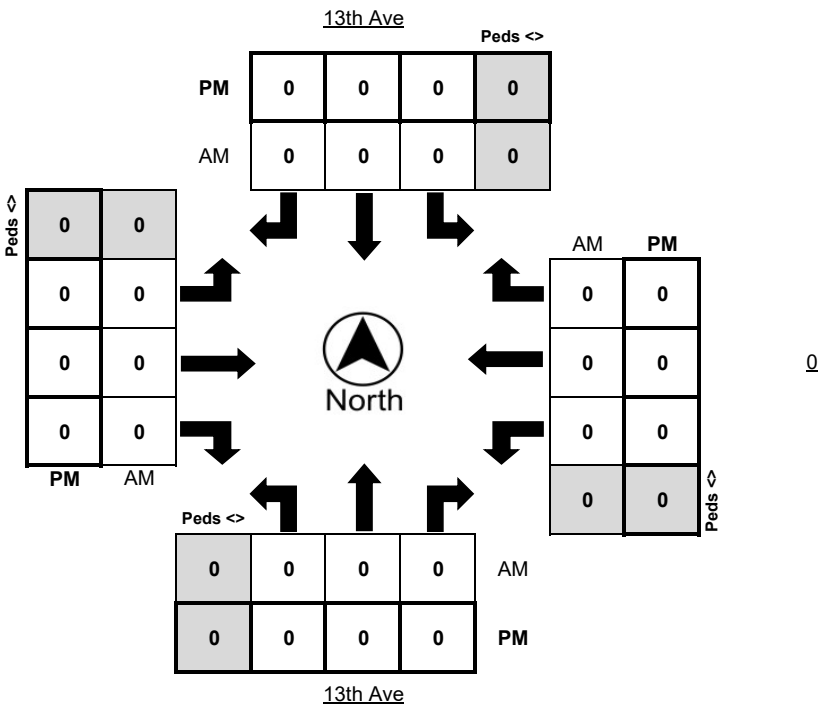
LOCATION 13th Ave @ Front St
LATITUDE 36.3182
COUNTY Kings
LONGITUDE -119.6910
COLLECTION DATE Wednesday, May 18, 2022
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	0
PM Peak Total	**0**	**0**



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www.metrotrafficdata.com

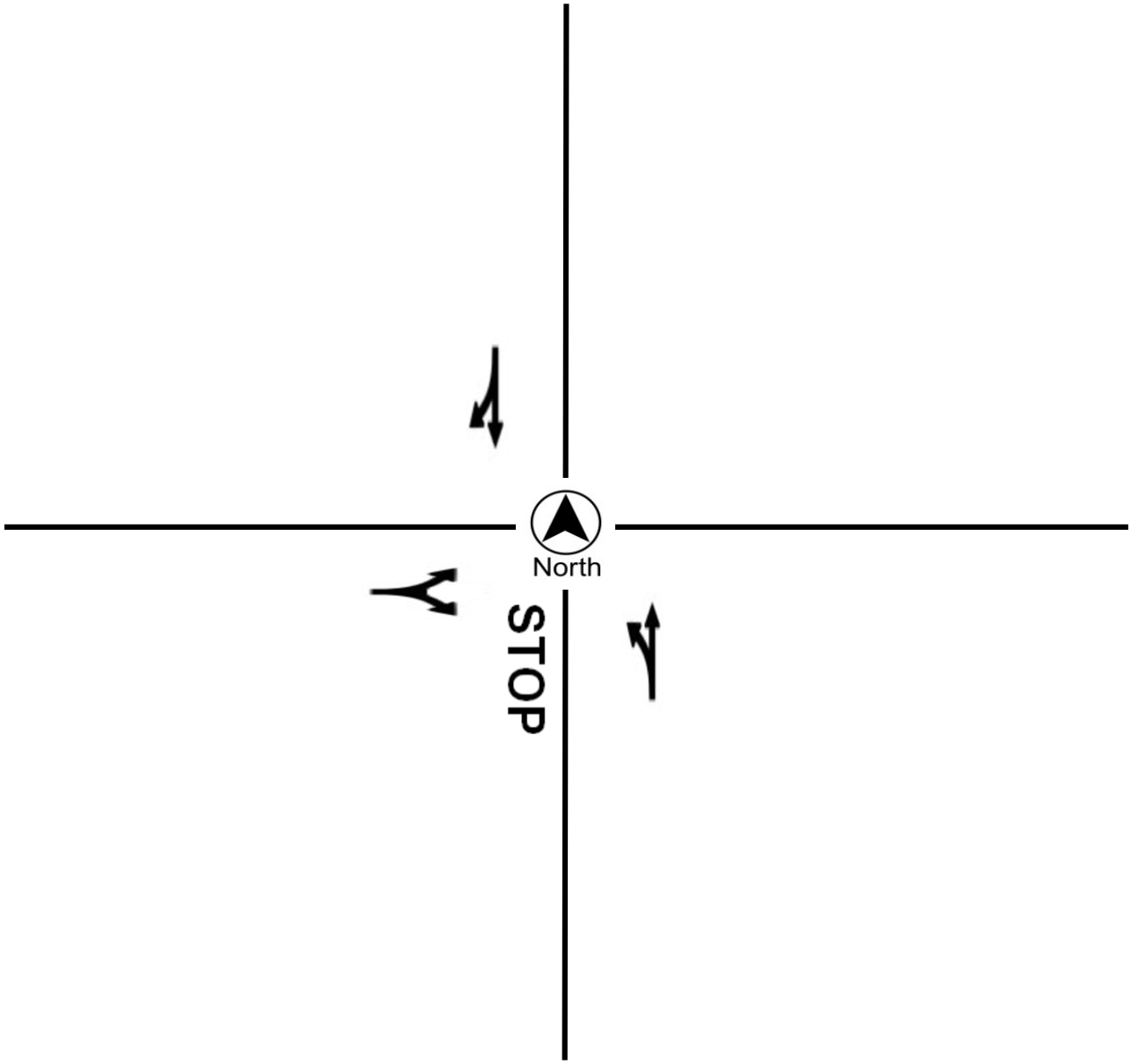
Turning Movement Report

Prepared For:

4 Creeks
324 S. Santa Fe St, Suite A
Visalia, CA 93292

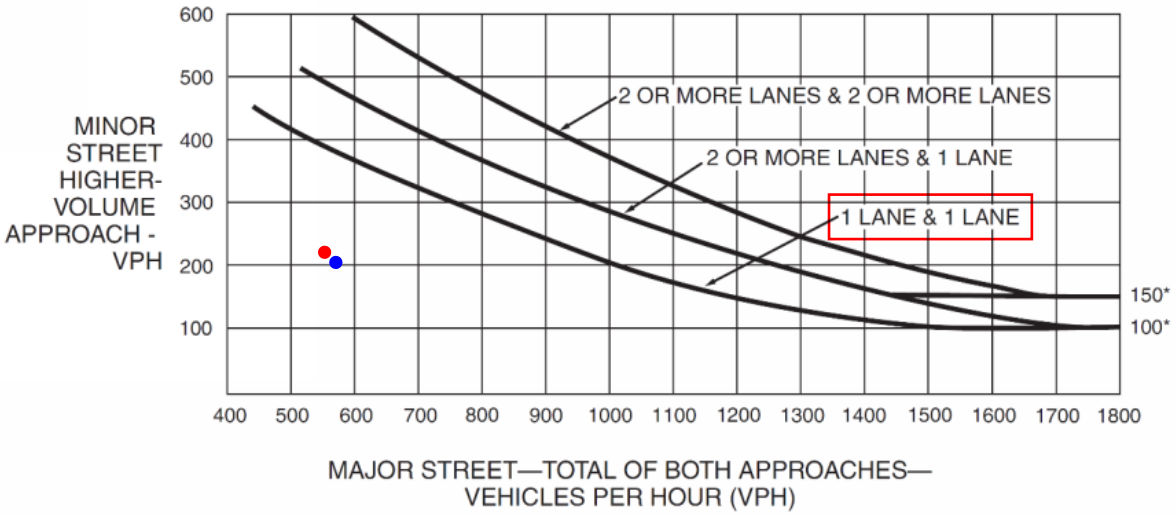
LOCATION	13th Ave @ Front St	**N/S STREET**	13th Ave
COUNTY	Kings	**E/W STREET**	Front St
COLLECTION DATE	Wednesday, May 18, 2022	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way Stop

COMMENTS



Appendix C – 14th Avenue & Front Street Signal Warrant 3 Worksheets

Figure 4C-3. Warrant 3, Peak Hour

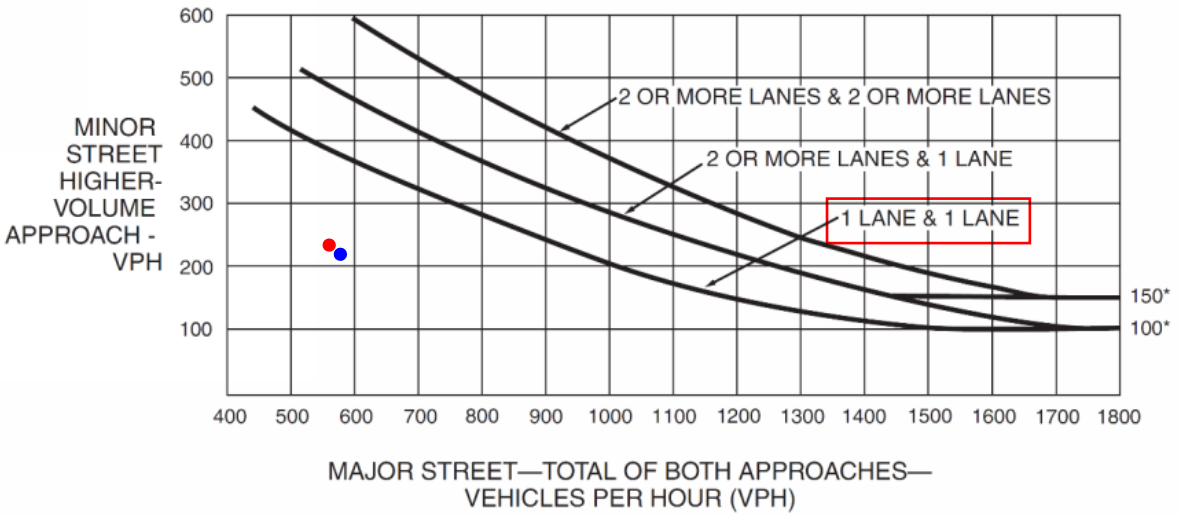


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LEGEND

- AM Peak Hour
- PM Peak Hour

Figure 4C-3. Warrant 3, Peak Hour



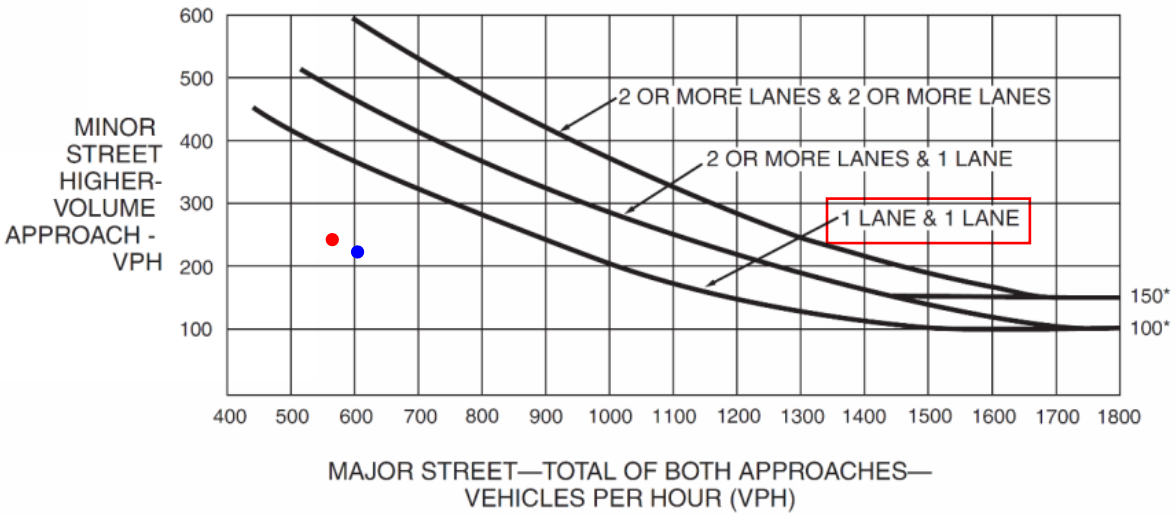
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LEGEND

- AM Peak Hour
- PM Peak Hour

NEAR TERM WITH PROJECT CONDITIONS

Figure 4C-3. Warrant 3, Peak Hour



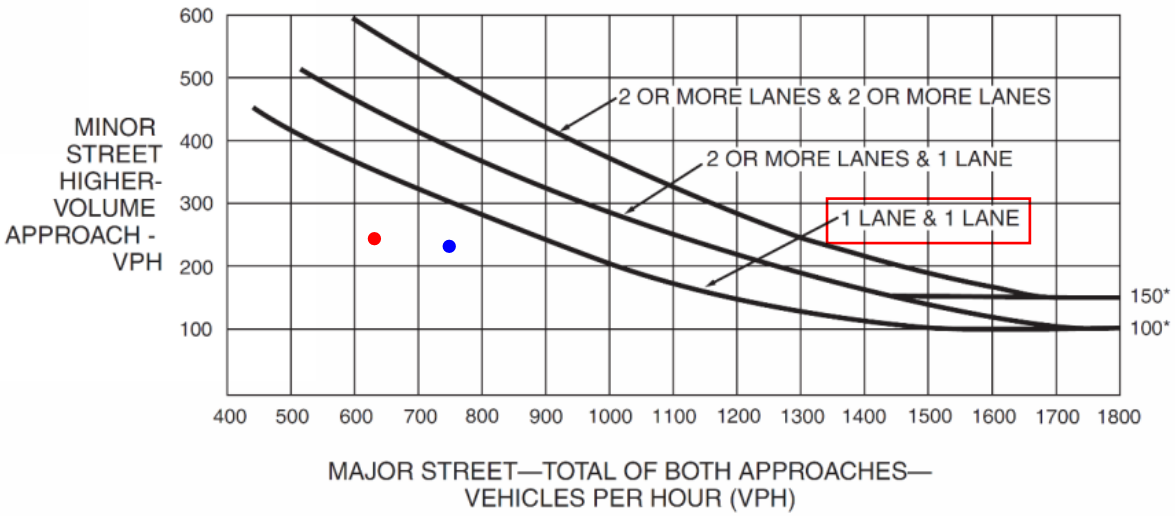
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LEGEND

- AM Peak Hour
- PM Peak Hour

CUMULATIVE (YEAR 2046) WITH PROJECT CONDITIONS

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LEGEND

- AM Peak Hour
- PM Peak Hour

Appendix D – Existing Conditions Intersection Level of Service Worksheets

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	48	27	57	27	30	19	191	54	14	255	24
Future Vol, veh/h	27	48	27	57	27	30	19	191	54	14	255	24
Peak Hour Factor	0.73	0.73	0.73	0.70	0.70	0.70	0.75	0.75	0.75	0.81	0.81	0.81
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	37	66	37	81	39	43	25	255	72	17	315	30
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	11.5	14.3	14.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	26%	50%	5%
Vol Thru, %	72%	47%	24%	87%
Vol Right, %	20%	26%	26%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	264	102	114	293
LT Vol	19	27	57	14
Through Vol	191	48	27	255
RT Vol	54	27	30	24
Lane Flow Rate	352	140	163	362
Geometry Grp	1	1	1	1
Degree of Util (X)	0.525	0.237	0.276	0.544
Departure Headway (Hd)	5.369	6.115	6.105	5.417
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	669	584	585	662
Service Time	3.428	4.193	4.181	3.477
HCM Lane V/C Ratio	0.526	0.24	0.279	0.547
HCM Control Delay	14.3	11.1	11.5	14.8
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	3.1	0.9	1.1	3.3

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	90	80	11	10	34
Future Vol, veh/h	26	90	80	11	10	34
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	73	73	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	136	110	15	18	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	125	0	-	0	333	119
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	215	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1462	-	-	-	662	933
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	821	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1462	-	-	-	643	932
Mov Cap-2 Maneuver	-	-	-	-	643	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	821	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1462	-	-	-	846
HCM Lane V/C Ratio	0.027	-	-	-	0.095
HCM Control Delay (s)	7.5	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	73	47	24	41	44
Future Vol, veh/h	27	73	47	24	41	44
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	89	89	65	65
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	39	106	53	27	63	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	80	0	-	0	252	68
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	185	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1531	-	-	-	741	1001
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	852	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1531	-	-	-	721	1000
Mov Cap-2 Maneuver	-	-	-	-	721	-
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1531	-	-	-	843
HCM Lane V/C Ratio	0.026	-	-	-	0.155
HCM Control Delay (s)	7.4	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	65	49	48	233	297	23
Future Vol, veh/h	65	49	48	233	297	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	72	72	96	96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	71	54	67	324	309	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	779	321	333	0	-	0
Stage 1	321	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	366	722	1232	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	639	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	342	722	1232	-	-	-
Mov Cap-2 Maneuver	342	-	-	-	-	-
Stage 1	689	-	-	-	-	-
Stage 2	639	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	1.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1232	-	442	-	-
HCM Lane V/C Ratio	0.054	-	0.283	-	-
HCM Control Delay (s)	8.1	0	16.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.2	-	-

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	53	26	41	20	25	25	196	44	26	233	40
Future Vol, veh/h	36	53	26	41	20	25	25	196	44	26	233	40
Peak Hour Factor	0.79	0.79	0.79	0.81	0.81	0.81	0.90	0.90	0.90	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	46	67	33	51	25	31	28	218	49	29	262	45
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.4	10	11.7	12.5
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	31%	48%	9%
Vol Thru, %	74%	46%	23%	78%
Vol Right, %	17%	23%	29%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	115	86	299
LT Vol	25	36	41	26
Through Vol	196	53	20	233
RT Vol	44	26	25	40
Lane Flow Rate	294	146	106	336
Geometry Grp	1	1	1	1
Degree of Util (X)	0.416	0.23	0.17	0.471
Departure Headway (Hd)	5.085	5.679	5.755	5.047
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	707	632	622	712
Service Time	3.119	3.72	3.798	3.08
HCM Lane V/C Ratio	0.416	0.231	0.17	0.472
HCM Control Delay	11.7	10.4	10	12.5
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	2.1	0.9	0.6	2.5

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	99	70	17	13	16
Future Vol, veh/h	24	99	70	17	13	16
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	28	116	82	20	15	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	102	0	-	0	265	93
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	173	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1484	-	-	-	722	961
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	855	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1484	-	-	-	708	960
Mov Cap-2 Maneuver	-	-	-	-	708	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	855	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1484	-	-	-	828
HCM Lane V/C Ratio	0.019	-	-	-	0.041
HCM Control Delay (s)	7.5	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	70	67	61	42	20
Future Vol, veh/h	42	70	67	61	42	20
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	83	83	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	80	81	73	59	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	154	0	-	0	295	119
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1426	-	-	-	696	933
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1426	-	-	-	672	932
Mov Cap-2 Maneuver	-	-	-	-	672	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	854	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1426	-	-	-	738
HCM Lane V/C Ratio	0.033	-	-	-	0.118
HCM Control Delay (s)	7.6	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	76	36	76	359	222	52
Future Vol, veh/h	76	36	76	359	222	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	96	96	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	46	79	374	255	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	817	285	315	0	-	0
Stage 1	285	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	346	754	1245	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	589	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	318	754	1245	-	-	-
Mov Cap-2 Maneuver	318	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	589	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.5	1.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1245	-	391	-	-
HCM Lane V/C Ratio	0.064	-	0.367	-	-
HCM Control Delay (s)	8.1	0	19.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.7	-	-

Appendix E – Existing Plus Project Conditions Intersection Level of Service Worksheets

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	48	27	65	27	36	19	191	59	16	255	24
Future Vol, veh/h	27	48	27	65	27	36	19	191	59	16	255	24
Peak Hour Factor	0.73	0.73	0.73	0.70	0.70	0.70	0.75	0.75	0.75	0.81	0.81	0.81
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	37	66	37	93	39	51	25	255	79	20	315	30
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.3	12.1	14.9	15.4
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	26%	51%	5%
Vol Thru, %	71%	47%	21%	86%
Vol Right, %	22%	26%	28%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	269	102	128	295
LT Vol	19	27	65	16
Through Vol	191	48	27	255
RT Vol	59	27	36	24
Lane Flow Rate	359	140	183	364
Geometry Grp	1	1	1	1
Degree of Util (X)	0.543	0.241	0.313	0.558
Departure Headway (Hd)	5.454	6.22	6.153	5.518
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	656	573	580	648
Service Time	3.523	4.312	4.236	3.587
HCM Lane V/C Ratio	0.547	0.244	0.316	0.562
HCM Control Delay	14.9	11.3	12.1	15.4
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	3.3	0.9	1.3	3.5

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	90	80	11	10	48
Future Vol, veh/h	33	90	80	11	10	48
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	73	73	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	136	110	15	18	87

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	125	0	-	0	355	119
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	237	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1462	-	-	-	643	933
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1462	-	-	-	619	932
Mov Cap-2 Maneuver	-	-	-	-	619	-
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	802	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1462	-	-	-	857
HCM Lane V/C Ratio	0.034	-	-	-	0.123
HCM Control Delay (s)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	73	47	37	83	44
Future Vol, veh/h	27	73	47	37	83	44
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	89	89	65	65
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	39	106	53	42	128	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	95	0	-	0	259	75
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	185	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1512	-	-	-	734	992
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	852	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1512	-	-	-	714	991
Mov Cap-2 Maneuver	-	-	-	-	714	-
Stage 1	-	-	-	-	928	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1512	-	-	-	791
HCM Lane V/C Ratio	0.026	-	-	-	0.247
HCM Control Delay (s)	7.4	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	93	63	56	233	297	28
Future Vol, veh/h	93	63	56	233	297	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	72	72	96	96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	102	69	78	324	309	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	804	324	338	0	-	0
Stage 1	324	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	354	719	1227	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	326	719	1227	-	-	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.5	1.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1227	-	418	-	-
HCM Lane V/C Ratio	0.063	-	0.41	-	-
HCM Control Delay (s)	8.1	0	19.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2	-	-

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	53	26	50	20	27	25	196	60	29	233	40
Future Vol, veh/h	36	53	26	50	20	27	25	196	60	29	233	40
Peak Hour Factor	0.79	0.79	0.79	0.81	0.81	0.81	0.90	0.90	0.90	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	46	67	33	62	25	33	28	218	67	33	262	45
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	10.3	12.2	12.9
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	31%	52%	10%
Vol Thru, %	70%	46%	21%	77%
Vol Right, %	21%	23%	28%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	115	97	302
LT Vol	25	36	50	29
Through Vol	196	53	20	233
RT Vol	60	26	27	40
Lane Flow Rate	312	146	120	339
Geometry Grp	1	1	1	1
Degree of Util (X)	0.444	0.234	0.194	0.484
Departure Headway (Hd)	5.124	5.779	5.843	5.133
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	703	620	612	702
Service Time	3.162	3.828	3.895	3.17
HCM Lane V/C Ratio	0.444	0.235	0.196	0.483
HCM Control Delay	12.2	10.6	10.3	12.9
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.3	0.9	0.7	2.7

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	99	70	17	13	27
Future Vol, veh/h	43	99	70	17	13	27
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	116	82	20	15	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	102	0	-	0	311	93
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	219	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1484	-	-	-	679	961
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	815	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1484	-	-	-	654	960
Mov Cap-2 Maneuver	-	-	-	-	654	-
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	815	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1484	-	-	-	833
HCM Lane V/C Ratio	0.034	-	-	-	0.056
HCM Control Delay (s)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	70	67	106	69	20
Future Vol, veh/h	42	70	67	106	69	20
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	83	83	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	80	81	128	97	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	209	0	-	0	322	146
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1362	-	-	-	672	901
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1362	-	-	-	647	900
Mov Cap-2 Maneuver	-	-	-	-	647	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	854	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1362	-	-	-	691
HCM Lane V/C Ratio	0.035	-	-	-	0.181
HCM Control Delay (s)	7.7	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	44	104	359	222	69
Future Vol, veh/h	95	44	104	359	222	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	96	96	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	122	56	108	374	255	79

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	885	295	334	0	-	0
Stage 1	295	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	315	744	1225	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	280	744	1225	-	-	-
Mov Cap-2 Maneuver	280	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	554	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.6	1.8	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1225	-	349	-	-
HCM Lane V/C Ratio	0.088	-	0.511	-	-
HCM Control Delay (s)	8.2	0	25.6	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.3	-	2.8	-	-

Appendix F – Near Term Intersection Level of Service Worksheets

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	48	27	66	27	36	19	191	57	18	255	22
Future Vol, veh/h	27	48	27	66	27	36	19	191	57	18	255	22
Peak Hour Factor	0.73	0.73	0.73	0.70	0.70	0.70	0.75	0.75	0.75	0.81	0.81	0.81
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	37	66	37	94	39	51	25	255	76	22	315	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.3	12.1	14.8	15.4
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	26%	51%	6%
Vol Thru, %	72%	47%	21%	86%
Vol Right, %	21%	26%	28%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	267	102	129	295
LT Vol	19	27	66	18
Through Vol	191	48	27	255
RT Vol	57	27	36	22
Lane Flow Rate	356	140	184	364
Geometry Grp	1	1	1	1
Degree of Util (X)	0.54	0.241	0.315	0.559
Departure Headway (Hd)	5.463	6.221	6.15	5.525
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	655	573	581	648
Service Time	3.533	4.311	4.235	3.593
HCM Lane V/C Ratio	0.544	0.244	0.317	0.562
HCM Control Delay	14.8	11.3	12.1	15.4
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	3.2	0.9	1.3	3.5

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	90	80	26	56	49
Future Vol, veh/h	33	90	80	26	56	49
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	73	73	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	136	110	36	102	89

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	146	0	-	0	365	129
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	237	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1436	-	-	-	635	921
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1436	-	-	-	611	920
Mov Cap-2 Maneuver	-	-	-	-	611	-
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	802	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1436	-	-	-	725
HCM Lane V/C Ratio	0.035	-	-	-	0.263
HCM Control Delay (s)	7.6	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	119	62	29	56	44
Future Vol, veh/h	27	119	62	29	56	44
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	89	89	65	65
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	39	172	70	33	86	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	103	0	-	0	338	88
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1502	-	-	-	662	976
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	795	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1502	-	-	-	643	975
Mov Cap-2 Maneuver	-	-	-	-	643	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	795	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1502	-	-	-	756
HCM Lane V/C Ratio	0.026	-	-	-	0.204
HCM Control Delay (s)	7.5	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	106	69	61	233	297	30
Future Vol, veh/h	106	69	61	233	297	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	72	72	96	96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	116	76	85	324	309	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	819	325	340	0	-	0
Stage 1	325	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	346	718	1225	-	-	-
Stage 1	734	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	317	718	1225	-	-	-
Mov Cap-2 Maneuver	317	-	-	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	615	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.5	1.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1225	-	407	-	-
HCM Lane V/C Ratio	0.069	-	0.473	-	-
HCM Control Delay (s)	8.2	0	21.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.5	-	-

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	53	26	50	20	27	19	196	62	32	233	37
Future Vol, veh/h	36	53	26	50	20	27	19	196	62	32	233	37
Peak Hour Factor	0.79	0.79	0.79	0.81	0.81	0.81	0.90	0.90	0.90	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	46	67	33	62	25	33	21	218	69	36	262	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	10.3	12.1	12.9
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	31%	52%	11%
Vol Thru, %	71%	46%	21%	77%
Vol Right, %	22%	23%	28%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	277	115	97	302
LT Vol	19	36	50	32
Through Vol	196	53	20	233
RT Vol	62	26	27	37
Lane Flow Rate	308	146	120	339
Geometry Grp	1	1	1	1
Degree of Util (X)	0.437	0.233	0.194	0.484
Departure Headway (Hd)	5.111	5.765	5.83	5.132
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	705	622	614	702
Service Time	3.149	3.816	3.881	3.169
HCM Lane V/C Ratio	0.437	0.235	0.195	0.483
HCM Control Delay	12.1	10.6	10.3	12.9
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.2	0.9	0.7	2.7

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	99	70	66	43	27
Future Vol, veh/h	48	99	70	66	43	27
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	56	116	82	78	51	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	160	0	-	0	350	122
Stage 1	-	-	-	-	121	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1413	-	-	-	645	926
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1413	-	-	-	618	925
Mov Cap-2 Maneuver	-	-	-	-	618	-
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1413	-	-	-	709
HCM Lane V/C Ratio	0.04	-	-	-	0.116
HCM Control Delay (s)	7.7	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	100	116	78	52	20
Future Vol, veh/h	42	100	116	78	52	20
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	83	83	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	114	140	94	73	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	234	0	-	0	398	188
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	211	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1333	-	-	-	607	854
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	824	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1333	-	-	-	584	853
Mov Cap-2 Maneuver	-	-	-	-	584	-
Stage 1	-	-	-	-	813	-
Stage 2	-	-	-	-	824	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1333	-	-	-	640
HCM Lane V/C Ratio	0.036	-	-	-	0.158
HCM Control Delay (s)	7.8	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	104	48	117	359	222	77
Future Vol, veh/h	104	48	117	359	222	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	96	96	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	62	122	374	255	89

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	918	300	344	0	-	0
Stage 1	300	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	302	740	1215	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	264	740	1215	-	-	-
Mov Cap-2 Maneuver	264	-	-	-	-	-
Stage 1	656	-	-	-	-	-
Stage 2	538	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.3	2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1215	-	331	-	-
HCM Lane V/C Ratio	0.1	-	0.589	-	-
HCM Control Delay (s)	8.3	0	30.3	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.3	-	3.6	-	-

Appendix G – Near Term With Project Intersection Level of Service Worksheets

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	48	27	74	27	42	19	191	64	18	255	24
Future Vol, veh/h	27	48	27	74	27	42	19	191	64	18	255	24
Peak Hour Factor	0.73	0.73	0.73	0.70	0.70	0.70	0.75	0.75	0.75	0.81	0.81	0.81
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	37	66	37	106	39	60	25	255	85	22	315	30
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.6	12.8	15.7	16.1
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	26%	52%	6%
Vol Thru, %	70%	47%	19%	86%
Vol Right, %	23%	26%	29%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	274	102	143	297
LT Vol	19	27	74	18
Through Vol	191	48	27	255
RT Vol	64	27	42	24
Lane Flow Rate	365	140	204	367
Geometry Grp	1	1	1	1
Degree of Util (X)	0.563	0.25	0.358	0.573
Departure Headway (Hd)	5.649	6.441	6.308	5.729
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	643	560	574	634
Service Time	3.649	4.451	4.308	3.729
HCM Lane V/C Ratio	0.568	0.25	0.355	0.579
HCM Control Delay	15.7	11.6	12.8	16.1
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	3.5	1	1.6	3.6

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	90	80	26	56	63
Future Vol, veh/h	40	90	80	26	56	63
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	73	73	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	136	110	36	102	115

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	146	0	-	0	387	129
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	259	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1436	-	-	-	616	921
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	784	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1436	-	-	-	588	920
Mov Cap-2 Maneuver	-	-	-	-	588	-
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	784	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1436	-	-	-	727
HCM Lane V/C Ratio	0.042	-	-	-	0.298
HCM Control Delay (s)	7.6	0	-	-	12
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	119	62	42	98	44
Future Vol, veh/h	27	119	62	42	98	44
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	89	89	65	65
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	39	172	70	47	151	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	117	0	-	0	345	95
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1484	-	-	-	656	967
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	795	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1484	-	-	-	637	966
Mov Cap-2 Maneuver	-	-	-	-	637	-
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	795	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1484	-	-	-	712
HCM Lane V/C Ratio	0.026	-	-	-	0.307
HCM Control Delay (s)	7.5	0	-	-	12.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.3

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	134	83	69	233	297	35
Future Vol, veh/h	134	83	69	233	297	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	72	72	96	96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	147	91	96	324	309	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	843	327	345	0	-	0
Stage 1	327	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	335	717	1220	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	601	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	303	717	1220	-	-	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	663	-	-	-	-	-
Stage 2	601	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.9	1.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1220	-	389	-	-
HCM Lane V/C Ratio	0.079	-	0.613	-	-
HCM Control Delay (s)	8.2	0	27.9	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.3	-	3.9	-	-

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	53	26	59	20	29	25	196	78	32	233	40
Future Vol, veh/h	36	53	26	59	20	29	25	196	78	32	233	40
Peak Hour Factor	0.79	0.79	0.79	0.81	0.81	0.81	0.90	0.90	0.90	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	46	67	33	73	25	36	28	218	87	36	262	45
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	10.7	12.9	13.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	31%	55%	10%
Vol Thru, %	66%	46%	19%	76%
Vol Right, %	26%	23%	27%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	299	115	108	305
LT Vol	25	36	59	32
Through Vol	196	53	20	233
RT Vol	78	26	29	40
Lane Flow Rate	332	146	133	343
Geometry Grp	1	1	1	1
Degree of Util (X)	0.477	0.238	0.22	0.498
Departure Headway (Hd)	5.166	5.892	5.94	5.228
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	694	607	603	689
Service Time	3.211	3.951	4	3.271
HCM Lane V/C Ratio	0.478	0.241	0.221	0.498
HCM Control Delay	12.9	10.8	10.7	13.4
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.6	0.9	0.8	2.8

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	64	99	70	66	43	38
Future Vol, veh/h	64	99	70	66	43	38
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	75	116	82	78	51	45

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	160	0	-	0	388	122
Stage 1	-	-	-	-	121	-
Stage 2	-	-	-	-	267	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1413	-	-	-	614	926
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1413	-	-	-	579	925
Mov Cap-2 Maneuver	-	-	-	-	579	-
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1413	-	-	-	702
HCM Lane V/C Ratio	0.053	-	-	-	0.136
HCM Control Delay (s)	7.7	0	-	-	10.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	100	116	123	79	20
Future Vol, veh/h	42	100	116	123	79	20
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	83	83	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	114	140	148	111	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	288	0	-	0	425	215
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	211	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1274	-	-	-	586	825
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	824	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1274	-	-	-	563	824
Mov Cap-2 Maneuver	-	-	-	-	563	-
Stage 1	-	-	-	-	789	-
Stage 2	-	-	-	-	824	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1274	-	-	-	601
HCM Lane V/C Ratio	0.037	-	-	-	0.232
HCM Control Delay (s)	7.9	0	-	-	12.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9

Intersection	
Int Delay, s/veh	11.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	123	56	145	359	222	94
Future Vol, veh/h	123	56	145	359	222	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	96	96	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	158	72	151	374	255	108

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	985	309	363	0	-	0
Stage 1	309	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	275	731	1196	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	231	731	1196	-	-	-
Mov Cap-2 Maneuver	231	-	-	-	-	-
Stage 1	627	-	-	-	-	-
Stage 2	505	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	50	2.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1196	-	294	-	-
HCM Lane V/C Ratio	0.126	-	0.781	-	-
HCM Control Delay (s)	8.4	0	50	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	6.1	-	-

Appendix H – Cumulative Year 2046 Intersection Level of Service Worksheets

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	52	29	60	29	32	21	207	58	15	276	26
Future Vol, veh/h	29	52	29	60	29	32	21	207	58	15	276	26
Peak Hour Factor	0.73	0.73	0.73	0.70	0.70	0.70	0.75	0.75	0.75	0.81	0.81	0.81
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	40	71	40	86	41	46	28	276	77	19	341	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.9	12.4	16.8	17.5
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	26%	50%	5%
Vol Thru, %	72%	47%	24%	87%
Vol Right, %	20%	26%	26%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	286	110	121	317
LT Vol	21	29	60	15
Through Vol	207	52	29	276
RT Vol	58	29	32	26
Lane Flow Rate	381	151	173	391
Geometry Grp	1	1	1	1
Degree of Util (X)	0.599	0.271	0.31	0.619
Departure Headway (Hd)	5.651	6.477	6.459	5.696
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	641	555	557	638
Service Time	3.663	4.526	4.506	3.708
HCM Lane V/C Ratio	0.594	0.272	0.311	0.613
HCM Control Delay	16.8	11.9	12.4	17.5
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	4	1.1	1.3	4.3

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	99	87	11	10	34
Future Vol, veh/h	26	99	87	11	10	34
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	73	73	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	150	119	15	18	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	134	0	-	0	356	128
Stage 1	-	-	-	-	127	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1451	-	-	-	642	922
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1451	-	-	-	623	921
Mov Cap-2 Maneuver	-	-	-	-	623	-
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	809	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1451	-	-	-	831
HCM Lane V/C Ratio	0.027	-	-	-	0.096
HCM Control Delay (s)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	82	54	24	41	44
Future Vol, veh/h	27	82	54	24	41	44
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	89	89	65	65
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	39	119	61	27	63	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	88	0	-	0	273	76
Stage 1	-	-	-	-	75	-
Stage 2	-	-	-	-	198	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1520	-	-	-	721	991
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	840	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1520	-	-	-	702	990
Mov Cap-2 Maneuver	-	-	-	-	702	-
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	840	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1520	-	-	-	826
HCM Lane V/C Ratio	0.026	-	-	-	0.158
HCM Control Delay (s)	7.4	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	70	53	53	337	429	25
Future Vol, veh/h	70	53	53	337	429	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	72	72	96	96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	77	58	74	468	447	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1076	460	473	0	-	0
Stage 1	460	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	244	603	1094	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	222	603	1094	-	-	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.9	1.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1094	-	305	-	-
HCM Lane V/C Ratio	0.067	-	0.443	-	-
HCM Control Delay (s)	8.5	0	25.9	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.2	-	2.2	-	-

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	57	28	43	22	27	27	212	48	28	252	43
Future Vol, veh/h	39	57	28	43	22	27	27	212	48	28	252	43
Peak Hour Factor	0.79	0.79	0.79	0.81	0.81	0.81	0.90	0.90	0.90	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	49	72	35	53	27	33	30	236	53	31	283	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.9	10.4	12.7	13.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	31%	47%	9%
Vol Thru, %	74%	46%	24%	78%
Vol Right, %	17%	23%	29%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	287	124	92	323
LT Vol	27	39	43	28
Through Vol	212	57	22	252
RT Vol	48	28	27	43
Lane Flow Rate	319	157	114	363
Geometry Grp	1	1	1	1
Degree of Util (X)	0.463	0.256	0.188	0.522
Departure Headway (Hd)	5.222	5.867	5.954	5.179
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	689	611	601	693
Service Time	3.266	3.923	4.014	3.222
HCM Lane V/C Ratio	0.463	0.257	0.19	0.524
HCM Control Delay	12.7	10.9	10.4	13.8
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.5	1	0.7	3.1

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	109	76	17	13	16
Future Vol, veh/h	24	109	76	17	13	16
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	28	128	89	20	15	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	109	0	-	0	284	100
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	185	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1475	-	-	-	704	953
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	844	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1475	-	-	-	690	952
Mov Cap-2 Maneuver	-	-	-	-	690	-
Stage 1	-	-	-	-	904	-
Stage 2	-	-	-	-	844	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1475	-	-	-	814
HCM Lane V/C Ratio	0.019	-	-	-	0.042
HCM Control Delay (s)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	80	73	61	42	20
Future Vol, veh/h	42	80	73	61	42	20
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	83	83	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	91	88	73	59	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	161	0	-	0	313	126
Stage 1	-	-	-	-	125	-
Stage 2	-	-	-	-	188	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1418	-	-	-	680	924
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	844	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1418	-	-	-	656	923
Mov Cap-2 Maneuver	-	-	-	-	656	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	844	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1418	-	-	-	724
HCM Lane V/C Ratio	0.034	-	-	-	0.121
HCM Control Delay (s)	7.6	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	83	39	79	519	321	55
Future Vol, veh/h	83	39	79	519	321	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	96	96	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	106	50	82	541	369	63

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1106	401	432	0	-	0
Stage 1	401	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	233	649	1128	-	-	-
Stage 1	676	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	209	649	1128	-	-	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	490	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	35.9	1.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1128	-	267	-	-
HCM Lane V/C Ratio	0.073	-	0.586	-	-
HCM Control Delay (s)	8.4	0	35.9	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0.2	-	3.4	-	-

Appendix I – Cumulative Year 2046 With Project Intersection Level of Service Worksheets

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	52	29	76	28	44	20	207	68	19	277	26
Future Vol, veh/h	29	52	29	76	28	44	20	207	68	19	277	26
Peak Hour Factor	0.73	0.73	0.73	0.70	0.70	0.70	0.75	0.75	0.75	0.81	0.81	0.81
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	40	71	40	109	40	63	27	276	91	23	342	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.4	13.8	18.6	19.4
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	26%	51%	6%
Vol Thru, %	70%	47%	19%	86%
Vol Right, %	23%	26%	30%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	295	110	148	322
LT Vol	20	29	76	19
Through Vol	207	52	28	277
RT Vol	68	29	44	26
Lane Flow Rate	393	151	211	398
Geometry Grp	1	1	1	1
Degree of Util (X)	0.637	0.282	0.387	0.652
Departure Headway (Hd)	5.834	6.737	6.585	5.907
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	618	532	545	612
Service Time	3.88	4.795	4.638	3.951
HCM Lane V/C Ratio	0.636	0.284	0.387	0.65
HCM Control Delay	18.6	12.4	13.8	19.4
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	4.5	1.2	1.8	4.8

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	99	86	11	10	62
Future Vol, veh/h	40	99	86	11	10	62
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	73	73	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	150	118	15	18	113

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	133	0	-	0	399	127
Stage 1	-	-	-	-	126	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1452	-	-	-	607	923
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	773	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1452	-	-	-	579	922
Mov Cap-2 Maneuver	-	-	-	-	579	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	773	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1452	-	-	-	852
HCM Lane V/C Ratio	0.042	-	-	-	0.154
HCM Control Delay (s)	7.6	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	82	53	50	125	44
Future Vol, veh/h	27	82	53	50	125	44
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	89	89	65	65
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	39	119	60	56	192	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	116	0	-	0	286	89
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	198	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1485	-	-	-	709	975
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	840	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1485	-	-	-	689	974
Mov Cap-2 Maneuver	-	-	-	-	689	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	840	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1485	-	-	-	746
HCM Lane V/C Ratio	0.026	-	-	-	0.349
HCM Control Delay (s)	7.5	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.6

Intersection	
Int Delay, s/veh	11.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	126	81	68	342	436	35
Future Vol, veh/h	126	81	68	342	436	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	72	72	96	96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	138	89	94	475	454	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1135	472	490	0	-	0
Stage 1	472	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	225	594	1078	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	198	594	1078	-	-	-
Mov Cap-2 Maneuver	198	-	-	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	63.7	1.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1078	-	268	-	-
HCM Lane V/C Ratio	0.088	-	0.849	-	-
HCM Control Delay (s)	8.7	0	63.7	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	7	-	-

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	57	28	61	20	33	27	212	80	34	362	43
Future Vol, veh/h	39	57	28	61	20	33	27	212	80	34	362	43
Peak Hour Factor	0.79	0.79	0.79	0.81	0.81	0.81	0.90	0.90	0.90	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	49	72	35	75	25	41	30	236	89	38	407	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.3	12	15.7	23.2
HCM LOS	B	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	31%	54%	8%
Vol Thru, %	66%	46%	18%	82%
Vol Right, %	25%	23%	29%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	319	124	114	439
LT Vol	27	39	61	34
Through Vol	212	57	20	362
RT Vol	80	28	33	43
Lane Flow Rate	354	157	141	493
Geometry Grp	1	1	1	1
Degree of Util (X)	0.561	0.288	0.26	0.748
Departure Headway (Hd)	5.694	6.597	6.652	5.572
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	638	546	540	651
Service Time	3.694	4.623	4.68	3.572
HCM Lane V/C Ratio	0.555	0.288	0.261	0.757
HCM Control Delay	15.7	12.3	12	23.2
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	3.5	1.2	1	6.7

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	62	109	76	17	13	38
Future Vol, veh/h	62	109	76	17	13	38
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	128	89	20	15	45

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	109	0	-	0	374	100
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	275	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1475	-	-	-	625	953
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	769	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1475	-	-	-	592	952
Mov Cap-2 Maneuver	-	-	-	-	592	-
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	769	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1475	-	-	-	824
HCM Lane V/C Ratio	0.049	-	-	-	0.073
HCM Control Delay (s)	7.6	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	80	73	151	96	20
Future Vol, veh/h	42	80	73	151	96	20
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	83	83	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	91	88	182	135	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	270	0	-	0	367	180
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	188	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1293	-	-	-	633	863
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	844	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1293	-	-	-	608	862
Mov Cap-2 Maneuver	-	-	-	-	608	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	844	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1293	-	-	-	641
HCM Lane V/C Ratio	0.037	-	-	-	0.255
HCM Control Delay (s)	7.9	0	-	-	12.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Intersection	
Int Delay, s/veh	24.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	121	55	135	527	326	89
Future Vol, veh/h	121	55	135	527	326	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	96	96	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	155	71	141	549	375	102

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1257	426	477	0	-	0
Stage 1	426	-	-	-	-	-
Stage 2	831	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	189	628	1085	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 154	628	1085	-	-	-
Mov Cap-2 Maneuver	~ 154	-	-	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	428	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	147.4	1.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1085	-	202	-	-
HCM Lane V/C Ratio	0.13	-	1.117	-	-
HCM Control Delay (s)	8.8	0	147.4	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	10.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Appendix J – Mitigated Conditions Intersection Level of Service Worksheets

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	134	83	69	233	297	35
Future Vol, veh/h	134	83	69	233	297	35
Peak Hour Factor	0.91	0.91	0.72	0.72	0.96	0.96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	147	91	96	324	309	36
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.2	15.8	13.2
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	23%	62%	0%
Vol Thru, %	77%	0%	89%
Vol Right, %	0%	38%	11%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	302	217	332
LT Vol	69	134	0
Through Vol	233	0	297
RT Vol	0	83	35
Lane Flow Rate	419	238	346
Geometry Grp	1	1	1
Degree of Util (X)	0.602	0.378	0.496
Departure Headway (Hd)	5.171	5.712	5.164
Convergence, Y/N	Yes	Yes	Yes
Cap	696	630	699
Service Time	3.202	3.75	3.197
HCM Lane V/C Ratio	0.602	0.378	0.495
HCM Control Delay	15.8	12.2	13.2
HCM Lane LOS	C	B	B
HCM 95th-tile Q	4.1	1.8	2.8

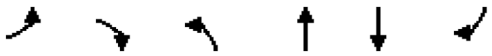
Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	123	56	145	359	222	94
Future Vol, veh/h	123	56	145	359	222	94
Peak Hour Factor	0.78	0.78	0.96	0.96	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	158	72	151	374	255	108
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	13	23.3	14
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	69%	0%
Vol Thru, %	71%	0%	70%
Vol Right, %	0%	31%	30%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	504	179	316
LT Vol	145	123	0
Through Vol	359	0	222
RT Vol	0	56	94
Lane Flow Rate	525	229	363
Geometry Grp	1	1	1
Degree of Util (X)	0.765	0.388	0.528
Departure Headway (Hd)	5.247	6.082	5.238
Convergence, Y/N	Yes	Yes	Yes
Cap	688	590	686
Service Time	3.285	4.133	3.282
HCM Lane V/C Ratio	0.763	0.388	0.529
HCM Control Delay	23.3	13	14
HCM Lane LOS	C	B	B
HCM 95th-tile Q	7.2	1.8	3.1

HCM 6th Signalized Intersection Summary
4: 13th Ave & Front St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	126	81	68	342	436	35
Future Volume (veh/h)	126	81	68	342	436	35
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	138	89	94	475	454	36
Peak Hour Factor	0.91	0.91	0.72	0.72	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	188	121	221	703	828	66
Arrive On Green	0.18	0.18	0.48	0.48	0.48	0.48
Sat Flow, veh/h	1037	669	162	1464	1724	137
Grp Volume(v), veh/h	228	0	569	0	0	490
Grp Sat Flow(s),veh/h/ln	1713	0	1627	0	0	1861
Q Serve(g_s), s	3.7	0.0	2.6	0.0	0.0	5.4
Cycle Q Clear(g_c), s	3.7	0.0	8.0	0.0	0.0	5.4
Prop In Lane	0.61	0.39	0.17			0.07
Lane Grp Cap(c), veh/h	311	0	924	0	0	893
V/C Ratio(X)	0.73	0.00	0.62	0.00	0.00	0.55
Avail Cap(c_a), veh/h	1336	0	3297	0	0	3646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	11.3	0.0	5.8	0.0	0.0	5.4
Incr Delay (d2), s/veh	3.4	0.0	0.7	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.5	0.0	0.0	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.7	0.0	6.5	0.0	0.0	5.9
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	228			569	490	
Approach Delay, s/veh	14.7			6.5	5.9	
Approach LOS	B			A	A	

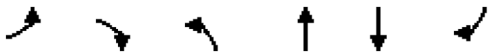
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		19.7		9.5		19.7
Change Period (Y+Rc), s		5.7		* 4.2		5.7
Max Green Setting (Gmax), s		57.3		* 23		57.3
Max Q Clear Time (g_c+I1), s		10.0		5.7		7.4
Green Ext Time (p_c), s		4.0		0.6		3.0

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
4: 13th Ave & Front St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	55	135	527	326	89
Future Volume (veh/h)	121	55	135	527	326	89
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	155	71	141	549	375	102
Peak Hour Factor	0.78	0.78	0.96	0.96	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	183	84	249	943	1026	279
Arrive On Green	0.16	0.16	0.72	0.72	0.72	0.72
Sat Flow, veh/h	1171	536	272	1301	1416	385
Grp Volume(v), veh/h	227	0	690	0	0	477
Grp Sat Flow(s),veh/h/ln	1715	0	1573	0	0	1801
Q Serve(g_s), s	10.7	0.0	8.2	0.0	0.0	8.3
Cycle Q Clear(g_c), s	10.7	0.0	16.4	0.0	0.0	8.3
Prop In Lane	0.68	0.31	0.20			0.21
Lane Grp Cap(c), veh/h	268	0	1192	0	0	1305
V/C Ratio(X)	0.85	0.00	0.58	0.00	0.00	0.37
Avail Cap(c_a), veh/h	408	0	1192	0	0	1305
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	34.1	0.0	5.2	0.0	0.0	4.3
Incr Delay (d2), s/veh	9.8	0.0	2.1	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	3.5	0.0	0.0	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.9	0.0	7.3	0.0	0.0	5.1
LnGrp LOS	D	A	A	A	A	A
Approach Vol, veh/h	227			690	477	
Approach Delay, s/veh	43.9			7.3	5.1	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		66.0		17.2		66.0
Change Period (Y+Rc), s		5.7		* 4.2		5.7
Max Green Setting (Gmax), s		60.3		* 20		60.3
Max Q Clear Time (g_c+I1), s		18.4		12.7		10.3
Green Ext Time (p_c), s		5.4		0.4		2.9

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix D

Mitigation Monitoring Program

MITIGATION MONITORING AND REPORTING PROGRAM

As required by Public Resources Code Section 21081.6, subd. (a)(1), a Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the project in order to monitor the implementation of the mitigation measures that have been adopted for the project. This Mitigation Monitoring and Reporting Program (MMRP) has been created based upon the findings of the Environmental Impact Report (EIR) for the Summers Pointe Project in the County of Kings.

The first column of the table identifies the mitigation measure. The second column names the party responsible for carrying out the required action. The third column, "Timing of Mitigation Measure" identifies the time the mitigation measure should be initiated. The fourth column, "Responsible Party for Monitoring," names the party ensuring that the mitigation measure is implemented. The last column will be used by the County to ensure that the individual mitigation measures have been monitored.

Plan checking and verification of mitigation compliance shall be the responsibility of the County of Kings.

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
Mitigation Measure AES-1: Preserve the existing nighttime environment by limiting the illumination of areas surrounding new development. New lighting that is part of residential, commercial, industrial, or recreational development shall be oriented away from sensitive uses, and should be hooded, shielded, and located to direct light pools downward and prevent glare.	Applicant	Prior to the start of construction	County of Kings	
Mitigation Measure BIO-1: Prior to ground disturbance, a pre-construction survey shall be conducted to determine if any San Joaquin Kit Foxes (SJKF) are present or if there is potential for the Site to be an SJKF habitat. A qualified biologist shall conduct the survey no more than 30 days prior and no less than 14 days before ground disturbance. The survey shall include inspections of all construction materials. If the biologist observes signs indicating the presence or recent past presence of an SJKF, a qualified biologist shall be required to monitor all ground-disturbing activities and the feature location avoided by a buffer of 50 feet (or more) until it has a biologist confirms that no SJKF are present within the Project footprint.	Applicant	Prior to ground disturbance activities	County of Kings	
Mitigation Measure BIO-2: Prior to Project implementation, the Applicant shall conduct a pre-construction survey for nesting Swainson's Hawks (SWHA). This survey shall follow the methodology developed by the SWHA Technical Advisory Committee (SWHA TAC 2000) prior to Project implementation (during CEQA analysis).	Applicant	Prior to the start of construction	County of Kings	

Mitigation Measure BIO-3: If Project activities occur during the nesting season (March 1 to September 15) of the Swainson's Hawk (SWHA), a qualified biologist shall survey the Project Site and environmental footprint of the Project for nesting birds to avoid any adverse impacts leading to nest failure or abandonment. If any nests are identified, a 0.5-mile no-disturbance buffer shall be delineated and maintained around each nest, regardless of when surveys detected it or incidentally, until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, to prevent nest abandonment and other take of SWHA as a result of Project activities. If avoidance is not feasible, an Incidental Take Permit (ITP) must be acquired prior to ground-disturbing activities, pursuant to Fish and Game Code section 2081 subdivision (b).	Applicant	Prior to the start of construction	County of Kings	
Mitigation Measure BIO-4: Prior to the start of construction, a Crotch Bumblebee (CBB) habitat survey shall be conducted. This habitat survey shall include desktop research, a site visit, project site pictures, and a habitat survey report. If suitable CBB habitat exists in areas of planned Project-related ground disturbance, equipment staging, or materials laydown, potential CBB nesting sites in these areas will be avoided with a 50-foot no-disturbance buffer to reduce the Project related impacts to less than significant. CBB detection warrants consultation with CDFW to discuss how to avoid taking or, if avoidance is not feasible, to acquire an ITP prior to ground-disturbing activities, pursuant to Fish and Game Code section 2081 subdivision (b).	Applicant	Prior to the start of construction	County of Kings	
Mitigation Measure CUL-1: In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project: **a.** Cultural Resources Alert on Project Plans. The project proponent shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources. **b.** Pre-Construction Briefing. The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and on the procedures to be enacted if resources are found. **c.** Stop Work Near any Discovered Cultural Resources. The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during construction of the	Applicant	Prior to and ongoing during construction	County of Kings	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA. **d.** Mitigation for Discovered Cultural Resources. If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken. **e.** Native American Monitoring. Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities during construction. Tribal participation would be dependent upon the availability and interest of the Tribe. **f.** Disposition of Cultural Resources. Upon coordination with the Kings County Community Development Agency, any pre-historic archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.				

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
Mitigation Measure CUL-2: In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of each phase of the Project: **a.** Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop in the vicinity of the find and the Kings County Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD). The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(e) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance." **b.** Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin Valley Information Center.provided to a County-approved institution or person who is capable of providing long-term preservation to allow future scientific study.	Applicant	Ongoing during construction	County of Kings	
Mitigation Measure HYD-1: Prior to the issuance of any construction/grading permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project site to the California SWRCB Storm Water Permit Unit.	Applicant	Prior to the start of construction	County of Kings	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
H-1(a) Low Impact Development (LID). Future development pursuant to the 2035 General Plan shall incorporate LID principals into the project design to minimize long-term stormwater runoff. Such principles shall include: • Permeable paving, such as pavers, porous concrete, or pathway comprised of decomposed granite that is effective in stormwater infiltration to help prevent excess runoff. • Use of "urban bio-swales" to redirect stormwater into planter strips, rather than capturing runoff in pipes and diverting it to a remote location. • Use of water efficient irrigation (e.g., drip irrigation system) to water trees, shrub beds, and areas of groundcover to eliminate evaporation losses and minimize runoff. • Use of predominately (75 percent) native plants and drought-tolerant landscaping wherever possible.	Applicant	Ongoing during construction	County of Kings	
Mitigation Measure HYD-2: The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the County 45 days prior to the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. A SWPPP for site construction shall be developed prior to the initiation of grading and implemented for all construction activity on the Project site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to storm water and shall include specific BMPs to control the discharge of material from the site. The following BMP methods shall include, but would not be limited to: • Dust control measures will be implemented to ensure success of all onsite activities to control fugitive dust; • A routine monitoring plan will be implemented to ensure success of all onsite erosion and sedimentation control measures; • Provisional detention basins, straw bales, erosion control blankets, mulching, silt fencing, sand bagging, and soil stabilizers will be used; • Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours prior to and during extreme weather conditions; and, • BMPs will be strictly followed to prevent	Applicant	45 Day prior to the start of construction	County of Kings	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
spills and discharges of pollutants onsite, such as material storage, trash disposal, construction entrances, etc.				
Mitigation Measure REC-1: Prior to recording the final map, the applicant will designate a minimum of 0.802 acres of parkland on the Project site or within the Community of Armona. A cost estimate for continued maintenance of the parkland will be calculated and will be included in the project's zone of benefits.	Applicant	Prior to the recording of the final map	County of Kings	
Mitigation Measure LUT-1: Prior to recording the final map, the applicant shall enter the project into a density bonus agreement, which will provide more housing units per acre than a typical neighborhood in the R-1-6 zone.	Applicant	Prior to the recording of the final map	County of Kings	
Mitigation Measure LUT-3: The project site will be located within ¼ mile of Medium Density Residential, Medium High-Density Residential, Mixed Use, Downtown Mixed Use, Rural Commercial, Public/Quasipublic, and Agriculture land uses.	Applicant	Prior to the start of construction	County of Kings	
Mitigation Measure LUT-4: The project site shall be located approximately 3 to 3.5 miles from the Hanford Downtown.	Applicant	Prior to the start of construction	County of Kings	
Mitigation Measure LUT-6: Prior to recording the final map, the applicant shall enter the project into a density bonus agreement, which will include at least 10 below-market-rate houses out of 109 total houses.	Applicant	Prior to the recording of the final map	County of Kings	
Mitigation Measure LUT-9: The project shall include improved design elements to enhance walkability and connectivity. These elements will include an above average amount of street intersections, pedestrian crossings and sidewalks throughout the project site.	Applicant	Prior to the start of construction	County of Kings	
Mitigation Measure SDT-1: The project shall eliminate physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation. The project site will contain pedestrian sidewalks throughout and connect to nearby homes and commercial uses.	Applicant	Ongoing during construction	County of Kings	
Mitigation Measure SDT-2: Prior to the start of construction, the applicant shall designate the location of appropriate traffic calming features such as marked crosswalks and on-street parking for the project site. The applicant will show these features on the improvement drawings for the project site. A cost estimate for continued maintenance of such	Applicant	Prior to the start of construction	County of Kings	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
features will be calculated and will be included in the project's zone of benefits.				
Mitigation Measure SDT-5: Prior to recording the final map, the applicant shall designate the location of a Class 3 bike route. The applicant will show the location of appropriate bike route striping in their improvement drawings for the project site. A cost estimate for continued maintenance of such striping will be calculated and will be included in the project's zone of benefits.	Applicant	Prior to the recording of the final map	County of Kings	
Mitigation Measure TRT-3: Prior to recording the final map, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a ride-sharing program to residents of the project site. The applicant shall designate an on-street parking space to be used by ride-sharing vehicles.	Applicant	Prior to the recording of the final map	County of Kings	
Mitigation Measure TRT-9: Prior to recording the final map, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a car-sharing program to residents of the project site.	Applicant	Prior to the recording of the final map	County of Kings	
Mitigation Measure TST-2: Prior to recording the final map, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide sidewalk/ crosswalk safety enhancements and bus shelter improvements for a new transit stop at or near the project site.	Applicant	Prior to the recording of the final map	County of Kings	
Mitigation Measure TST-3: Prior to recording the final map, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a new transit stop at or near the project site.	Applicant	Prior to the recording of the final map	County of Kings	
Mitigation Measure TST-6: Prior to recording the final map, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide shuttle service to residents of the project site.	Applicant	Prior to the recording of the final map	County of Kings	

Attachment E

CalEEMod Report

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

Summers Pointe

Kings County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	109.00	Dwelling Unit	20.08	555,246.00	312

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	37
Climate Zone	3			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acerage and Square Feet Defined

Construction Phase -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition -

Grading -

Architectural Coating -

Road Dust -

Woodstoves -

Consumer Products -

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

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Fleet Mix - District Accepted Fleet Mix for Residential Projects

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.04	0.02
tblFleetMix	LDA	0.51	0.52
tblFleetMix	LDT1	0.05	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.03	8.0000e-004
tblFleetMix	LHD2	6.6260e-003	9.0000e-004
tblFleetMix	MCY	0.02	2.5000e-003
tblFleetMix	MDV	0.16	0.06
tblFleetMix	MH	3.3810e-003	2.2000e-003
tblFleetMix	MHD	8.2810e-003	7.6000e-003
tblFleetMix	OBUS	6.0300e-004	0.00
tblFleetMix	SBUS	1.1230e-003	1.0000e-004
tblFleetMix	UBUS	1.8800e-004	4.3000e-003
tblLandUse	LandUseSquareFeet	196,200.00	555,246.00
tblLandUse	LotAcreage	35.39	20.08
tblWoodstoves	NumberCatalytic	20.08	0.00
tblWoodstoves	NumberNoncatalytic	20.08	0.00

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

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2390	2.2054	2.2881	4.4400e-003	0.3012	0.1000	0.4012	0.1258	0.0934	0.2192	0.0000	388.1702	388.1702	0.0910	4.1400e-003	391.6773
2024	5.3633	1.3375	1.6772	3.0700e-003	0.0363	0.0594	0.0957	9.7900e-003	0.0558	0.0656	0.0000	268.2381	268.2381	0.0553	3.5800e-003	270.6881
Maximum	**5.3633**	**2.2054**	**2.2881**	**4.4400e-003**	**0.3012**	**0.1000**	**0.4012**	**0.1258**	**0.0934**	**0.2192**	**0.0000**	**388.1702**	**388.1702**	**0.0910**	**4.1400e-003**	**391.6773**

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					
2023	0.2390	2.2054	2.2881	4.4400e-003	0.3012	0.1000	0.4012	0.1258	0.0934	0.2192	0.0000	388.1698	388.1698	0.0910	4.1400e-003	391.6769
2024	5.3633	1.3375	1.6772	3.0700e-003	0.0363	0.0594	0.0957	9.7900e-003	0.0558	0.0656	0.0000	268.2378	268.2378	0.0553	3.5800e-003	270.6878
Maximum	**5.3633**	**2.2054**	**2.2881**	**4.4400e-003**	**0.3012**	**0.1000**	**0.4012**	**0.1258**	**0.0934**	**0.2192**	**0.0000**	**388.1698**	**388.1698**	**0.0910**	**4.1400e-003**	**391.6769**

Summers Pointe - Kings 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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2023**	**3-31-2023**	0.8154	0.8154
2	**4-1-2023**	**6-30-2023**	0.5427	0.5427
3	**7-1-2023**	**9-30-2023**	0.5487	0.5487
4	**10-1-2023**	**12-31-2023**	0.5498	0.5498
5	**1-1-2024**	**3-31-2024**	0.5093	0.5093
6	**4-1-2024**	**6-30-2024**	0.5082	0.5082
7	**7-1-2024**	**9-30-2024**	1.0064	1.0064
		Highest	1.0064	1.0064

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7187	0.0501	0.8259	3.0000e-004		7.7800e-003	7.7800e-003		7.7800e-003	7.7800e-003	0.0000	48.5416	48.5416	2.1700e-003	8.7000e-004	48.8539
Energy	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	293.9601	293.9601	0.0157	4.1400e-003	295.5861
Mobile	0.2790	0.5371	3.3992	9.7800e-003	1.0891	7.3700e-003	1.0965	0.2902	6.8700e-003	0.2970	0.0000	914.4282	914.4282	0.0583	0.0440	928.9852
Waste						0.0000	0.0000		0.0000	0.0000	22.7999	0.0000	22.7999	1.3474	0.0000	56.4859
Water						0.0000	0.0000		0.0000	0.0000	2.2531	9.5940	11.8471	0.2322	5.5600e-003	19.3102
Total	**3.0119**	**0.7079**	**4.2765**	**0.0109**	**1.0891**	**0.0249**	**1.1140**	**0.2902**	**0.0244**	**0.3146**	**25.0530**	**1,266.5239**	**1,291.5769**	**1.6558**	**0.0545**	**1,349.2213**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7139	9.3100e-003	0.8086	4.0000e-005		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	1.3220	1.3220	1.2700e-003	0.0000	1.3537
Energy	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	293.9601	293.9601	0.0157	4.1400e-003	295.5861
Mobile	0.2764	0.5180	3.2755	9.3100e-003	1.0347	7.0400e-003	1.0417	0.2756	6.5600e-003	0.2822	0.0000	870.1831	870.1831	0.0563	0.0423	884.1907
Waste						0.0000	0.0000		0.0000	0.0000	22.7999	0.0000	22.7999	1.3474	0.0000	56.4859
Water						0.0000	0.0000		0.0000	0.0000	2.2531	9.5940	11.8471	0.2322	5.5600e-003	19.3102
Total	**3.0045**	**0.6481**	**4.1355**	**0.0101**	**1.0347**	**0.0213**	**1.0560**	**0.2756**	**0.0208**	**0.2965**	**25.0530**	**1,175.0592**	**1,200.1122**	**1.6529**	**0.0520**	**1,256.9266**

	ROG	NOx	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	**0.25**	**8.45**	**3.30**	**6.73**	**5.00**	**14.53**	**5.21**	**5.00**	**14.75**	**5.75**	**0.00**	**7.22**	**7.08**	**0.18**	**4.66**	**6.84**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/28/2023	2/10/2023	5	10	
2	Grading	Grading	2/11/2023	3/31/2023	5	35	
3	Building Construction	Building Construction	4/1/2023	8/30/2024	5	370	

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

4	Paving	Paving	8/31/2024	9/27/2024	5	20	
5	Architectural Coating	Architectural Coating	9/28/2024	10/25/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 105

Acres of Paving: 0

Residential Indoor: 1,124,373; Residential Outdoor: 374,791; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	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	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	39.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2023

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

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

3.2 Site Preparation - 2023

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	2.7000e-004	1.9000e-004	2.2300e-003	1.0000e-005	7.2000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5688	0.5688	2.0000e-005	2.0000e-005	0.5742
Total	**2.7000e-004**	**1.9000e-004**	**2.2300e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.5688**	**0.5688**	**2.0000e-005**	**2.0000e-005**	**0.5742**

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

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

3.2 Site Preparation - 2023

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	2.7000e-004	1.9000e-004	2.2300e-003	1.0000e-005	7.2000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5688	0.5688	2.0000e-005	2.0000e-005	0.5742
Total	**2.7000e-004**	**1.9000e-004**	**2.2300e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.5688**	**0.5688**	**2.0000e-005**	**2.0000e-005**	**0.5742**

3.3 Grading - 2023

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					0.1611	0.0000	0.1611	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0581	0.6040	0.4909	1.0900e-003		0.0249	0.0249		0.0229	0.0229	0.0000	95.4366	95.4366	0.0309	0.0000	96.2083
Total	**0.0581**	**0.6040**	**0.4909**	**1.0900e-003**	**0.1611**	**0.0249**	**0.1860**	**0.0639**	**0.0229**	**0.0869**	**0.0000**	**95.4366**	**95.4366**	**0.0309**	**0.0000**	**96.2083**

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

3.3 Grading - 2023

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	1.0600e-003	7.3000e-004	8.6500e-003	2.0000e-005	2.8100e-003	1.0000e-005	2.8300e-003	7.5000e-004	1.0000e-005	7.6000e-004	0.0000	2.2121	2.2121	7.0000e-005	6.0000e-005	2.2331
Total	**1.0600e-003**	**7.3000e-004**	**8.6500e-003**	**2.0000e-005**	**2.8100e-003**	**1.0000e-005**	**2.8300e-003**	**7.5000e-004**	**1.0000e-005**	**7.6000e-004**	**0.0000**	**2.2121**	**2.2121**	**7.0000e-005**	**6.0000e-005**	**2.2331**

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					0.1611	0.0000	0.1611	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0581	0.6040	0.4909	1.0900e-003		0.0249	0.0249		0.0229	0.0229	0.0000	95.4365	95.4365	0.0309	0.0000	96.2082
Total	**0.0581**	**0.6040**	**0.4909**	**1.0900e-003**	**0.1611**	**0.0249**	**0.1860**	**0.0639**	**0.0229**	**0.0869**	**0.0000**	**95.4365**	**95.4365**	**0.0309**	**0.0000**	**96.2082**

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

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	7.3000e-004	8.6500e-003	2.0000e-005	2.8100e-003	1.0000e-005	2.8300e-003	7.5000e-004	1.0000e-005	7.6000e-004	0.0000	2.2121	2.2121	7.0000e-005	6.0000e-005	2.2331
Total	**1.0600e-003**	**7.3000e-004**	**8.6500e-003**	**2.0000e-005**	**2.8100e-003**	**1.0000e-005**	**2.8300e-003**	**7.5000e-004**	**1.0000e-005**	**7.6000e-004**	**0.0000**	**2.2121**	**2.2121**	**7.0000e-005**	**6.0000e-005**	**2.2331**

3.4 Building Construction - 2023

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	0.1533	1.4025	1.5838	2.6300e-003		0.0682	0.0682		0.0642	0.0642	0.0000	226.0096	226.0096	0.0538	0.0000	227.3537
Total	**0.1533**	**1.4025**	**1.5838**	**2.6300e-003**		**0.0682**	**0.0682**		**0.0642**	**0.0642**	**0.0000**	**226.0096**	**226.0096**	**0.0538**	**0.0000**	**227.3537**

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4300e-003	0.0524	0.0173	2.4000e-004	7.7900e-003	3.4000e-004	8.1400e-003	2.2500e-003	3.3000e-004	2.5800e-003	0.0000	23.1854	23.1854	9.0000e-005	3.3500e-003	24.1870
Worker	0.0115	7.8800e-003	0.0940	2.6000e-004	0.0306	1.6000e-004	0.0307	8.1200e-003	1.4000e-004	8.2600e-003	0.0000	24.0323	24.0323	7.4000e-004	7.0000e-004	24.2605
Total	**0.0129**	**0.0603**	**0.1113**	**5.0000e-004**	**0.0383**	**5.0000e-004**	**0.0388**	**0.0104**	**4.7000e-004**	**0.0108**	**0.0000**	**47.2177**	**47.2177**	**8.3000e-004**	**4.0500e-003**	**48.4474**

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	0.1533	1.4025	1.5838	2.6300e-003		0.0682	0.0682		0.0642	0.0642	0.0000	226.0094	226.0094	0.0538	0.0000	227.3535
Total	**0.1533**	**1.4025**	**1.5838**	**2.6300e-003**		**0.0682**	**0.0682**		**0.0642**	**0.0642**	**0.0000**	**226.0094**	**226.0094**	**0.0538**	**0.0000**	**227.3535**

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4300e-003	0.0524	0.0173	2.4000e-004	7.7900e-003	3.4000e-004	8.1400e-003	2.2500e-003	3.3000e-004	2.5800e-003	0.0000	23.1854	23.1854	9.0000e-005	3.3500e-003	24.1870
Worker	0.0115	7.8800e-003	0.0940	2.6000e-004	0.0306	1.6000e-004	0.0307	8.1200e-003	1.4000e-004	8.2600e-003	0.0000	24.0323	24.0323	7.4000e-004	7.0000e-004	24.2605
Total	**0.0129**	**0.0603**	**0.1113**	**5.0000e-004**	**0.0383**	**5.0000e-004**	**0.0388**	**0.0104**	**4.7000e-004**	**0.0108**	**0.0000**	**47.2177**	**47.2177**	**8.3000e-004**	**4.0500e-003**	**48.4474**

3.4 Building Construction - 2024

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	0.1288	1.1763	1.4146	2.3600e-003		0.0537	0.0537		0.0505	0.0505	0.0000	202.8680	202.8680	0.0480	0.0000	204.0673
Total	**0.1288**	**1.1763**	**1.4146**	**2.3600e-003**		**0.0537**	**0.0537**		**0.0505**	**0.0505**	**0.0000**	**202.8680**	**202.8680**	**0.0480**	**0.0000**	**204.0673**

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

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2500e-003	0.0470	0.0151	2.1000e-004	6.9900e-003	3.1000e-004	7.3000e-003	2.0200e-003	3.0000e-004	2.3200e-003	0.0000	20.5031	20.5031	8.0000e-005	2.9600e-003	21.3866
Worker	9.5200e-003	6.2400e-003	0.0779	2.3000e-004	0.0274	1.3000e-004	0.0276	7.2800e-003	1.2000e-004	7.4100e-003	0.0000	20.8800	20.8800	6.0000e-004	5.8000e-004	21.0688
Total	**0.0108**	**0.0533**	**0.0930**	**4.4000e-004**	**0.0344**	**4.4000e-004**	**0.0349**	**9.3000e-003**	**4.2000e-004**	**9.7300e-003**	**0.0000**	**41.3830**	**41.3830**	**6.8000e-004**	**3.5400e-003**	**42.4554**

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	0.1288	1.1763	1.4146	2.3600e-003		0.0537	0.0537		0.0505	0.0505	0.0000	202.8677	202.8677	0.0480	0.0000	204.0670
Total	**0.1288**	**1.1763**	**1.4146**	**2.3600e-003**		**0.0537**	**0.0537**		**0.0505**	**0.0505**	**0.0000**	**202.8677**	**202.8677**	**0.0480**	**0.0000**	**204.0670**

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

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2500e-003	0.0470	0.0151	2.1000e-004	6.9900e-003	3.1000e-004	7.3000e-003	2.0200e-003	3.0000e-004	2.3200e-003	0.0000	20.5031	20.5031	8.0000e-005	2.9600e-003	21.3866
Worker	9.5200e-003	6.2400e-003	0.0779	2.3000e-004	0.0274	1.3000e-004	0.0276	7.2800e-003	1.2000e-004	7.4100e-003	0.0000	20.8800	20.8800	6.0000e-004	5.8000e-004	21.0688
Total	**0.0108**	**0.0533**	**0.0930**	**4.4000e-004**	**0.0344**	**4.4000e-004**	**0.0349**	**9.3000e-003**	**4.2000e-004**	**9.7300e-003**	**0.0000**	**41.3830**	**41.3830**	**6.8000e-004**	**3.5400e-003**	**42.4554**

3.5 Paving - 2024

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

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

3.5 Paving - 2024

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	4.2000e-004	2.7000e-004	3.4200e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9178	0.9178	3.0000e-005	3.0000e-005	0.9261
Total	**4.2000e-004**	**2.7000e-004**	**3.4200e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9178**	**0.9178**	**3.0000e-005**	**3.0000e-005**	**0.9261**

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

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

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	2.7000e-004	3.4200e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9178	0.9178	3.0000e-005	3.0000e-005	0.9261
Total	**4.2000e-004**	**2.7000e-004**	**3.4200e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9178**	**0.9178**	**3.0000e-005**	**3.0000e-005**	**0.9261**

3.6 Architectural Coating - 2024

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	5.2115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**5.2133**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

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

3.6 Architectural Coating - 2024

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	2.2000e-004	1.5000e-004	1.8300e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4895	0.4895	1.0000e-005	1.0000e-005	0.4939
Total	**2.2000e-004**	**1.5000e-004**	**1.8300e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4895**	**0.4895**	**1.0000e-005**	**1.0000e-005**	**0.4939**

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	5.2115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**5.2133**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

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

3.6 Architectural Coating - 2024

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	2.2000e-004	1.5000e-004	1.8300e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4895	0.4895	1.0000e-005	1.0000e-005	0.4939
Total	**2.2000e-004**	**1.5000e-004**	**1.8300e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4895**	**0.4895**	**1.0000e-005**	**1.0000e-005**	**0.4939**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2764	0.5180	3.2755	9.3100e-003	1.0347	7.0400e-003	1.0417	0.2756	6.5600e-003	0.2822	0.0000	870.1831	870.1831	0.0563	0.0423	884.1907
Unmitigated	0.2790	0.5371	3.3992	9.7800e-003	1.0891	7.3700e-003	1.0965	0.2902	6.8700e-003	0.2970	0.0000	914.4282	914.4282	0.0583	0.0440	928.9852

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,028.96	1,039.86	931.95	2,909,930	2,764,433
Total	1,028.96	1,039.86	931.95	2,909,930	2,764,433

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	10.80	7.30	7.50	42.30	19.60	38.10	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	0.524400	0.212000	0.167700	0.056300	0.000800	0.000900	0.007600	0.021200	0.000000	0.004300	0.002500	0.000100	0.002200

5.0 Energy Detail

Historical Energy Use: N

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

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.1419	154.1419	0.0130	1.5800e-003	154.9371
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.1419	154.1419	0.0130	1.5800e-003	154.9371
NaturalGas Mitigated	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
NaturalGas Unmitigated	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490

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					
Single Family Housing	2.62009e+006	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
Total		**0.0141**	**0.1207**	**0.0514**	**7.7000e-004**		**9.7600e-003**	**9.7600e-003**		**9.7600e-003**	**9.7600e-003**	**0.0000**	**139.8181**	**139.8181**	**2.6800e-003**	**2.5600e-003**	**140.6490**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.62009e+006	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
Total		**0.0141**	**0.1207**	**0.0514**	**7.7000e-004**		**9.7600e-003**	**9.7600e-003**		**9.7600e-003**	**9.7600e-003**	**0.0000**	**139.8181**	**139.8181**	**2.6800e-003**	**2.5600e-003**	**140.6490**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	869162	154.1419	0.0130	1.5800e-003	154.9371
Total		**154.1419**	**0.0130**	**1.5800e-003**	**154.9371**

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

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	869162	154.1419	0.0130	1.5800e-003	154.9371
Total		**154.1419**	**0.0130**	**1.5800e-003**	**154.9371**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.7139	9.3100e-003	0.8086	4.0000e-005		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	1.3220	1.3220	1.2700e-003	0.0000	1.3537
Unmitigated	2.7187	0.0501	0.8259	3.0000e-004		7.7800e-003	7.7800e-003		7.7800e-003	7.7800e-003	0.0000	48.5416	48.5416	2.1700e-003	8.7000e-004	48.8539

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5212					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1685					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.7700e-003	0.0408	0.0174	2.6000e-004		3.3000e-003	3.3000e-003		3.3000e-003	3.3000e-003	0.0000	47.2196	47.2196	9.1000e-004	8.7000e-004	47.5002
Landscaping	0.0243	9.3100e-003	0.8086	4.0000e-005		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	1.3220	1.3220	1.2700e-003	0.0000	1.3537
Total	**2.7187**	**0.0501**	**0.8259**	**3.0000e-004**		**7.7900e-003**	**7.7900e-003**		**7.7900e-003**	**7.7900e-003**	**0.0000**	**48.5417**	**48.5417**	**2.1800e-003**	**8.7000e-004**	**48.8539**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5212					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1685					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0243	9.3100e-003	0.8086	4.0000e-005		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	1.3220	1.3220	1.2700e-003	0.0000	1.3537
Total	**2.7139**	**9.3100e-003**	**0.8086**	**4.0000e-005**		**4.4900e-003**	**4.4900e-003**		**4.4900e-003**	**4.4900e-003**	**0.0000**	**1.3220**	**1.3220**	**1.2700e-003**	**0.0000**	**1.3537**

7.0 Water Detail

7.1 Mitigation Measures Water

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			
Mitigated	11.8471	0.2322	5.5600e-003	19.3102
Unmitigated	11.8471	0.2322	5.5600e-003	19.3102

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.10179 / 4.47721	11.8471	0.2322	5.5600e-003	19.3102
Total		**11.8471**	**0.2322**	**5.5600e-003**	**19.3102**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.10179 / 4.47721	11.8471	0.2322	5.5600e-003	19.3102
Total		**11.8471**	**0.2322**	**5.5600e-003**	**19.3102**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	22.7999	1.3474	0.0000	56.4859
Unmitigated	22.7999	1.3474	0.0000	56.4859

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	112.32	22.7999	1.3474	0.0000	56.4859
Total		**22.7999**	**1.3474**	**0.0000**	**56.4859**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	112.32	22.7999	1.3474	0.0000	56.4859
Total		**22.7999**	**1.3474**	**0.0000**	**56.4859**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Summers Pointe 2005 BAU - Kings County, Annual

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

Summers Pointe 2005 BAU

Kings County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	109.00	Dwelling Unit	20.08	555,246.00	312

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	37
Climate Zone	3			**Operational Year**	2005
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acerage and Square Feet Defined

Construction Phase -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition -

Grading -

Architectural Coating -

Road Dust -

Woodstoves -

Consumer Products -

Summers Pointe 2005 BAU - Kings County, Annual

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

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Fleet Mix -

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblLandUse	LandUseSquareFeet	196,200.00	555,246.00
tblLandUse	LotAcreage	35.39	20.08

2.0 Emissions Summary

Summers Pointe 2005 BAU - Kings County, Annual

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

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					
2003	1.4147	8.2799	4.9083	0.0505	0.3054	0.5648	0.8701	0.1269	0.5640	0.6909	0.0000	494.3988	494.3988	0.1135	0.0116	500.6994
2004	6.0651	4.6239	2.8197	0.0288	0.0321	0.3377	0.3699	8.6800e-003	0.3372	0.3458	0.0000	282.4559	282.4559	0.0683	8.1600e-003	286.5964
Maximum	**6.0651**	**8.2799**	**4.9083**	**0.0505**	**0.3054**	**0.5648**	**0.8701**	**0.1269**	**0.5640**	**0.6909**	**0.0000**	**494.3988**	**494.3988**	**0.1135**	**0.0116**	**500.6994**

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					
2003	1.4147	8.2799	4.9083	0.0505	0.3054	0.5648	0.8701	0.1269	0.5640	0.6909	0.0000	494.3983	494.3983	0.1135	0.0116	500.6989
2004	6.0651	4.6239	2.8197	0.0288	0.0321	0.3377	0.3699	8.6800e-003	0.3372	0.3458	0.0000	282.4557	282.4557	0.0683	8.1600e-003	286.5961
Maximum	**6.0651**	**8.2799**	**4.9083**	**0.0505**	**0.3054**	**0.5648**	**0.8701**	**0.1269**	**0.5640**	**0.6909**	**0.0000**	**494.3983**	**494.3983**	**0.1135**	**0.0116**	**500.6989**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2003**	**3-31-2003**	3.4898	3.4898
2	**4-1-2003**	**6-30-2003**	2.0465	2.0465
3	**7-1-2003**	**9-30-2003**	2.0689	2.0689
4	**10-1-2003**	**12-31-2003**	2.0822	2.0822
5	**1-1-2004**	**3-31-2004**	2.0595	2.0595
6	**4-1-2004**	**6-30-2004**	2.0465	2.0465
7	**7-1-2004**	**9-30-2004**	6.5928	6.5928
		Highest	6.5928	6.5928

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.4917	0.1142	4.6723	0.0124		0.6135	0.6135		0.6135	0.6135	81.1779	48.5416	129.7195	0.3825	8.7000e-004	139.5403
Energy	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	293.9601	293.9601	0.0157	4.1400e-003	295.5861
Mobile	1.8991	5.4332	21.3868	0.0368	1.0993	0.1175	1.2168	0.2944	0.1118	0.4062	0.0000	1,482.3351	1,482.3351	0.1988	0.1675	1,537.2099
Waste						0.0000	0.0000		0.0000	0.0000	22.7999	0.0000	22.7999	1.3474	0.0000	56.4859
Water						0.0000	0.0000		0.0000	0.0000	2.2531	9.5940	11.8471	0.2322	5.5600e-003	19.3102
Total	**5.4049**	**5.6681**	**26.1105**	**0.0500**	**1.0993**	**0.7408**	**1.8401**	**0.2944**	**0.7351**	**1.0294**	**106.2309**	**1,834.4309**	**1,940.6618**	**2.1766**	**0.1780**	**2,048.1325**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.4917	0.1142	4.6723	0.0124		0.6135	0.6135		0.6135	0.6135	81.1779	48.5416	129.7195	0.3825	8.7000e-004	139.5403
Energy	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	293.9601	293.9601	0.0157	4.1400e-003	295.5861
Mobile	1.8991	5.4332	21.3868	0.0368	1.0993	0.1175	1.2168	0.2944	0.1118	0.4062	0.0000	1,482.3351	1,482.3351	0.1988	0.1675	1,537.2099
Waste						0.0000	0.0000		0.0000	0.0000	22.7999	0.0000	22.7999	1.3474	0.0000	56.4859
Water						0.0000	0.0000		0.0000	0.0000	2.2531	9.5940	11.8471	0.2322	5.5600e-003	19.3102
Total	**5.4049**	**5.6681**	**26.1105**	**0.0500**	**1.0993**	**0.7408**	**1.8401**	**0.2944**	**0.7351**	**1.0294**	**106.2309**	**1,834.4309**	**1,940.6618**	**2.1766**	**0.1780**	**2,048.1325**

	ROG	NOx	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	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2003	1/14/2003	5	10	
2	Grading	Grading	1/15/2003	3/4/2003	5	35	
3	Building Construction	Building Construction	3/5/2003	8/3/2004	5	370	

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

4	Paving	Paving	8/4/2004	8/31/2004	5	20	
5	Architectural Coating	Architectural Coating	9/1/2004	9/28/2004	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 105

Acres of Paving: 0

Residential Indoor: 1,124,373; Residential Outdoor: 374,791; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	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	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	39.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2003

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0561	0.4016	0.1539	2.2500e-003		0.0252	0.0252		0.0252	0.0252	0.0000	20.0023	20.0023	4.5700e-003	0.0000	20.1165
Total	**0.0561**	**0.4016**	**0.1539**	**2.2500e-003**	**0.0983**	**0.0252**	**0.1235**	**0.0505**	**0.0252**	**0.0758**	**0.0000**	**20.0023**	**20.0023**	**4.5700e-003**	**0.0000**	**20.1165**

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

3.2 Site Preparation - 2003

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	2.0600e-003	2.8100e-003	0.0198	1.0000e-005	7.2000e-004	3.0000e-005	7.5000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	0.8388	0.8388	1.6000e-004	1.3000e-004	0.8825
Total	**2.0600e-003**	**2.8100e-003**	**0.0198**	**1.0000e-005**	**7.2000e-004**	**3.0000e-005**	**7.5000e-004**	**1.9000e-004**	**3.0000e-005**	**2.2000e-004**	**0.0000**	**0.8388**	**0.8388**	**1.6000e-004**	**1.3000e-004**	**0.8825**

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0561	0.4016	0.1539	2.2500e-003		0.0252	0.0252		0.0252	0.0252	0.0000	20.0023	20.0023	4.5700e-003	0.0000	20.1164
Total	**0.0561**	**0.4016**	**0.1539**	**2.2500e-003**	**0.0983**	**0.0252**	**0.1235**	**0.0505**	**0.0252**	**0.0758**	**0.0000**	**20.0023**	**20.0023**	**4.5700e-003**	**0.0000**	**20.1164**

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

3.2 Site Preparation - 2003

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	2.0600e-003	2.8100e-003	0.0198	1.0000e-005	7.2000e-004	3.0000e-005	7.5000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	0.8388	0.8388	1.6000e-004	1.3000e-004	0.8825
Total	**2.0600e-003**	**2.8100e-003**	**0.0198**	**1.0000e-005**	**7.2000e-004**	**3.0000e-005**	**7.5000e-004**	**1.9000e-004**	**3.0000e-005**	**2.2000e-004**	**0.0000**	**0.8388**	**0.8388**	**1.6000e-004**	**1.3000e-004**	**0.8825**

3.3 Grading - 2003

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					0.1611	0.0000	0.1611	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2646	2.1307	1.0772	0.0120		0.1124	0.1124		0.1124	0.1124	0.0000	114.5134	114.5134	0.0215	0.0000	115.0513
Total	**0.2646**	**2.1307**	**1.0772**	**0.0120**	**0.1611**	**0.1124**	**0.2734**	**0.0639**	**0.1124**	**0.1763**	**0.0000**	**114.5134**	**114.5134**	**0.0215**	**0.0000**	**115.0513**

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

3.3 Grading - 2003

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	8.0000e-003	0.0109	0.0772	5.0000e-005	2.8100e-003	1.2000e-004	2.9300e-003	7.5000e-004	1.1000e-004	8.6000e-004	0.0000	3.2622	3.2622	6.3000e-004	5.2000e-004	3.4320
Total	**8.0000e-003**	**0.0109**	**0.0772**	**5.0000e-005**	**2.8100e-003**	**1.2000e-004**	**2.9300e-003**	**7.5000e-004**	**1.1000e-004**	**8.6000e-004**	**0.0000**	**3.2622**	**3.2622**	**6.3000e-004**	**5.2000e-004**	**3.4320**

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					0.1611	0.0000	0.1611	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2646	2.1307	1.0772	0.0120		0.1124	0.1124		0.1124	0.1124	0.0000	114.5133	114.5133	0.0215	0.0000	115.0511
Total	**0.2646**	**2.1307**	**1.0772**	**0.0120**	**0.1611**	**0.1124**	**0.2734**	**0.0639**	**0.1124**	**0.1763**	**0.0000**	**114.5133**	**114.5133**	**0.0215**	**0.0000**	**115.0511**

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

3.3 Grading - 2003

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	8.0000e-003	0.0109	0.0772	5.0000e-005	2.8100e-003	1.2000e-004	2.9300e-003	7.5000e-004	1.1000e-004	8.6000e-004	0.0000	3.2622	3.2622	6.3000e-004	5.2000e-004	3.4320
Total	**8.0000e-003**	**0.0109**	**0.0772**	**5.0000e-005**	**2.8100e-003**	**1.2000e-004**	**2.9300e-003**	**7.5000e-004**	**1.1000e-004**	**8.6000e-004**	**0.0000**	**3.2622**	**3.2622**	**6.3000e-004**	**5.2000e-004**	**3.4320**

3.4 Building Construction - 2003

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	0.9423	5.2123	2.4148	0.0328		0.4098	0.4098		0.4098	0.4098	0.0000	283.8899	283.8899	0.0767	0.0000	285.8084
Total	**0.9423**	**5.2123**	**2.4148**	**0.0328**		**0.4098**	**0.4098**		**0.4098**	**0.4098**	**0.0000**	**283.8899**	**283.8899**	**0.0767**	**0.0000**	**285.8084**

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

3.4 Building Construction - 2003

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	0.0453	0.3901	0.2369	2.7500e-003	8.6300e-003	0.0159	0.0245	2.4900e-003	0.0152	0.0177	0.0000	32.6342	32.6342	2.2400e-003	4.7500e-003	34.1068
Worker	0.0963	0.1315	0.9285	6.2000e-004	0.0338	1.4100e-003	0.0353	8.9900e-003	1.3100e-003	0.0103	0.0000	39.2579	39.2579	7.6200e-003	6.2200e-003	41.3019
Total	**0.1416**	**0.5216**	**1.1654**	**3.3700e-003**	**0.0425**	**0.0173**	**0.0597**	**0.0115**	**0.0165**	**0.0280**	**0.0000**	**71.8922**	**71.8922**	**9.8600e-003**	**0.0110**	**75.4087**

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	0.9423	5.2123	2.4148	0.0328		0.4098	0.4098		0.4098	0.4098	0.0000	283.8896	283.8896	0.0767	0.0000	285.8081
Total	**0.9423**	**5.2123**	**2.4148**	**0.0328**		**0.4098**	**0.4098**		**0.4098**	**0.4098**	**0.0000**	**283.8896**	**283.8896**	**0.0767**	**0.0000**	**285.8081**

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

3.4 Building Construction - 2003

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	0.0453	0.3901	0.2369	2.7500e-003	8.6300e-003	0.0159	0.0245	2.4900e-003	0.0152	0.0177	0.0000	32.6342	32.6342	2.2400e-003	4.7500e-003	34.1068
Worker	0.0963	0.1315	0.9285	6.2000e-004	0.0338	1.4100e-003	0.0353	8.9900e-003	1.3100e-003	0.0103	0.0000	39.2579	39.2579	7.6200e-003	6.2200e-003	41.3019
Total	**0.1416**	**0.5216**	**1.1654**	**3.3700e-003**	**0.0425**	**0.0173**	**0.0597**	**0.0115**	**0.0165**	**0.0280**	**0.0000**	**71.8922**	**71.8922**	**9.8600e-003**	**0.0110**	**75.4087**

3.4 Building Construction - 2004

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	0.6718	3.7162	1.7216	0.0234		0.2922	0.2922		0.2922	0.2922	0.0000	202.4030	202.4030	0.0547	0.0000	203.7708
Total	**0.6718**	**3.7162**	**1.7216**	**0.0234**		**0.2922**	**0.2922**		**0.2922**	**0.2922**	**0.0000**	**202.4030**	**202.4030**	**0.0547**	**0.0000**	**203.7708**

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

3.4 Building Construction - 2004

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	0.0323	0.2781	0.1689	1.9600e-003	6.1500e-003	0.0113	0.0175	1.7800e-003	0.0108	0.0126	0.0000	23.2670	23.2670	1.6000e-003	3.3900e-003	24.3169
Worker	0.0687	0.0938	0.6620	4.4000e-004	0.0241	1.0000e-003	0.0251	6.4100e-003	9.3000e-004	7.3400e-003	0.0000	27.9895	27.9895	5.4300e-003	4.4300e-003	29.4468
Total	**0.1010**	**0.3719**	**0.8309**	**2.4000e-003**	**0.0303**	**0.0123**	**0.0426**	**8.1900e-003**	**0.0117**	**0.0199**	**0.0000**	**51.2565**	**51.2565**	**7.0300e-003**	**7.8200e-003**	**53.7636**

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	0.6718	3.7162	1.7216	0.0234		0.2922	0.2922		0.2922	0.2922	0.0000	202.4027	202.4027	0.0547	0.0000	203.7706
Total	**0.6718**	**3.7162**	**1.7216**	**0.0234**		**0.2922**	**0.2922**		**0.2922**	**0.2922**	**0.0000**	**202.4027**	**202.4027**	**0.0547**	**0.0000**	**203.7706**

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

3.4 Building Construction - 2004

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	0.0323	0.2781	0.1689	1.9600e-003	6.1500e-003	0.0113	0.0175	1.7800e-003	0.0108	0.0126	0.0000	23.2670	23.2670	1.6000e-003	3.3900e-003	24.3169
Worker	0.0687	0.0938	0.6620	4.4000e-004	0.0241	1.0000e-003	0.0251	6.4100e-003	9.3000e-004	7.3400e-003	0.0000	27.9895	27.9895	5.4300e-003	4.4300e-003	29.4468
Total	**0.1010**	**0.3719**	**0.8309**	**2.4000e-003**	**0.0303**	**0.0123**	**0.0426**	**8.1900e-003**	**0.0117**	**0.0199**	**0.0000**	**51.2565**	**51.2565**	**7.0300e-003**	**7.8200e-003**	**53.7636**

3.5 Paving - 2004

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	0.0668	0.4778	0.1940	2.7000e-003		0.0291	0.0291		0.0291	0.0291	0.0000	24.0995	24.0995	5.4400e-003	0.0000	24.2355
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0668**	**0.4778**	**0.1940**	**2.7000e-003**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**24.0995**	**24.0995**	**5.4400e-003**	**0.0000**	**24.2355**

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

3.5 Paving - 2004

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	3.4300e-003	4.6800e-003	0.0331	2.0000e-005	1.2100e-003	5.0000e-005	1.2600e-003	3.2000e-004	5.0000e-005	3.7000e-004	0.0000	1.3981	1.3981	2.7000e-004	2.2000e-004	1.4709
Total	**3.4300e-003**	**4.6800e-003**	**0.0331**	**2.0000e-005**	**1.2100e-003**	**5.0000e-005**	**1.2600e-003**	**3.2000e-004**	**5.0000e-005**	**3.7000e-004**	**0.0000**	**1.3981**	**1.3981**	**2.7000e-004**	**2.2000e-004**	**1.4709**

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	0.0668	0.4778	0.1940	2.7000e-003		0.0291	0.0291		0.0291	0.0291	0.0000	24.0995	24.0995	5.4400e-003	0.0000	24.2355
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0668**	**0.4778**	**0.1940**	**2.7000e-003**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**24.0995**	**24.0995**	**5.4400e-003**	**0.0000**	**24.2355**

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

3.5 Paving - 2004

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	3.4300e-003	4.6800e-003	0.0331	2.0000e-005	1.2100e-003	5.0000e-005	1.2600e-003	3.2000e-004	5.0000e-005	3.7000e-004	0.0000	1.3981	1.3981	2.7000e-004	2.2000e-004	1.4709
Total	**3.4300e-003**	**4.6800e-003**	**0.0331**	**2.0000e-005**	**1.2100e-003**	**5.0000e-005**	**1.2600e-003**	**3.2000e-004**	**5.0000e-005**	**3.7000e-004**	**0.0000**	**1.3981**	**1.3981**	**2.7000e-004**	**2.2000e-004**	**1.4709**

3.6 Architectural Coating - 2004

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	5.2115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7700e-003	0.0509	0.0225	3.0000e-004		4.1400e-003	4.1400e-003		4.1400e-003	4.1400e-003	0.0000	2.5533	2.5533	7.1000e-004	0.0000	2.5711
Total	**5.2202**	**0.0509**	**0.0225**	**3.0000e-004**		**4.1400e-003**	**4.1400e-003**		**4.1400e-003**	**4.1400e-003**	**0.0000**	**2.5533**	**2.5533**	**7.1000e-004**	**0.0000**	**2.5711**

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

3.6 Architectural Coating - 2004

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	1.8300e-003	2.5000e-003	0.0176	1.0000e-005	6.4000e-004	3.0000e-005	6.7000e-004	1.7000e-004	2.0000e-005	2.0000e-004	0.0000	0.7456	0.7456	1.4000e-004	1.2000e-004	0.7845
Total	**1.8300e-003**	**2.5000e-003**	**0.0176**	**1.0000e-005**	**6.4000e-004**	**3.0000e-005**	**6.7000e-004**	**1.7000e-004**	**2.0000e-005**	**2.0000e-004**	**0.0000**	**0.7456**	**0.7456**	**1.4000e-004**	**1.2000e-004**	**0.7845**

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	5.2115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7700e-003	0.0509	0.0225	3.0000e-004		4.1400e-003	4.1400e-003		4.1400e-003	4.1400e-003	0.0000	2.5533	2.5533	7.1000e-004	0.0000	2.5711
Total	**5.2202**	**0.0509**	**0.0225**	**3.0000e-004**		**4.1400e-003**	**4.1400e-003**		**4.1400e-003**	**4.1400e-003**	**0.0000**	**2.5533**	**2.5533**	**7.1000e-004**	**0.0000**	**2.5711**

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

3.6 Architectural Coating - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8300e-003	2.5000e-003	0.0176	1.0000e-005	6.4000e-004	3.0000e-005	6.7000e-004	1.7000e-004	2.0000e-005	2.0000e-004	0.0000	0.7456	0.7456	1.4000e-004	1.2000e-004	0.7845
Total	**1.8300e-003**	**2.5000e-003**	**0.0176**	**1.0000e-005**	**6.4000e-004**	**3.0000e-005**	**6.7000e-004**	**1.7000e-004**	**2.0000e-005**	**2.0000e-004**	**0.0000**	**0.7456**	**0.7456**	**1.4000e-004**	**1.2000e-004**	**0.7845**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8991	5.4332	21.3868	0.0368	1.0993	0.1175	1.2168	0.2944	0.1118	0.4062	0.0000	1,482.3351	1,482.3351	0.1988	0.1675	1,537.2099
Unmitigated	1.8991	5.4332	21.3868	0.0368	1.0993	0.1175	1.2168	0.2944	0.1118	0.4062	0.0000	1,482.3351	1,482.3351	0.1988	0.1675	1,537.2099

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,028.96	1,039.86	931.95	2,909,930	2,909,930
Total	1,028.96	1,039.86	931.95	2,909,930	2,909,930

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	10.80	7.30	7.50	42.30	19.60	38.10	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	0.469644	0.076968	0.160836	0.173619	0.042235	0.005594	0.011165	0.028022	0.000693	0.000053	0.021206	0.001062	0.008904

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.1419	154.1419	0.0130	1.5800e-003	154.9371
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.1419	154.1419	0.0130	1.5800e-003	154.9371
NaturalGas Mitigated	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
NaturalGas Unmitigated	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.62009e+006	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
Total		**0.0141**	**0.1207**	**0.0514**	**7.7000e-004**		**9.7600e-003**	**9.7600e-003**		**9.7600e-003**	**9.7600e-003**	**0.0000**	**139.8181**	**139.8181**	**2.6800e-003**	**2.5600e-003**	**140.6490**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.62009e+006	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003	0.0000	139.8181	139.8181	2.6800e-003	2.5600e-003	140.6490
Total		**0.0141**	**0.1207**	**0.0514**	**7.7000e-004**		**9.7600e-003**	**9.7600e-003**		**9.7600e-003**	**9.7600e-003**	**0.0000**	**139.8181**	**139.8181**	**2.6800e-003**	**2.5600e-003**	**140.6490**

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	869162	154.1419	0.0130	1.5800e-003	154.9371
Total		**154.1419**	**0.0130**	**1.5800e-003**	**154.9371**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	869162	154.1419	0.0130	1.5800e-003	154.9371
Total		**154.1419**	**0.0130**	**1.5800e-003**	**154.9371**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.4917	0.1142	4.6723	0.0124		0.6135	0.6135		0.6135	0.6135	81.1779	48.5416	129.7195	0.3825	8.7000e-004	139.5403
Unmitigated	3.4917	0.1142	4.6723	0.0124		0.6135	0.6135		0.6135	0.6135	81.1779	48.5416	129.7195	0.3825	8.7000e-004	139.5403

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	0.8686					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1685					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.4140	0.1014	3.7337	0.0124		0.6096	0.6096		0.6096	0.6096	81.1779	47.2196	128.3975	0.3804	8.7000e-004	138.1653
Landscaping	0.0406	0.0128	0.9386	4.0000e-005		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	1.3220	1.3220	2.1200e-003	0.0000	1.3750
Total	**3.4917**	**0.1142**	**4.6723**	**0.0124**		**0.6135**	**0.6135**		**0.6135**	**0.6135**	**81.1779**	**48.5417**	**129.7195**	**0.3825**	**8.7000e-004**	**139.5403**

Summers Pointe 2005 BAU - Kings County, Annual

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8686					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1685					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.4140	0.1014	3.7337	0.0124		0.6096	0.6096		0.6096	0.6096	81.1779	47.2196	128.3975	0.3804	8.7000e-004	138.1653
Landscaping	0.0406	0.0128	0.9386	4.0000e-005		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	1.3220	1.3220	2.1200e-003	0.0000	1.3750
Total	**3.4917**	**0.1142**	**4.6723**	**0.0124**		**0.6135**	**0.6135**		**0.6135**	**0.6135**	**81.1779**	**48.5417**	**129.7195**	**0.3825**	**8.7000e-004**	**139.5403**

7.0 Water Detail

7.1 Mitigation Measures Water

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			
Mitigated	11.8471	0.2322	5.5600e-003	19.3102
Unmitigated	11.8471	0.2322	5.5600e-003	19.3102

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.10179 / 4.47721	11.8471	0.2322	5.5600e-003	19.3102
Total		**11.8471**	**0.2322**	**5.5600e-003**	**19.3102**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.10179 / 4.47721	11.8471	0.2322	5.5600e-003	19.3102
Total		**11.8471**	**0.2322**	**5.5600e-003**	**19.3102**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	22.7999	1.3474	0.0000	56.4859
Unmitigated	22.7999	1.3474	0.0000	56.4859

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	112.32	22.7999	1.3474	0.0000	56.4859
Total		**22.7999**	**1.3474**	**0.0000**	**56.4859**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	112.32	22.7999	1.3474	0.0000	56.4859
Total		**22.7999**	**1.3474**	**0.0000**	**56.4859**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment F

Biological Evaluation

1401 Fulton Street, Suite 918 Fresno, CA 93721
www.soarhere.com • 559.547.8884

Biological Resource Assessment

Summer Point Tract #936 Subdivision Development Project
Assessor Parcel Number 017-100-012 and 017-100-013
Kings County, CA

Prepared for

4CREEKS

324 South Santa Fe Street, Suite A
Visalia, CA 93292

Prepared by

1401 Fulton St, Suite 918
Fresno, CA 93721

March 3, 2022

Executive Summary

As lead agency, the County of Kings has tasked 4Creeks, Inc. (4Creeks) to provide a Biological Resource Assessment (BRA) and Initial Study, for a Subdivision Development Project (Project) just outside the city of Armona, (City) in accordance with the California Environmental Quality Act (CEQA) prior to implementation of the proposed Project. 4Creeks has tasked Soar Environmental Consulting Inc. (Soar Environmental) to provide the BRA. The proposed subdivision development comprises 109 lots on 20 acres off Crocus Way to the South and Southeast of Lacy Boulevard and 14th Avenue. The Project site is comprised of Assessor Parcel Numbers 017-100-012 and 017-100-013. Soar Environmental prepared this Habitat Assessment Report for 4Creeks in support of California Environmental Quality Act requirements.

The objectives of this Assessment were to: 1) provide a general characterization of biological resources for the property; 2) inventory plant and wildlife species; 3) evaluate the potential for federal or state listed plants and animals species afforded other special regulatory protection; and 4) describe the property's sensitive biological resources and applicable federal, state, and local land use policies.

This BRA provides information about the biological resources within the Project area. Prior to field activities, Soar Environmental researched the California Natural Diversity Database (CNDDB) and the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California, to compile a list of special-status species that could potentially be present in the vicinity of the Project area. Soar Environmental researched specific species and habitat requirements for the species noted in the CNDDB, IPaC and CNPS databases and included species listing status, and proximal species observations in this report.

No listed species were observed during the habitat assessment of the Project site, and no suitable habitat features, or conditions were observed that would be conducive for any of the special status species identified in this report. Due to habitat quality and proximity of historical occurrences, all species identified in the data records search were found to be unlikely to occur within the vicinity of the Project site. Based on the findings of this assessment, the proposed development of this property is unlikely to adversely affect any special-status species and is likely to have no effect for CEQA considerations. Soar Environmental Consulting, Inc. recommends that if any special status species are observed during construction activities, work be stopped immediately and CDFW is contacted.

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1. Introduction

The proposed subdivision development comprises 109 lots on 20 acres of land on Assessor Parcel Numbers (APN) 017-100-012 and 017-100-013 just outside the City of Armona, Kings County California. 4Creeks has tasked Soar Environmental Consulting (Soar Environmental) with providing a Biological Resource Assessment (BRA) as part of an Initial Study (IS) in accordance with the California Environmental Quality Act (CEQA). The Project site is a former orchard on which an apartment complex would be constructed. Soar Environmental prepared this BRA for 4Creeks in support of CEQA requirements.

Based on a review of CNDDB database it was determined that a Habitat Assessment was necessary to search for the potential presence or suitable habitat for the 9 following State listed sensitive wildlife species: blunt-nosed leopard lizard, California tiger salamander, San Joaquin kit fox, Tipton kangaroo rat, Swainson's hawk, tricolored blackbird, western snowy plover, vernal pool fairy shrimp, and vernal pool tadpole shrimp.

A review of the USFWS IPaC database indicated a Habitat Assessment should also include analysis for the 8 additional Federally listed special-status species: Fresno kangaroo rat, giant kangaroo rat, giant garter, California red-legged frog, delta smelt, monarch butterfly, conservancy fairy shrimp, and flowering plants species Hoover's spurge.

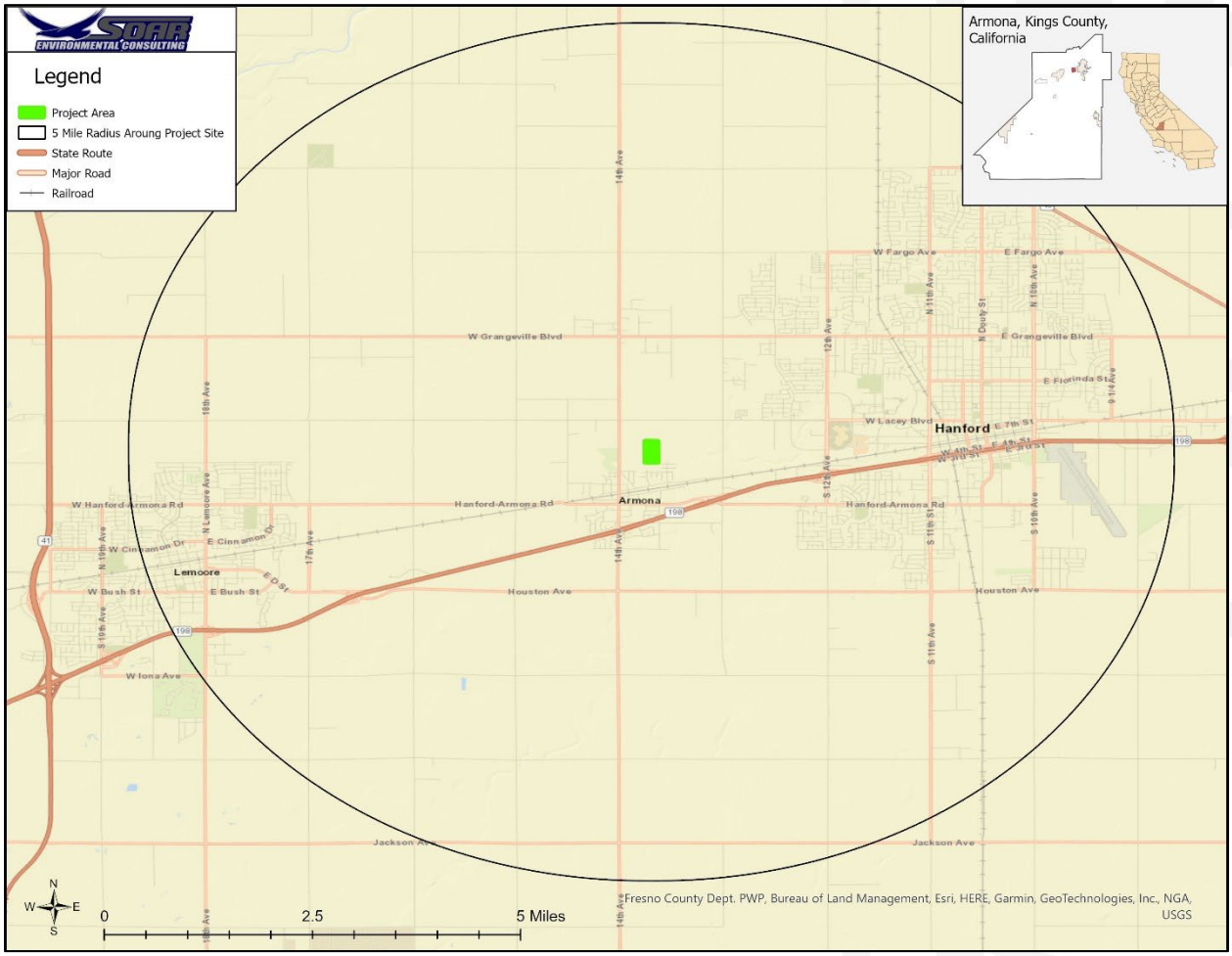
A review of the CNPS Inventory of Rare and Endangered Plants of California identified the following 6 sensitive plant species historically occurring in the vicinity of the Project site: California jewelflower, hairy Orcutt grass, Hartweg's golden sunburst, San Joaquin adobe sunburst, San Joaquin Valley Orcutt grass, and succulent owl's-clover.

A Habitat Assessment was conducted in the Project area on January 20, 2022, by Soar Environmental biologist Travis Albert. The purpose of the Habitat Assessment survey was to search for the presence of special-status species that have historically been observed within, or surrounding, the Project area. No special-status species were observed during the site visit.

1.1 Project Location

The Project site is located just outside the City of Armona, near Crocus Way to the South and Southeast of Lacy Boulevard and 14th Avenue in Kings County. The Project site is approximately 5.65 miles east of State Route (SR) 41, and 0.60 miles north of State Route (SR) 198. Located in the USGS *Hanford* 7.5-minute quadrangle in Township 18S, Range 21E, and NW ¼ of section 33. The Project site is a 20 acre property just outside the city limits, comprised of Assessor Parcel Numbers 017-100-012, and 017-100-013 (**Figure 1**).

Figure 1. Project Location



1.2 Environmental Setting

The Project site is in a residential and agricultural interface environment just outside the north boundary of the City (**Figure 1**). There are residential neighborhoods on the other side of a vacant lot to the south, and agricultural land to the north, east, and west. An irrigation canal runs north and south approximately 0.5 mile east and is surrounded by active agricultural fields. No other natural water features occur in the vicinity of the Project site. The topography of the area is flat, approximately 250 feet above mean sea level. The soil on the Project site is highly compacted except for where the rows of orchard trees are planted. There is a grove of eucalyptus trees next to the single-family residence in the northwest corner of the property. Other than orchard trees there are few other trees in the surrounding area. Powerlines run east and west along the southern boundary. No small mammal burrows or vernal pool features were observed in the vicinity of the Project site.

Figure 1 – Project Site Boundary

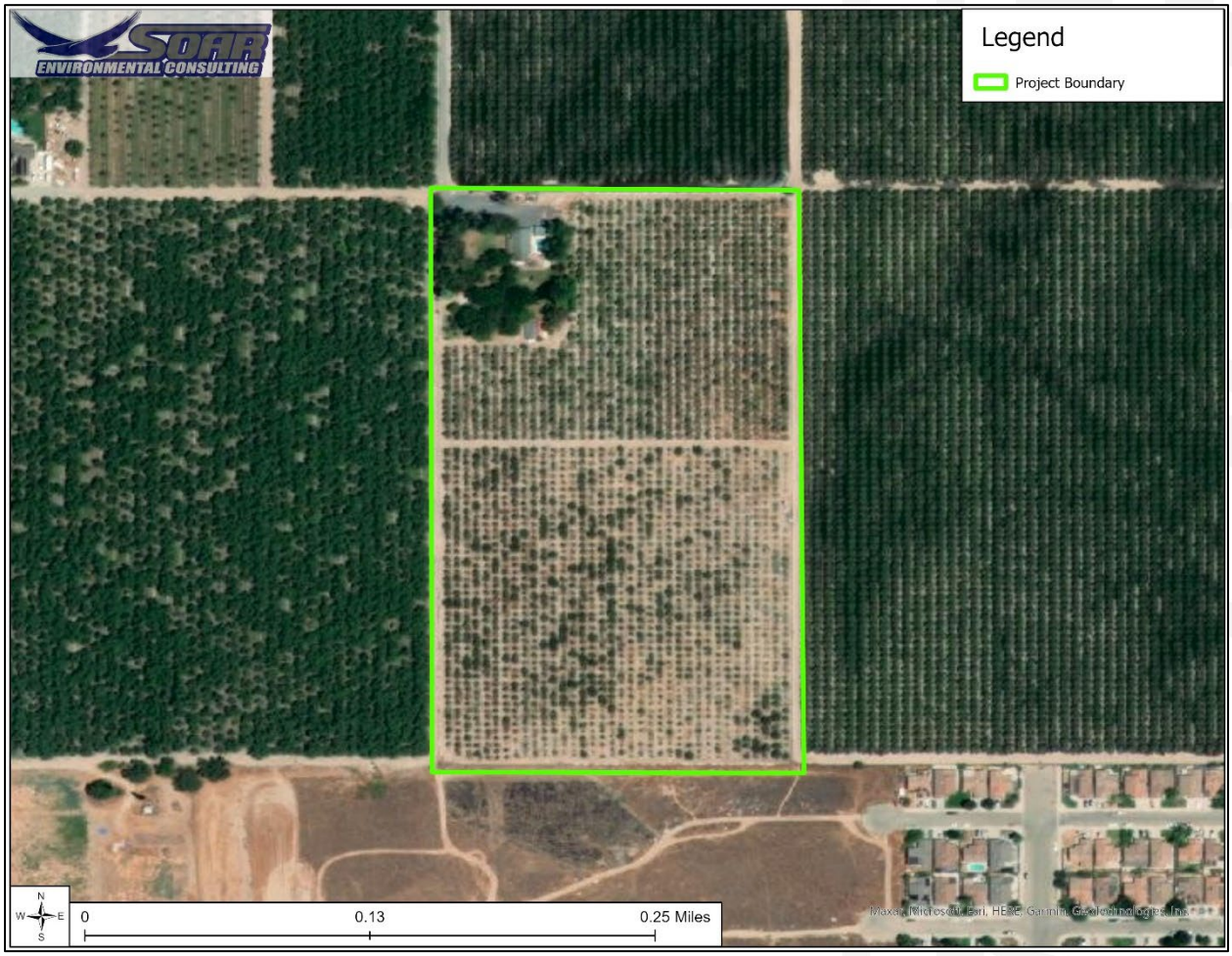
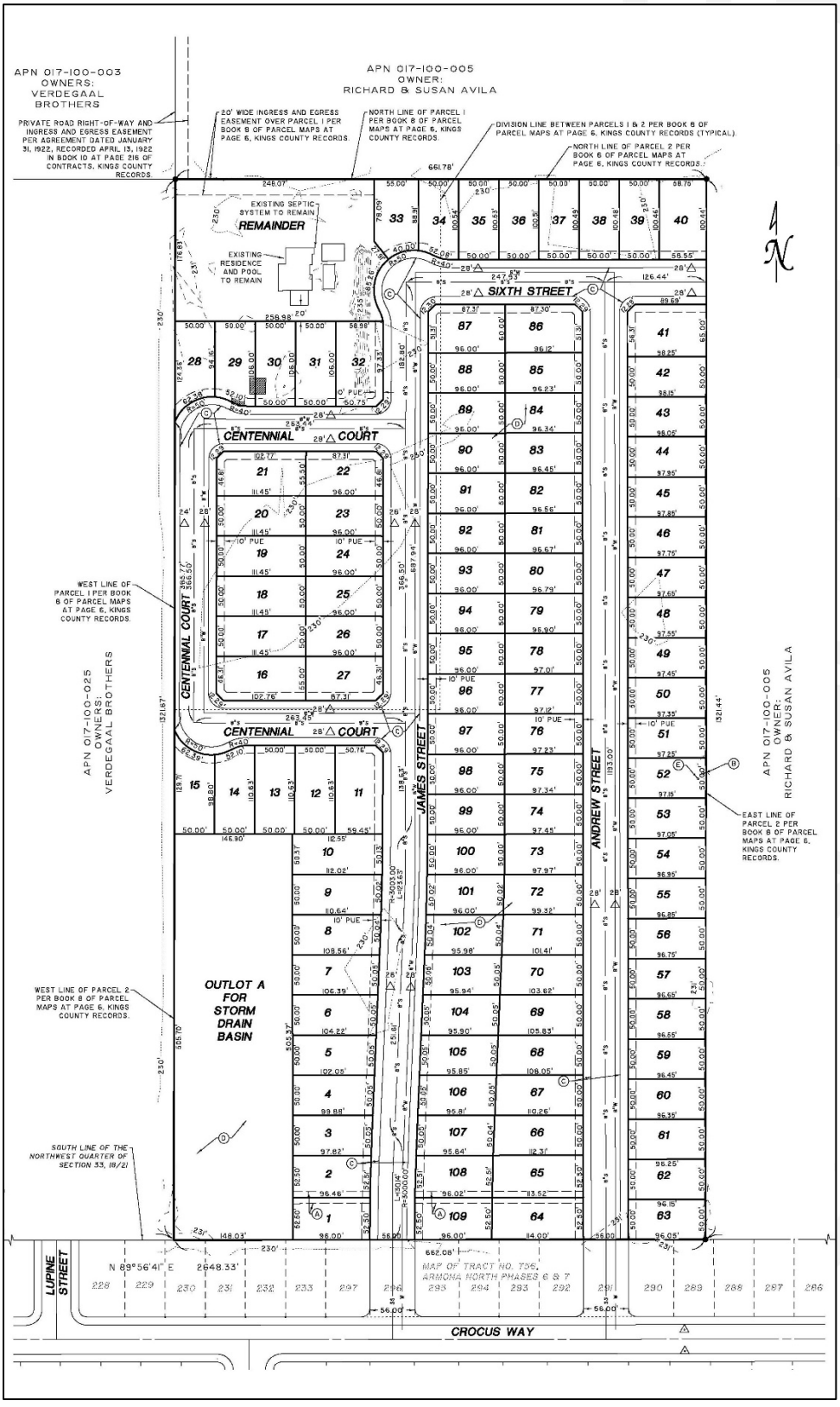


Figure 3 – Site Plan



2. Methods

2.1 Literature Review

Prior to performing the Habitat Assessment, Soar Environmental conducted a records search for threatened or endangered species that could potentially occur in the vicinity of the Project area. The records search included a review of the California Natural Diversity Database (CNDDB), the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), and California Native Plant Society (CNPS) Online Rare Plant Inventory. The area covered by the data records search included USGS 7.5 minute quadrangles of *Hanford, Burris Park, Guermsey, Laton, Lemoore, Remnoy, Riverdale, Stratford,* and *Waukena*. From these sources a list of special-status plant and animal species was generated. Proximal locations of special-status plant and animal species located within 5 miles of the Project site are shown in (**Figure 4**).

The CNDDB records search indicated 9 State-listed special-status wildlife species most likely to occur within or near the Project site would include:

- Blunt-nosed leopard lizard (*Gambelia sila*)
- California tiger salamander (*Ambystoma californiense*)
- San Joaquin kit fox (*Vulpes macrotis mutica*)
- Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)
- Swainson's hawk (*Buteo swainsoni*)
- Tricolored blackbird (*Agelaius tricolor*)
- Western snowy plover (*Charadrius nivosus nivosus*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)

The IPaC search revealed 6 additional Federally listed sensitive wildlife species likely to occur within or near the Project site include:

- Fresno kangaroo rat (*Dipodomys nitratoides exilis*)
- Giant kangaroo rat (*Dipodomys ingens*)
- Giant garter snake (*Thamnophis gigas*)
- California red-legged frog (*Rana draytonii*)
- Delta smelt (*Hypomesus transpacificus*)
- Monarch butterfly (*Danaus plexippus*)
- Conservancy fairy shrimp (*Branchinecta conservatio*)
- Hoover's spurge (*Chamaesyce hooveri*)

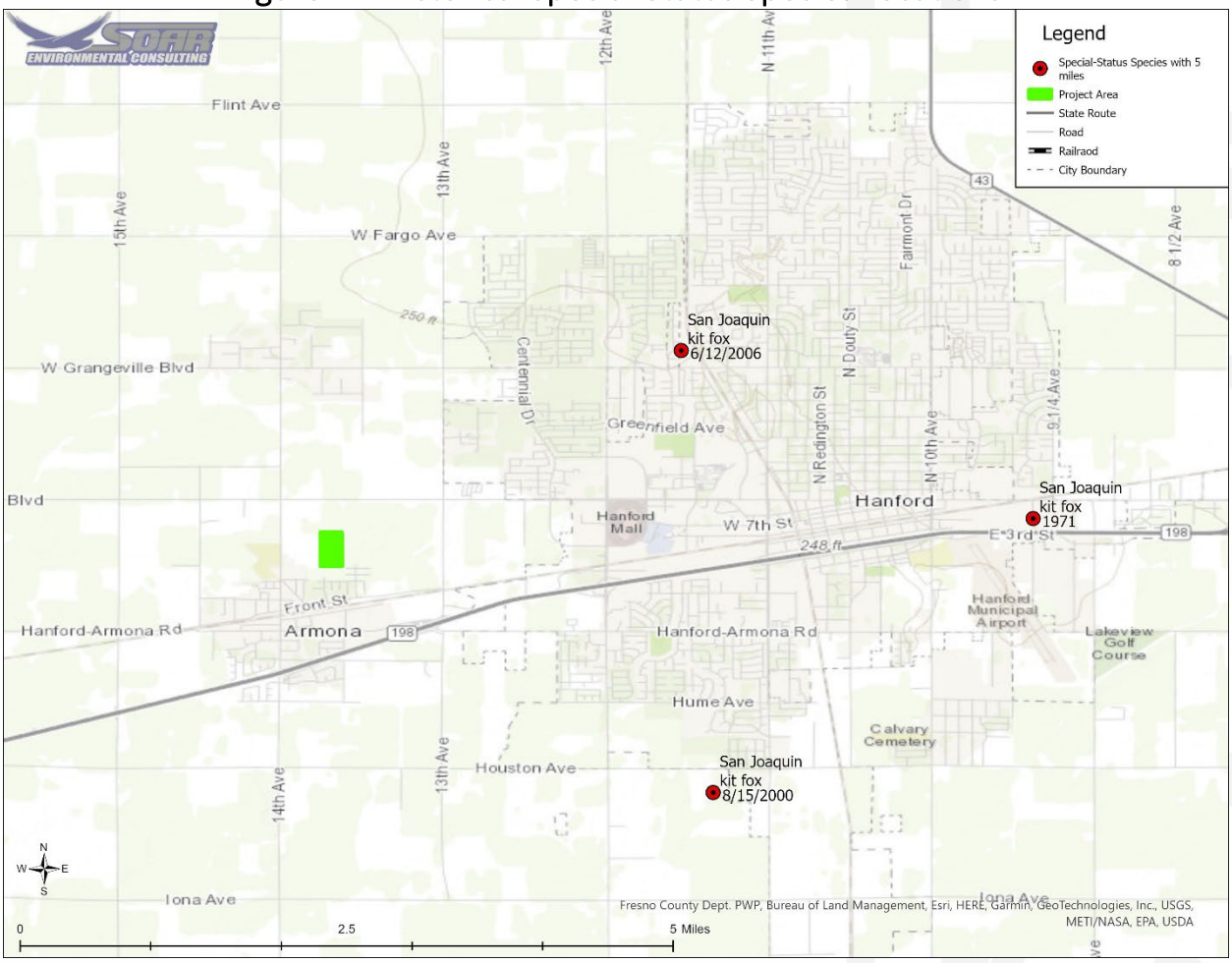
A search of the California Native Plant Society (CNPS) Online Rare Plant Inventory identified the following 6 special-status plant species likely to occur within or proximate to the Project site:

- California jewelflower (*Caulanthus californicus*)
- Hairy Orcutt grass (*Orcuttia pilosa*)
- Hartweg's golden sunburst (*Pseudobahia bahiifolia*)
- San Joaquin adobe sunburst (*Pseudobahia peirsonii*)

- San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)
- Succulent owl's-clover (*Castilleja campestris var. succulenta*)

The closest and most recent occurrences of special-status species from the data records search are shown in (**Figure 4**) below.

Figure 4 – Historical Special-Status Species Locations



2.2 Field Reconnaissance Methodology

On January 22, 2022, Soar Environmental biologist Travis Albert conducted a habitat assessment on the property for the above mentioned species. Walking the perimeter of the property, and meandering transects throughout the Project site, the surveyor searched for signs of vernal pools, bird nests, possible small mammal dens, identified vegetation, and looked for other signs of wildlife occupancy and suitable habitat. Survey efforts emphasized the search for special-status species that had documented

occurrences in the data records search of the CNDDB, IPaC, and CNPS databases. Photos were taken depicting the habitat and of the Project boundaries (**Appendix A**). After surveying the Project site, the surveyor drove the roads within 0.5 miles surrounding the Project footprint, searching for signs of special-status species, potentially active nests, and vernal pools. No active nests, small mammal burrows, vernal pools, or riparian habitats were observed. No special-status plant or wildlife species were observed during the Habitat Assessment.

3. Habitat Assessment Results

During the field reconnaissance, there were no observations of special-status plant or wildlife species. The Project site is in a residential and agricultural environment just north of the City. The surrounding area is an agricultural field, surrounded by other active agricultural fields, with the city of Armona and residential neighborhoods adjacent to the south. The soil is highly compacted from agricultural equipment except for where the rows of orchard trees are planted. There is a grove of eucalyptus trees next to the single-family residence in the northwest corner of the property. There were no nests or cavities observed in this tree grove and there were no other areas within the vicinity of the property with suitable nesting habitat. Powerline poles run east and west along the southern boundary. No raptor nests were observed on any of the powerline poles in the area, and no small mammal burrows or vernal pool features were observed in the vicinity of the Project site. No riparian areas, drainages, or natural waterways are connected to the site. During the site visit, a recorded raptor call was played over a speaker on a timer in the orchard, which likely deters most wildlife from occupying the area. Other than the orchard trees, most plant species identified on the Project Site were ruderal species, the first to colonize after major ground disturbance. Plant species identified on site are listed in (**Table 1**).

The Habitat Assessment was conducted outside of the blooming period for special status plant species, listed in (**Table 3**). Regardless, no special-status plant species were observed on the Project site. Ground cover is dominated by ruderal grasses and invasive weeds. Habitat conditions did not appear to be conducive for the listed plant species during the site visit.

Table 1– Species Observed on the Project Site

Plant Species Observed	Listing Status
Cheeseweed (*malva parviflora*)	None
Common groundsel (*Senecio vulgaris*)	None
Eucalyptus tree (*Corymbia citriodora*)	None
Oat (*Avena sativa*)	None
Prickely lettuce (*Lactuca serriola*)	None

Russian Thistle (*Salsola kali*)	None
Wall Barley (*Hordeum murinum*)	None

4. Special-Status Species

Special-status plants and animals that have a reasonable possibility to occur in the Project area based on habitat suitability and requirements, elevation and geographic range, soils, topography, surrounding land uses, and proximity of known occurrences in the CNDDB, IPaC, and CNPS databases to the Project area are listed in **Tables 2 and 3**. The likelihood for occurrence of special-status species was assessed using information from the various listed sources, wildlife and botanical surveys. Narratives are provided for species for which there are land use planning and regulatory implications. Special-status species for which there are no habitat features are excluded from consideration due to the lack of suitable habitat and distance from the subject property.

Based upon a review of the resources and databases listed in Section 2.1 (Literature Review) for the *Hanford, Burris Park, Guermsey, Laton, Lemoore, Remnoy, Riverdale, Stratford,* and *Waukena* USGS 7.5-minute quadrangles; it was determined that 23 special-status species have been documented in the vicinity of the Project area. Of these 23 special-status species, 1 was determined to have reasonable potential for occurrence in the vicinity of the Project site.

Species with Potential for Occurrence:

- San Joaquin kit fox (*Vulpes macrotis mutica*)

Special-status species and sensitive habitats include plant and wildlife taxa, or other unique biological features that are afforded special protection by local land use policies, state and federal regulations. Special-status plant and animal species are those that are listed as rare, threatened, or endangered under the state or federal Endangered Species Acts. Vegetation communities may warrant special-status if they are of limited distribution, have high wildlife value, or are particularly vulnerable to disturbance. Listed and special-status species are defined as:

- Listed or proposed for listing under the state or Federal Endangered Species acts.
- Protected under other regulations (e.g., Migratory Bird Treaty Act).
- CDFG Species of Special Concern.
- Listed as species of concern by CNPS or USFWS; or
- Receive consideration during environmental review under CEQA.

Special-status species considered for this analysis are based on field survey results, review of the CNDDB occurrence records of species, review of the USFWS lists for special-status species occurring in the region, and CNPS literature (**Tables 2 and 3**).

- **Present**: Species known to occur on the site, based on CNDDB records, and/or was observed on the site during the field survey.
- **High**: Species known to occur on or near the site (based on CNDDB records within 8 km or 5 mi)

and there is suitable habitat on the site.

- **Low**: Species known to occur in the vicinity of the site, and there is marginal habitat onsite. -**OR**- Species is not known to occur in the vicinity of the site, however there is suitable habitat on the site.
- **None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site. -**OR**- Species was surveyed for during the appropriate season with negative results.

Table 2 – Special-Status Wildlife Species Potentially Occurring on Site or in the Vicinity

Common/ Scientific Name	Listing Status*	Habitat Requirements	Potential for Occurrence
Amphibians			
California red-legged frog (*Rana draytonii*)	FT, SSC	Standing waters and freshwater marshes, wetland. Forest, scrub, and woodland riparian areas. Requires a breeding pond, slow-flowing stream. Will use small mammal burrows.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
California tiger salamander (*Ambystoma californiense*)	FT, ST	Grasslands, oak savannah riparian woodlands and lower elevations of coniferous forests, ditches, vernal pools, and wetlands.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Birds			
Swainson's hawk (*Buteo swainsoni*)	ST, MBTA	Nests in isolated trees or riparian woodlands adjacent to suitable foraging habitat (agricultural fields, grasslands, etc.).	**Low**: Species is not known to occur in the vicinity of the site, however suitable habitat is marginal.
Tricolored blackbird (*Agelaius tricolor*)	ST, BCC, MBTA	Found in areas near water, such as marshes, grasslands, and wetlands. They require some sort of substrate nearby to build nests.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT, SE, MBTA	Woodlands near streams or lakes, abandoned farmland, old fruit orchards, successional shrubland and dense thickets.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Fishes			
Delta smelt (*Hypomesus transpacificus*)	FT	Shallow, fresh, or slightly brackish backwater sloughs and edge waters, with good water quality and substrate for spawning.	**None**: Species is not known to occur on or in the vicinity of the site and there is no

			suitable habitat for the species on the site.
Invertebrates			
Conservancy fairy shrimp (Branchinecta conservation)	FE	Inhabit large, cool-water vernal pools from early November to early April, which fill with water in the rainy season, then slowly dry up.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Monarch butterfly (Danaus plexippus)	FC	Closed-cone coniferous forest. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana), in riparian scrub	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in valley foothills grasslands, vernal pools, and wetlands.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Vernal pool tadpole shrimp (Lepidurus packardi)	FE	Vernal pools, (hardpan, duripan, or claypan), grassland. Pools commonly found in grass-bottomed or mud-bottomed swales.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Mammals			
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	FE, SE	Arid and alkaline plains under shrub and grass vegetation, coastal scrub, open stages of chaparral, and desert scrub habitats, and in conifer woodlands.	**Low:** Species known to occur in the vicinity of the site, and there is marginal habitat onsite.
Giant kangaroo rat (Dipodomys ingens)	FE	Fine sandy loam soils supporting sparse annual grass/forb vegetation, and marginally found in low-density alkali desert scrub.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, SE	Arid and alkaline plains under shrub and grass vegetation, coastal scrub, open stages of chaparral, and desert scrub habitats, and in conifer woodlands.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.

San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, SE	Arid flat grasslands, scrublands, and alkali meadows with short vegetation.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Reptiles			
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, SE	Semi-arid grasslands, alkali flats, and washes, utilize shrubs and small mammal burrows.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.
Giant garter snake (Thamnophis gigas)	FT	Marshes, sloughs, drainage canals, irrigation ditches, and prefers locations with vegetation close to water for basking.	**None**: Species is not known to occur on or in the vicinity of the site and there is no suitable habitat for the species on the site.

*Listing Status Notes:

Federal: FE – Federally listed Endangered
FT – Federally listed Threatened
FC – Federal Candidate Species
WL – USFWS Watch list
BCC – USFWS Bird of Conservation Concern
MTBA – Migratory Bird Treaty Act

State: SE – State listed Endangered
ST – State listed Threatened
SC – State Candidate Species
SR – State Rare Species
SA – State Special Animal
FP – CDFW Fully Protected Species
SSC – CDFW Species of Special Concern
WL – CDFW Watch List

Table 3 – Special-Status Plant Species Potentially Occurring on Site or in the Vicinity

Common/ Scientific Name	*Status Fed/CA/CNPS/ Bloom Period	Habitat Description	Habitat Present/ Absent
California Jewelflower (*Caulanthus californicus*)	FE/CE/1B.1/ Feb-May	Chenopod scrub, Pinyon-Juniper woodland, valley and foothill grassland (61- 1000 m; 200 -3280 ft)	Absent
Hairy Orcutt Grass (*Orcuttia pilosa*)	FE/SE/1B.1/ May-Sep	Vernal pools (46 - 200 m; 150 – 655 ft)	Absent
Hartweg's golden sunburst (*Pseudobahia bahiifolia*)	FE/CE.1B.1/ Mar-Apr	Open grasslands and grasslands at the margins of blue oak woodland, foothills	Absent

San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT/CE/1B.1/ Feb-Apr	Cismontane woodland, valley and foothill grassland, adobe clay	Absent
San Joaquin Valley Orcutt Grass (*Orcuttia inaequalis*)	FT/CE/1B.1/ Apr-Sep	Vernal pools (10 -755 m; 35 - 2475 ft)	Absent
Succulent Owl's-clover (*Castilleja campestris ssp. Succulenta*)	1B.2 (Mar) Apr-May	Vernal pools (50 – 750 m; 165-2460 ft)	Absent

*Listing Status Notes:

Federal: FE – Federally listed Endangered
FT – Federally listed Threatened
FC – Federal Candidate Species

State: SE – State listed Endangered
ST – State listed Threatened
SC – State Candidate Species
SR – State Rare Species

CRPR: California Native Plant Society Rare Plant Rank
CBR – Considered but Rejected
1B – Rare, threatened, or endangered in CA and elsewhere
2 – Rare, threatened, or endangered in CA but common elsewhere
4 – Limited distribution (Watch-list)
CBR – Considered but Rejected

CRPR Extensions 0.1 – Seriously endangered in California
0.2 – Fairly endangered in California
0.3 – Not very endangered in California

4.1 Special-Status Wildlife Species Descriptions

This section describes identifiable physical characteristics and habitat requirements for special-status species identified in the CNDDB records search that were within 5 miles of the Project site.

San Joaquin Kit Fox (Vulpes macrotis mutica)

The San Joaquin kit fox (SJKF) is listed as Threatened at the Federal level and Endangered at the State level. SJKF are petite, light-colored canids, approximately 50 centimeters (20 inches) in length, with bushy, black-tipped tails, large ears, and pointed snouts.

SJKF is a desert-adapted species which occurs mainly in arid, flat grasslands, scrublands, and alkali meadows where the vegetation structure is relatively short. This species uses dens year-round and needs loose-textured soils suitable for burrowing. They primarily prey on kangaroo rats and other small rodents, as well as large insects and occasionally rabbits. A typical kit fox den is anywhere from four to 10 inches in diameter, and is taller than it is wide, often with a keyhole shape. SJKF dens usually have dirt berms and matted vegetation adjacent to the entrances, and tracks and prey remains will normally be detected nearby. SJKF may also utilize man-made structures such as pipes and culverts as dens.

During the Habitat Assessment, no signs of San Joaquin kit fox were observed within the Project Site or surrounding areas. A search of CNDDB records indicate the nearest and most recent occurrence of this species is 2.58 miles away, at 53° NE from the Project Site in June 2006, observed in an undeveloped parcel of land.

5. Findings

During the Habitat Assessment, Soar Environmental did not observe any of the referenced special-status species within the Project site or environmental footprint. A records search of the CNDDB, IPaC, and CNPS Online Rare Plant Inventory indicated San Joaquin kitfox as the only special-status species with historical observations within 5 miles of the Project site (**Figure 4**). The findings for this report are summarized below.

There were no signs of San Joaquin kit fox at the time of the Habitat Assessment. Suitable habitat for this species is poor within the vicinity of the Project site. A search of CNDDB records indicate the nearest and most recent occurrence of kit fox is 2.58 miles away, at 53° NE from the Project site in June 2006. No small mammal burrows were observed that would provide adequate refugia for kit fox or associated prey base species. The Project site and surrounding area is highly disturbed from agricultural activity. Due to the level of agricultural activity, residential development of the surrounding area, lack of suitable habitat, time span and distance of other known occurrences from the site, occurrence of San Joaquin kit fox within the vicinity of the project site is unlikely, and the proposed Project is unlikely to adversely affect populations of this species.

6. Recommendations

No listed species were observed during the Habitat Assessment of the Project site, and no suitable habitat features, or conditions were observed that would be conducive for any of the aforementioned species. The proposed development of this parcel is unlikely to adversely affect any special-status species. Soar Environmental Consulting, Inc. recommends that if any special status species are observed during construction activities, work be stopped immediately and CDFW is contacted.

7. Study Limitations

This Report has been prepared in accordance with generally accepted environmental methodologies and contains all the limitations inherent in these methodologies. The Report documents site conditions that were observed during field reconnaissance and do not apply to future conditions. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this Report.

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APPENDIX A: Project Site Photographs

Photo 1 – Residence on the Project Site

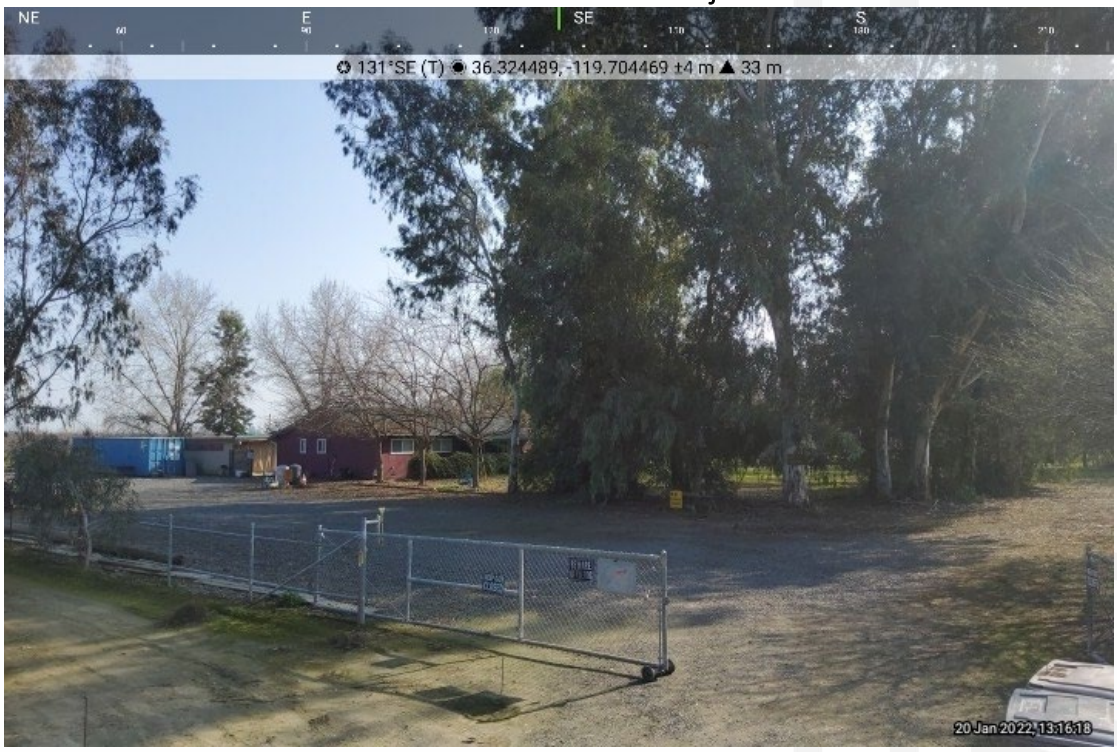


Photo 2 – North Boundary (View East)

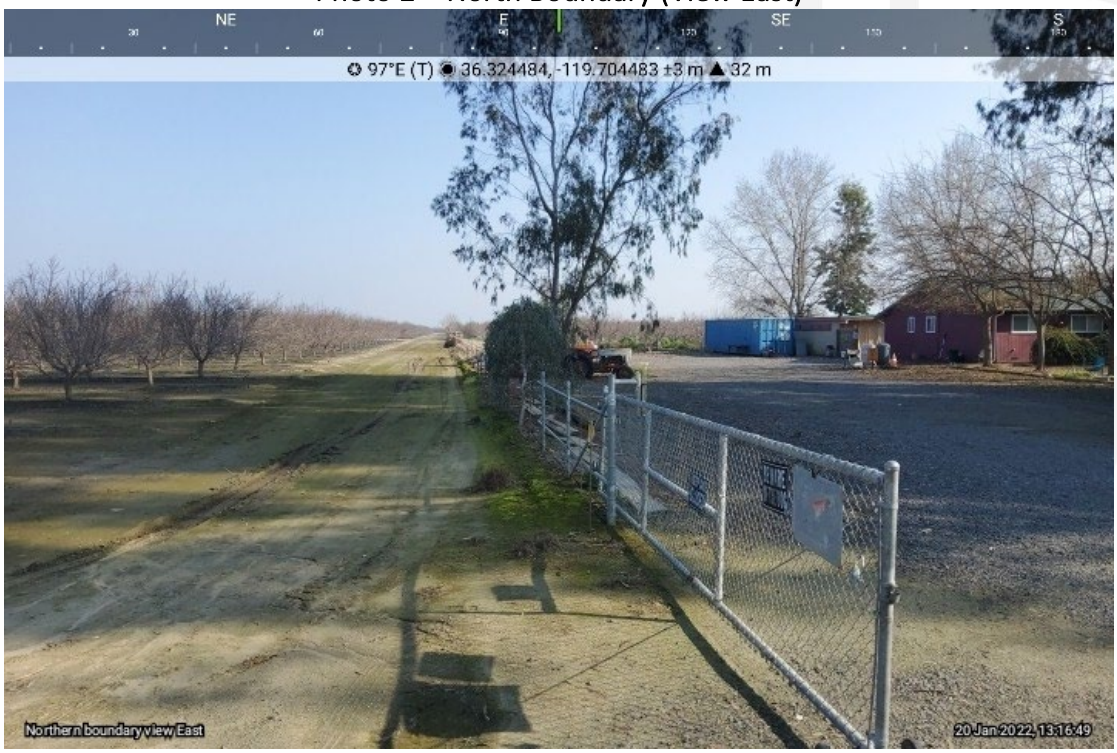


Photo 3 – East Boundary of Project Site (View South)

Photo 4 – South Boundary of Project Site (View West)

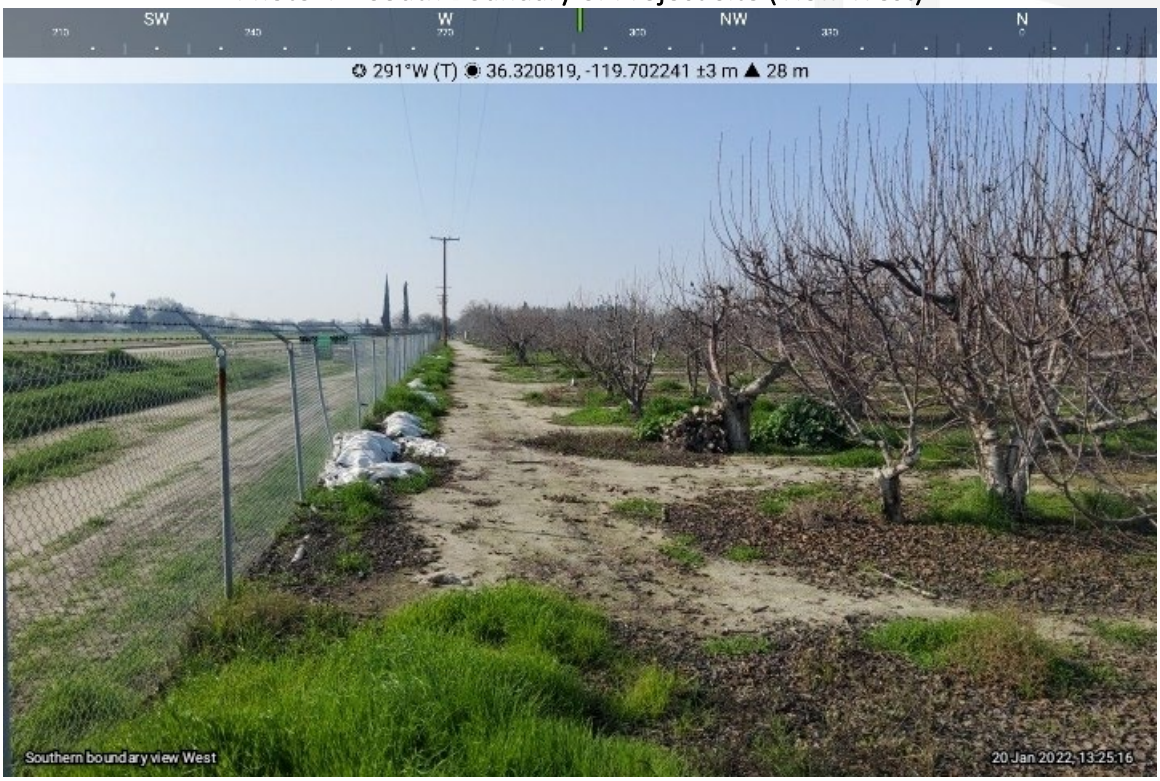


Photo 5 – West Boundary of Project Site (View North)

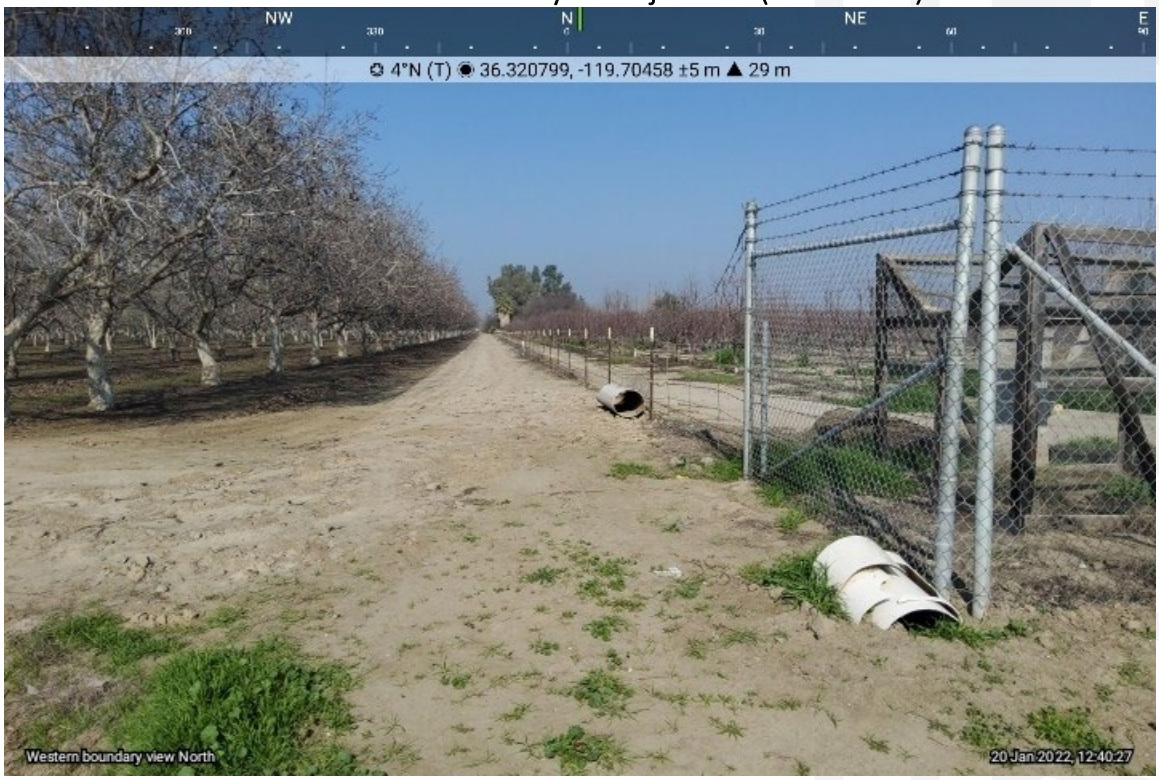
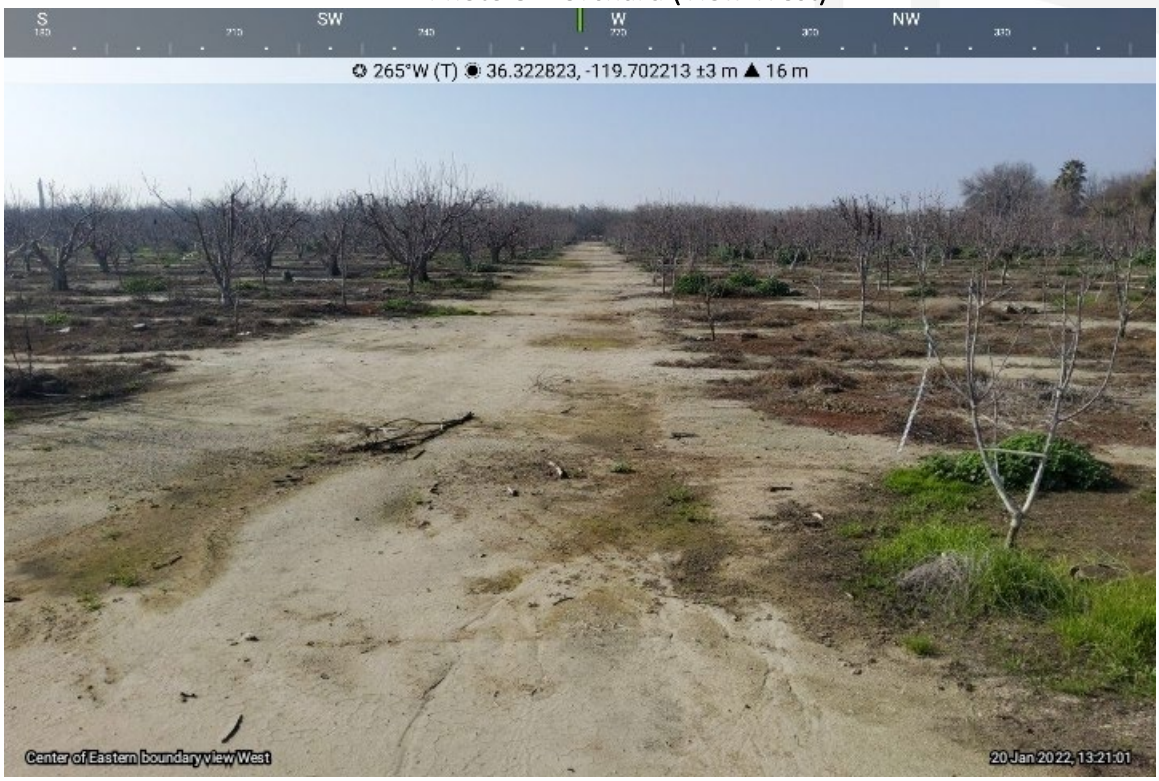


Photo 6 – Southwest Corner (View Northeast)

Photo 7 – Orchard (View South)

Photo 8 – Orchard (View West)



Attachment G

Cultural Resources Assessment

Interim Phase I Cultural Resources Assessment for the Summers Pointe Tract 936 Tentative Subdivision Map Project, Kings County, California

Consuelo Y. Sauls

Prepared By

Taylored Archaeology
6083 N. Figarden Dr., Ste 616
Fresno, CA 93722

Prepared For
4Creeks, Inc.
324 S. Santa Fe St., Suite A
Visalia, CA 93292

March 2022

USGS Hanford 7.5' topographic quadrangle;
20.08 total project acres; 20.08 acres surveyed
Keywords: Negative findings

EXECUTIVE SUMMARY

Taylored Archaeology has completed an interim Phase I cultural resource assessment for the Summers Pointe Tract 936 Tentative Subdivision Map Project in Kings County, California. The Project proposes to construct 109 single-family units of residential development. The Project is subject to the California Environmental Quality Act (CEQA).

The records search results from the Southern San Joaquin Valley Information Center indicated no evidence of recorded cultural resources within the Project area but stated six prior cultural resource investigations were conducted in the Project area. Further research revealed no prior pedestrian surveys were conducted within the Project boundary. In addition, five recorded cultural resources were identified, and seven previous cultural resource investigations were conducted, within a 0.5-mile radius. As of the date of this interim report, no response was received from the Native American Heritage Commission regarding the Sacred Lands File search. Once a response is received, it will be forwarded to the CEQA lead agency as part of the final Phase I cultural resource assessment report.

A Phase I archaeological pedestrian survey of the 20.08-acre Project site was conducted by archaeologist Consuelo Sauls on February 5, 2022. The terrain throughout the Project has been disturbed by more than a century of agricultural use. No archaeological resources were identified within the Project area. One outbuilding/shed of undetermined age was observed within the Project boundary during the survey and may need to be assessed by an architectural historian to determine the potential age or historical significance.

Due to the Project site being located within 0.25 miles of the former Mussel Slough, Taylored Archaeology recommends an archaeological monitor be present during ground disturbing activities.

In the event that previously unidentified archaeological remains are encountered during development or ground-moving activities in the Project area, all work should be halted until a qualified archaeologist can identify the discovery and assess its significance. In the event of accidental discovery of unidentified archaeological remains during development or ground-moving activities in the Project area, all work shall be halted in the immediate vicinity (within a 100-foot radius) until a qualified archaeologist can identify the discovery and assess its significance.

If human remains are uncovered during construction, the Kings County Coroner is to be notified to investigate the remains and arrange proper treatment and disposition. If the remains are identified on the basis of archaeological context, age, cultural associations, or biological traits to be those of a Native American, California Health and Safety Code 7050.5 and PRC 5097.98 require that the coroner notify the Native American Heritage Commission (NAHC) within 24 hours of discovery. The NAHC will be responsible for designating the Most Likely Descendent who will make recommendations regarding the treatment and disposition of the remains.

CONTENTS

APPENDICIES

FIGURES

1
INTRODUCTION

Taylored Archaeology performed a Phase I cultural resource assessment for the Summers Pointe Tract 936 Tentative Subdivision Map Project (Project) in unincorporated Kings County, California.

The Project is currently seeking approval from Kings County for a single-family residential development on the Project site. As part of the development approval process, Kings County as the lead agency must comply with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] 21000 [g] mandate that government agencies consider the impacts of a project on the environment, including cultural resources.

1.1 PROJECT DESCRIPTION AND LOCATION

The proposed Project includes the construction of a single-family residential development of approximately 109 units on the 20.08-acre Project site. The Project lies north of the community of Armona, south of West Lacey Boulevard, east of 14th Avenue and north of Highway 198 (Figure 1-1). 4Creeks, Inc., as the prime contractor to the private developer for environmental compliance services, retained Taylored Archaeology to conduct a Phase I cultural resources assessment of the Project for compliance with CEQA.

The proposed Project site is comprised of Assessor Parcel Numbers 017-100-012 and 017-100-013 and is within Section 33 of Township 18 South, Range 21 East, Mount Diablo Base Line and Meridian of Hanford, California 7.5-minute USGS quadrangle (Figure 1-2). The Project is currently utilized as a rural residence and orchard. The Project area is surrounded by agricultural uses to the north, west and east, and open fields and single-family residences to the south.

The proposed Project includes subdivision of the current property into 109 parcels, construction of 109 single-family residences, an on-site storm drain basin and associated neighborhood streets, landscaping, sidewalks, and utilities within the Project site.

1.2 REGULATORY SETTING

Cultural resources within the context of this report are defined as a historical or prehistorical archaeological site, or a historical structure, object, or building. Consistent with 36 CFR 60.3, the term “historical” in this report applies to archaeological remains and artifacts, and additionally to buildings, objects, or structures that are at least 50 years old. While exceptions to the 50-year criterion occur, they are relatively rare. The significance or importance of a cultural resource is dependent upon whether the resource qualifies for inclusion at the local or state in the California Register of Historical Places (CRHR). Cultural resources that are determined to be eligible for inclusion in the CRHR are called “historical resources” (CCR 15064.5[a]). Under this statue the

determination of eligibility is partially based on the consideration of the criteria of significance as defined in 14 CCR 15064.5(a)(3).

1.2.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

Pursuant to CEQA, a historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources may include, but are not limited to, "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically or archaeologically significant" (PRC §5020.1[j]). In addition, a resource included in a local register of historical resources or identified as significant in a local survey conducted in accordance with the state guidelines are also considered historic resources under California Public Resources Code (PRC) Section 5020.1.

According to CEQA guidelines §15064.5 (a)(3), criteria for listing on the California Register of Historical Resources includes the following:

> (A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
> (B) Is associated with the lives of persons important in our past.
> (C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
> (D) Has yielded, or may be likely to yield, information important in prehistory or history.

According to CEQA guidelines §21074 (a)(1)(2), criteria for tribal cultural resources includes the following:

> (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following: (A) included or determined to be eligible for inclusion in the California Register of Historical Resources. (B) included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

1.3 PROFESSIONAL QUALIFICATIONS

Archaeologist Consuelo Y. Sauls (M.A.), a Registered Professional Archaeologist (RPA 41591505), managed the assessment and compiled this report for the Project. Ms. Sauls also conducted the records search and performed the pedestrian field survey of the Project site. Ms. Sauls meets the Secretary of the Interior's Standards for Professional Qualifications in Archaeology. Qualifications for key personnel is provided in Appendix A.

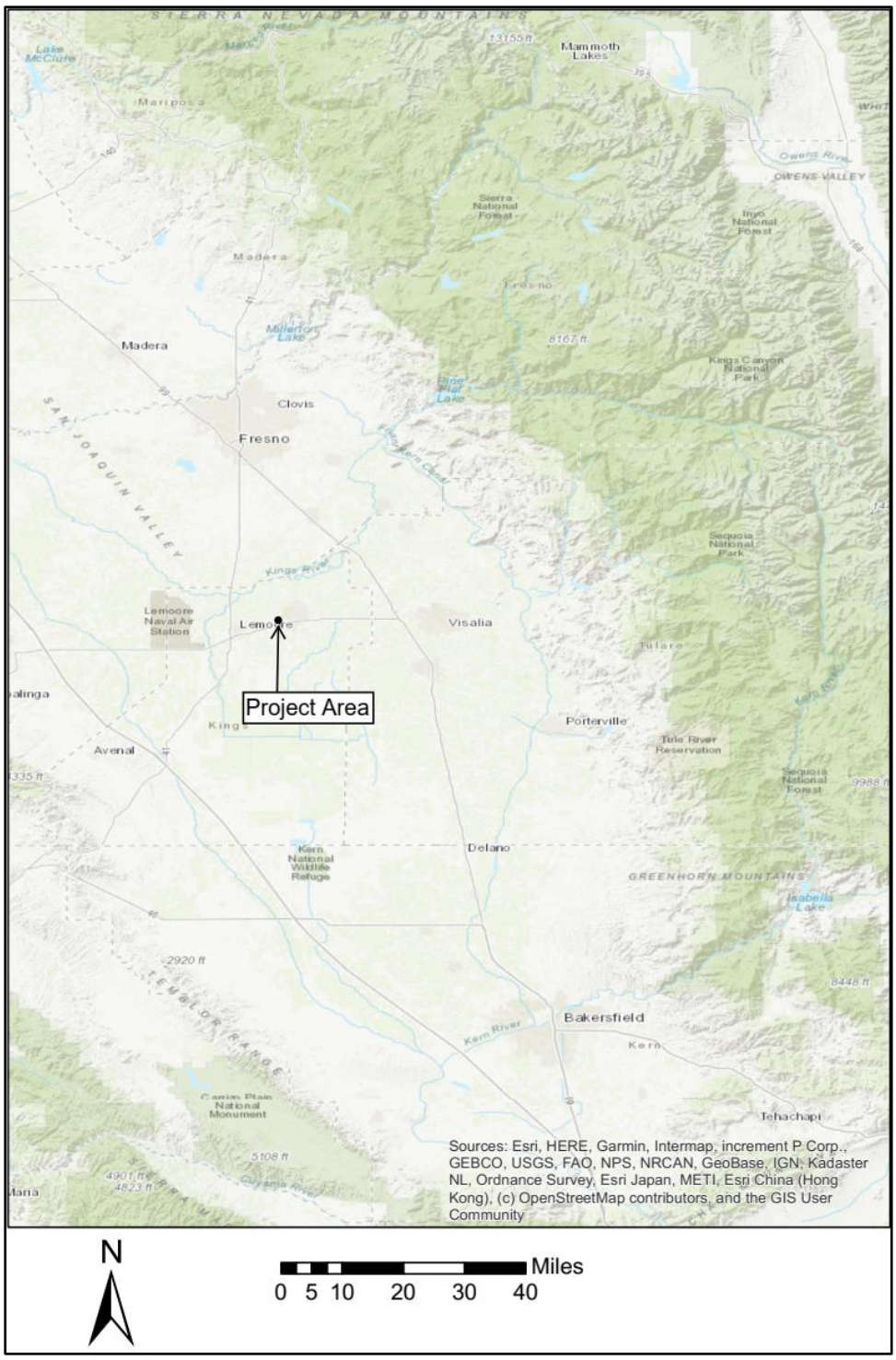


Figure 1-1 Project vicinity in Kings County, California.

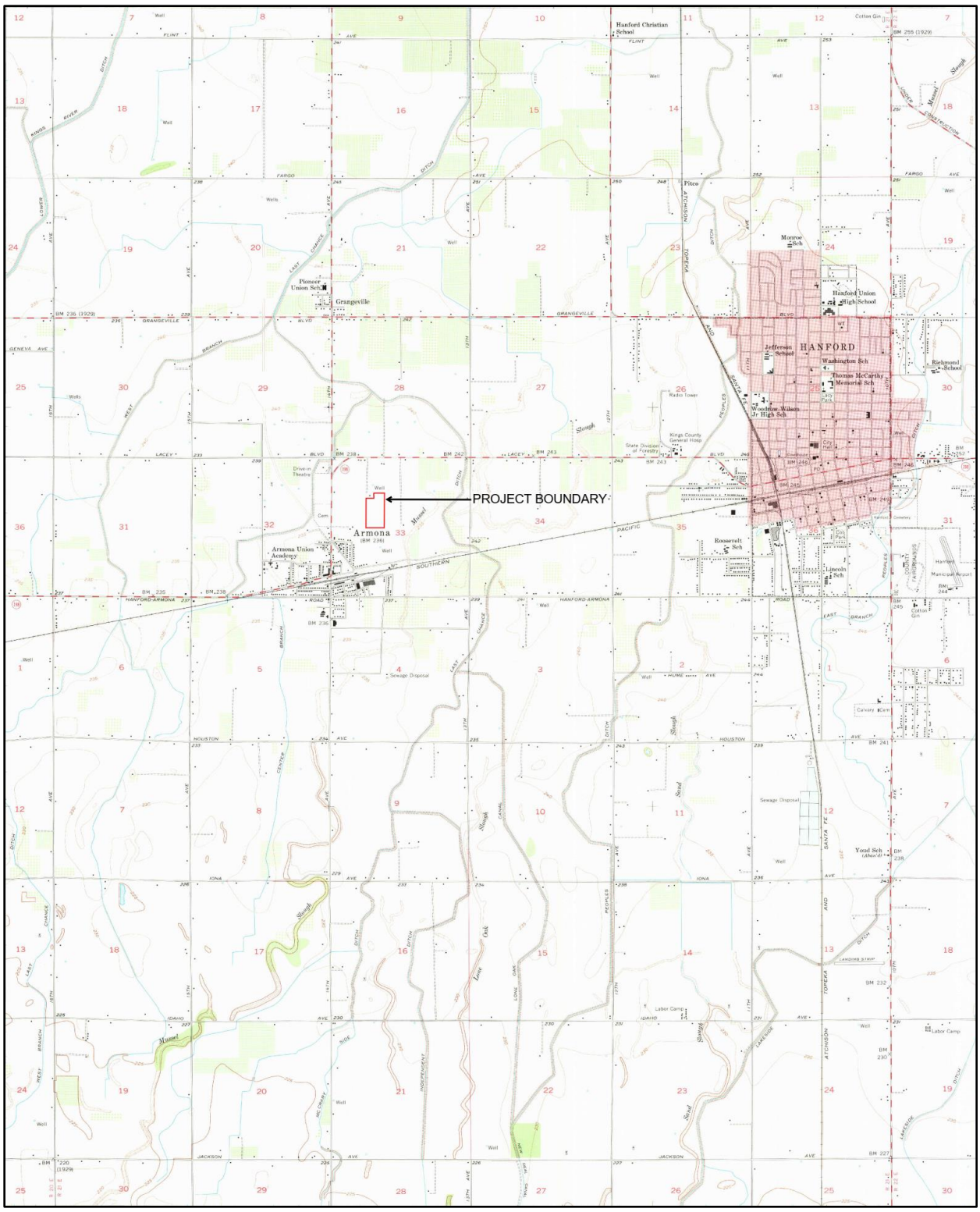


Figure 1-2 Project location on the USGS Hanford, CA 7.5-minute quadrangle.

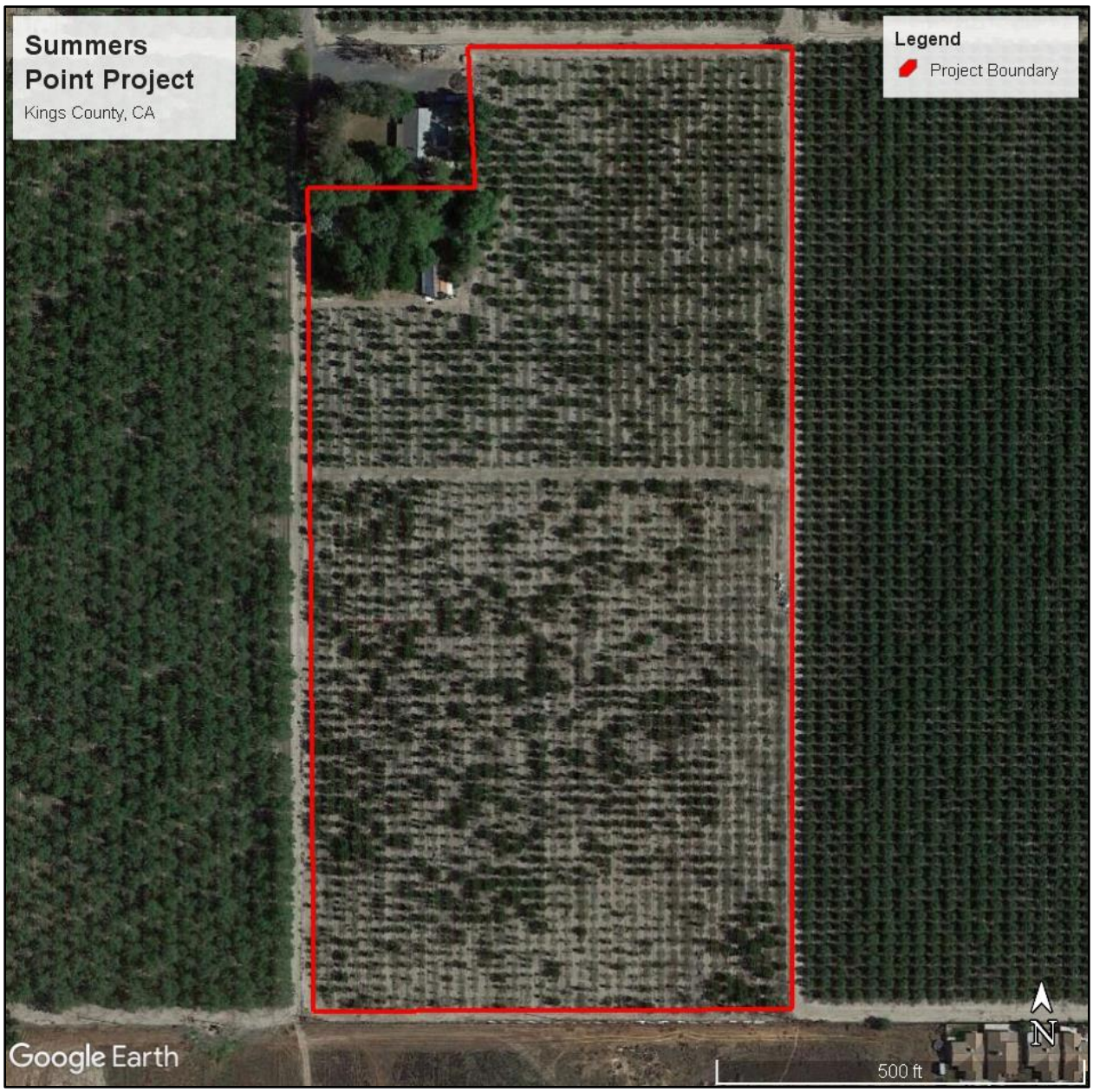


Figure 1-3 Aerial view of the Project boundary showing survey coverage.

1.4 REPORT ORGANIZATION

This report documents the results of a cultural resource assessment of the proposed Project area. In order to comply with California regulations for CEQA, the following specific tasks were completed: (1) requesting a records search from the Southern San Joaquin Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS), at California State University, Bakersfield; (2) requesting a Sacred Lands File Search and list of interested parties from the Native American Heritage Commission (NAHC); (3) conducting an archaeological pedestrian survey, (4) preparing this technical report.

This report follows the California Office of Historic Preservation standards in the 1990 Archaeological Resources Management Report Recommended Contents and Format. Chapter 1 explains the Project and its location, and identifies the key personnel involved in this report. Chapter 2 describes the Project setting, including the natural, prehistoric, historic, and ethnohistoric background for the Project area and surrounding area. Chapters 3 includes the methods used for archival studies, Native American Outreach, and pedestrian survey. Chapter 4 summarizes findings of the archival studies, Native American outreach, and pedestrian survey. Chapter 5 discusses the Project findings and offers management recommendations. Chapter 6 is a bibliography of references cited within this report. The report also contains the following appendices: Qualifications of key personnel (Appendix A), the CHRIS records search results (Appendix B), and Taylored Archaeology's nongovernmental Native American outreach (Appendix C).

2
PROJECT SETTING

2.1 NATURAL ENVIRONMENT

The Project site lies in the Central Valley of California, which is approximately 450 miles from north to south, and ranges in width east to west from 40 to sixty miles (Prothero 2017). The Central Valley is divided into two subunits, the Sacramento Valley in the north and the San Joaquin Valley in the south, which are each named after the primary rivers within each valley (Madden 2020). The Project is located approximately 225 feet above sea level on the open flat plains of the Southern San Joaquin Valley. Climate within the San Joaquin valley is classified as a 'hot Mediterranean climate', with hot and dry summers, and cool damp winters characterized by periods of dense fog known as 'tule fog' (Prothero 2017).

The San Joaquin Valley is a comprised of a structural trough created approximately 65 million years ago and is filled with nearly 6 miles of sediment (Bull 1964). The San Joaquin Valley ranges from Stockton and the San Joaquin-Sacramento River Delta in the north to Wheeler Ridge to the south, ranging nearly sixty miles wide at its widest (Zack 2017). It is split by late Pleistocene alluvial fans between the San Joaquin River hydrologic area in the north and the Tulare Lake Drainage Basin in the south (Rosenthal et al 2007). The Project site is located within the latter of the two hydrologic units. The Kaweah, Tule, Kern, and Kings rivers flowed into large inland lakes with no outflow except in high flood events, in which the lakes would flow from through the Fresno Slough into the San Joaquin River. The largest of these inland lakes was the Tulare Lake, which occupied a vast area of Tulare and Kings Counties and was the largest freshwater lake west of the Mississippi. These four tributary rivers accounted for more than 95 percent of water discharged into Tulare Lake, with the remaining five percent sourced from small drainages originating in the Coast Ranges to the west (Adams et al. 2015).

The Project is located in northern Kings County on the valley floor of the San Joaquin Valley, and located within 0.25 miles of the former Mussel Slough, a distributary of the Kings River that drained into Tulare Lake (Hammond 1885). Distributaries form when debris-laden river waters meet abrupt changes in channel and slope confinement, resulting in unstable channel networks that change with time (Wagner et al. 2013). Before the appearance of agriculture in the nineteenth century, the Project location would have been comprised of prairie grasslands with scatter oak tree savannas near the foothills, and along the various streams and drainages (Preston 1981). Riparian environments would also have been present along various waterways, including drainages and marshes. Native vegetation likely would have consisted of needle grasses and other perennial bunchgrasses before the introduction of non-native species in the 1800s.

The valley floor of the region was largely dominated by marshlands, lakes, and annual grasslands. Historically, these habitats provided a lush environment for large animals, including various migratory birds and other waterfowl, grizzly bear (*Ursus arctos californicus*), tule elk (*Cervus* sp.), pronghorn (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), black bear (*Ursus americanus*), and mountain lion (*Puma concolor*) (Preston 1981). Native trees and plants

observed in the Project vicinity include various blue, live, and white oaks (*Quercus* sp.), cottonwood (*Populus aegiros*), and willow (*Salix* sp.). The introduction of agriculture to region resulted in large animals being forced out of their habitat. Common land mammals now include valley coyote (*Canis latrans*), bobcat (*Lynx rufus*), gray fox, kit fox (*Vulpes macrotis*), and rabbits (Leporidae). Rivers and lakes throughout the valley provide habitat for freshwater fish, including rainbow trout (*Oncorhynchus mykiss*), Sacramento sucker (*Catostomidae* sp.), and Sacramento perch (*Archoplites interruptus*), (Preston 1981).

2.2 PREHISTORIC SETTING

Archaeologists develop models of prehistoric resource chronologies and description of lifestyles based on data collected at archaeological sites they investigate to better understand the past. Models of prehistoric life patterns are developed from both archaeological and ethnographic research. Archaeological studies in the San Joaquin Valley began in the early 1900s with several archaeological investigations (Rosenthal et al. 2007). The Southern San Joaquin Valley is of one of the least understood areas within California due to a lack of well-grounded chronologies for large segments of the valley (Rosenthal et al. 2007). This is largely due to the valley floor being filled with thick alluvial deposits, and from human activity largely disturbing much of the valley floor due to a century and a half of agricultural use (Dillon 2002; Siefken 1999). Mound sites may have occurred as frequently as one every two or three miles along major waterways but studying such mounded occupations sites is difficult as most surface sites have been destroyed (Schenck and Dawson 1929). Much of the early to middle Holocene archaeological sites may be buried as deep as 10 meters due to millennia of erosion and alluvial deposits from the western Sierras (Moratto 1984).

Mass agricultural development has heavily disturbed and changed the landscape of the Southern San Joaquin Valley, from the draining of marshes and the vanishing of the extensive Tulare Lake, to grading nearly the entire valley for agricultural operations (Garone 2011). These activities have impacted or scattered much of the shallow surface deposits and mounds throughout the valley (Rosenthal et al 2007). Some researchers have suggested that potentially as much as 90 percent of all Central California archaeological sites have been destroyed from these activities (Riddell 2002). A previous prehistoric archaeological sensitivity model for the San Joaquin Valley was conducted by Far Western Anthropological Research Group in 2010, which analyzed sensitivity based on various geographic factors such as water proximity, slope, soil type, and landform (Meyer et al. 2010). According to this model, the Project site is located within an area of moderate for the potential presence of buried prehistoric archaeological deposits.

The cultural traits and chronologies which are summarized below are largely based upon information discussed in multiple sources, including Bennyhoff and Fredrickson (1973, 1974), Garfinkel (2015), McGuire and Garfinkel (1980), Moratto (1984), and Rosenthal et al. (2007). The most recent comprehensive approach to compiling a chronology of the Southern San Joaquin Valley prehistory is by Garfinkel in 2015, which builds off Rosenthal's 2007 previous work. Both Garfinkel's and Rosenthal's chronologies are calculated in years B.C. In the interest of maintaining cohesiveness with modern anthropological research, the dates of these chronologies have been adapted into years before present (B.P.).

The Paleo-Indian Period (13,500-10,600 cal B.P.) was largely represented by ephemeral lake sites which were characterized by atlatl and spear projectile points. Around 14,000 years ago, California was largely a cooler and wetter place, but with the retreat of continental Pleistocene glaciers, California largely experienced a warming and drying period. Lakes filled with glacial meltwater were located in the valley floor and used by populations of now extinct large game animals. A few prehistoric sites were discovered near the southwestern shore of Tulare Lake (Garfinkel 2015). Foragers appear to have operated in small groups which migrated on a regular basis.

During the Lower Archaic Period (10,500-7450 cal B.P.), climate change created a largely different environment which led to the creation of larger alluvial fans and flood plains. Most of the archaeological records of the prior period wound up being buried by geological processes. During this time, cultural patterns appear to have emerged between the foothill and valley populations of the local people. The foothill sites were often categorized by dense flaked and ground stone assemblages, while the valley sites were instead characterized by a predominance of crescents and stemmed projectile points. Occupation within the area is represented mostly by isolated discoveries, and along the former shoreline of Tulare Lake finds are typically characterized by chipped stone crescents, stemmed points, and other distinctive flakes stone artifacts (Rosenthal et al. 2007). Variations in consumption patterns emerged as well, with the valley sites more marked by consumption of waterfowl, mussels, and freshwater fish, while the foothills sites saw an increase in nuts, seeds, and a more narrowly focused diet than the valley sites.

The Middle Archaic (7450-2500 cal B.P.) saw an increase in semi-permanent villages along river and creek settings, with more permanent sites located along lakes with a more stable supply of water and wildlife. Due to the warmer and drier weather of this period, many lakes within the valley dramatically reduced in size, while some vanished completely (Garone 2011). Cultural patterns during this time saw an increase in stone tools, while a growth in shell beads, ornaments, and obsidian evidence an extensive and ever-growing long-distance trade network. Little is known of cultural patterns in the valley during the Upper Archaic (2500-850 B.P.), but large village structures appeared to be more common around local rivers. An overall reduction of projectile point size suggests changing bow and arrow technologies. Finally, the Emergent Period (850 cal B.P. - Historic Era) was generally marked by an ever-increasing specialization in tools, and the bow and arrow generally replaced the dominance of the dart and atlatl. Cultural traditions ancestral to those recorded during ethnographic research in the early 1900s are identifiable.

2.3 ETHNOGRAPHY

The Project area is in the Southern Valley Yokuts ethnographic territory of the San Joaquin Valley and located between the Kings River and the north shore of Tulare Lake. The Yokuts were generally divided into three major groups, the Northern Valley Yokuts, the Southern Valley Yokuts, and the Foothill Yokuts. The Yokuts are a sub-group of the Penutian language that covers much of coastal and central California and Oregon (Callaghan 1958). The Yokuts language contained multiple dialects spoken throughout the region, though many of them were mutually understandable (Merriam 1904).

The Yokuts have been extensively researched and recorded by ethnographers, including Powers (1877), Kroeber (1925), Gifford and Schenck (1926, 1929), Gayton (1930, 1945), Driver (1937), Harrington (1957), Latta (1977), and Wallace (1978). Much of the research from these ethnographers focuses on the central Yokuts tribes due to the northernmost tribes being impacted by Euro-Americans during the California Gold Rush of the mid 1800s, and by the southernmost tribes often being removed and relocated by the Spanish to various Bay Area or coastal missions. The central Yokuts tribes, and especially the western Sierra Nevada foothill tribes, were the most intact at the time of ethnographic study.

The most detailed ethnographic information gathered regarding Native American group territories in Central California is located within maps prepared by Kroeber. According to Krober's ethnographic research, three tribes were located along the shores of Tulare Lake. From south to north, the tribes were the Wowol, Chunut, and Tachi (Krober 1925). The Tachi were arguably the largest of all Yokut groups, and their territory centered along the northern shores of Tulare Lake, from Fish Slough in the east to the Coastal Range in the west. Based upon Kroeber's map of Southern and Central Yokuts (1925: Plate 47), the Project area is within the Tachi Yokuts territory. The closest village for this area was *Waiu*, which was located on Mussel Slough approximately 6 miles southwest of the Project site (Kroeber 1925). Primary Yokuts villages were typically located along lakeshores and major stream courses, with scattered secondary or temporary camps and settlements located near gathering areas in the foothills. Yokuts were organized into groups originally designated as tribelets by Kroeber, with one or more linked villages and smaller settlements within a territory (Kroeber 1925).

Designation of these units as 'tribelets' is often viewed as pejorative by many Native Americans, and for the remainder of this report will be referred to as 'local tribes' instead. Each local tribe was a land-owning group that was organized around a central village, and shared common territory and ancestry. Most local tribe populations ranged from 150 to 500 people (Kroeber 1925). These local tribes were often led by a chief, who was often advised by a variety of assistants including the winatum, who served as a messenger and assistant chief (Gayton 1930). Early studies by Kroeber (1925), Gifford and Schenck (1926), and Gayton (1930) concluded that social and political authority within local tribes was derived from male lineage and patriarchy. However, more recent reexaminations (Dick-Bissonnette 1998) argue that this assumption of patriarchal organization was based on male bias by early 20th century researchers, and instead Yokuts sociopolitical authority was matriarchal in nature and centered around matrilineal use-rights and women's work groups.

Due to the abundance of natural resources within the greater Tulare Lake area, the Yokuts maintained some of the largest populations in North America west of the continental divide (Cook 1955a).

2.4 HISTORIC SETTING

2.4.1 California History

European contact in modern-day California first occurred in 1542 with the arrival of a Spanish expedition lead by Juan Rodríguez Cabrillo into San Diego Bay (Engstrand 1997). Expeditions along the California coast continued throughout the sixteenth century and primarily focused on finding favorable harbors for further expansion and trade across the Pacific. However, rocky shorelines, unfavorable currents, and wind conditions made traveling north from New Spain to the upper California coast a difficult and time-consuming journey (Eifler 2017). The topography of California, with high mountains, large deserts, and few natural harbors lead to European expansion into California only starting in the 1760s. As British and Russian expansion through fur trading encroached on California from the north, Spain established a system of presidios, pueblos, and missions along the California coast to defend its claim, starting with Mission San Diego de Alcalá in 1769 (Engstrand 1997).

2.4.2 Central California History

The San Joaquin Valley did not experience contact with Europeans until the late 1700s (Starr 2007). Life at the California missions was hard and brutal for Native Americans, with many dying of disease, poor conditions, and many fleeing to areas not under direct Spanish control (Jackson and Castillo 1995). The earliest exploration of the San Joaquin Valley by Europeans was likely by the Spaniards when in the fall of 1772 a group known as the Catalonian Volunteers entered into the valley through Tejon Pass in search of deserters from the Southern California Missions (Zack 2017). However, the group only made it as far north as Buena Vista Lake in modern day Kern County before turning around due to the extensive swamps. Additional excursions to the valley were for exploration such as those led by Lieutenant Bariel Moraga in 1806, but also to find sites for suitable mission sites and to track down Native Americans fleeing the coastal missions (Cook 1958).

Subsequent expeditions were also sent to pursue outlaws from the coast who would often flee to the valley for safety. One of the subsequent explorations was an expedition in 1814 to 1815 with Sargent Juan Ortega and Father Juan Cabot, who left the Mission San Miguel with a company of approximately 30 Spanish soldiers and explored the San Joaquin Valley (Smith 2004). This expedition passed through the Kaweah Delta and modern-day Visalia and made a recommendation to establish a mission near modern-day Visalia. However, with European contact also came European disease. Malaria and other new diseases were brought by Europeans, and in 1833 an epidemic of unknown origin traveled throughout the Central Valley. Some estimates place the Native American mortality of the epidemic as high as 75 percent (Cook 1955b). Combined with the rapid expansion of Americans into California in 1848 during the Gold Rush, Native American populations within the valley never fully recovered (Eifler 2017).

Initial settlement within the valley by Europeans in the 1830s was largely either by trappers like Jedediah Smith or horse thieves like Pegleg Smith (Clough and Secrest 1984). In fact, horse and other livestock theft was so rampant that ranching operations on the Rancho Laguna de Tache

by the Kings River and Rancho del San Joaquin Rancho along the San Joaquin River could not be properly established (Cook 1962). With the end of the Mexican American War and the beginning of the gold rush in 1848, the San Joaquin Valley became more populated with ranchers and prospectors. Most prospectors traveled by sea to San Francisco and used rivers ranging from the Sacramento River to the San Joaquin River to access the California interior (Eifler 2017). Most areas south of the San Joaquin River were less settled simply because those rivers did not connect to the San Francisco Bay area except in wet flood years. By 1850, California became a state, Tulare County was established in 1853, and Kings County was formed out of the western half of Tulare County in 1893.

2.4.3 Local History

The community of Armona dates from 1875, and was a train stop of the east to west branch of the Southern Pacific Railway that ran from Goshen in the east through Hanford and on to Lemoore in the west (Kings County 2009). The community is thought to have redirected its name from a poorly spelled grave marker of "Ar Mona". While the town was first laid out by John Yoakum for the Pacific Improvement Company in 1875, the railroad line was constructed in 1877. The community of Armona served as a major railroad shipping point for local farming and fruit, and even had its own China Town in the early 1900s. With the growth of local cities such as Lemoore and Hanford however, the community was outpaced in growth and prominence.

The arrival of the rail line brought an increased in agriculture and farms that clashed with existing ranching operations in the local area. One such conflict was the Mussel Slough Tragedy of 1880, in which seven locals died in fight over land use between ranchers and the Southern Pacific Railroad (SHPO 2022). The site is currently a California Historical Landmark located approximately 4.3 miles north of the Project site. Escalating conflicts and livestock disputes between ranchers and farmers lead to the "No Fence Law" in 1874, which forced ranchers to pay for crop and property damage caused by their cattle (Ludeke 1980). With the passage of this law and the expansion of irrigation systems, predominant land use in the 1870s switched from grazing to farming (Mitchell 1974). This led to the beginning of the vast change of the San Joaquin Valley from native vegetation and grasslands to irrigated crops (Varner and Stuart 1975). One such irrigation system was the Lower Kings River Ditch, later known as the Lemoore Canal, which was financed and constructed in 1872 by M.D. Bush, V.F. Geiseler, R.B. Huey, and other individuals (Menefee and Dodge 1913).

Because water rights within California originally arose from the first come first serve policy of the Gold Rush era, diverting surface water to farms became big business, but a convoluted mess of customs, traditions, and conflicting claims (Zack 2017). To solve this mess, the Wright Act of 1887 was passed that allowed residents to petition a local county board of supervisors to create irrigation districts that had the power to issues bonds, and tax land within the district boundaries to pay for the creation and maintenance of canals and ditches for irrigation purposes.

At the same time, an important step forward was made in ditch-digging technology that allowed irrigation systems to be built at a faster pace. From the 1840s to 1890s, farm ditches and canals were largely constructed through the use of buckboards and slip-scoops, which involved the use

of a board pulled by horses in an uprights position in order to level ground (Bulls 2010). Between 1883 and 1885, Scottish immigrant James Porteous had moved to Fresno and made significant improvements to the buckboard style scraper that allowed the new scraper to be pulled by two horses and scrape and move soil while dumping it at a controlled depth. This new design was patented and sold as the "Fresno Scraper", which lead to an explosion of ditch digging efforts within the San Joaquin Valley (Zack 2017). Local waterways such as Mussel Slough were diverted and filled in to make room for ever expanding agriculture.

The cumulative effect of this explosion of water diversion from the Kings, Kern, Kaweah, and Tule Rivers, which supplied 95 percent of the water, had a devastating effect on Tulare Lake (Adams et al. 2015). Between 1876 and 1885, the northern shoreline of Tulare Lake near the Lower Kings River had receded southwards by five miles (Baker 1876; Hammond 1885). By 1898, the lake had completely dried up (Figure 2-1).

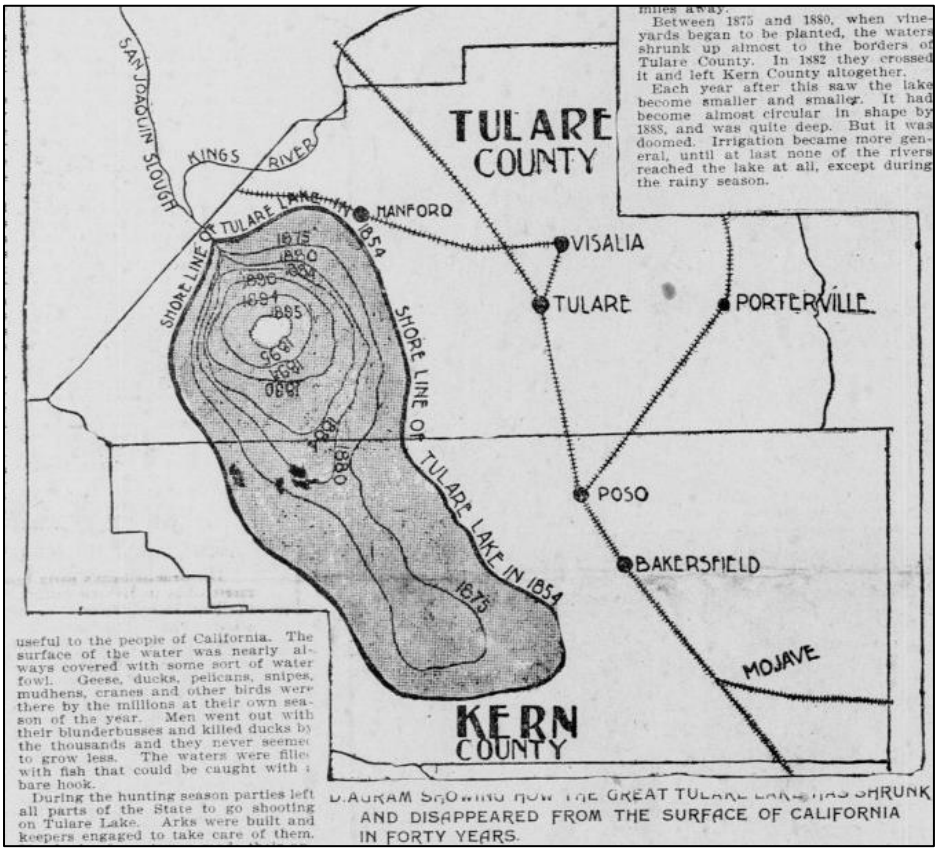


Figure 2-1 1898 map of Tulare Lake showing receding shoreline from 1854 to 1898 (Lee 1898).

The former lakebed was turned into agricultural lands, with water provided by the new canals and ditches (City of Lemoore 2008). The destruction of the lake was the final blow the Native American populations of the region. In 1934, the Santa Rosa Rancheria was established on 40 acres of desolate farmland approximately 6.40 miles southwest of the Project site and consisted of 40 members (Tachi Yokut Tribe 2021).

3
METHODS

3.1 RECORDS SEARCH

On January 21, 2022, Taylored Archaeology requested a records search for the Project area and within a 0.5-mile radius of the Project boundary from the SSJVIC of the CHRIS at California State University in Bakersfield, California. The records search included a review of all recorded archaeological and historical resources in the Project area and within a 0.5-mile radius of the Project. Sources consulted included archaeological site and survey base maps, historical USGS topographic maps, reports of previous investigations, cultural resource records (DPR forms) as well as listings of the Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources (Appendix B).

3.2 ARCHIVAL RESEARCH

Taylored Archeology conducted archival research which includes literature review and background research of historical maps, historical aerial photographs, historical US Geological topographic maps, Google Earth aerial photographs, Google Street View photos, books, articles and other records regarding the prehistory and history of the Project area. The results of this research are presented in Chapter 4.

3.3 NATIVE AMERICAN OUTREACH

On January 21, 2022, Taylored Archaeology sent a request to the NAHC for a Sacred Lands File (SLF) search, to determine if any known Native American cultural properties (e.g., places of religious, sacred activity or traditional use or gathering areas) are present within the Project area.

3.4 PEDESTRIAN SURVEY

On February 5, 2022, archaeologist Consuelo Sauls performed an intensive Phase I pedestrian survey of the 20.08-acre Project site to identify the presence of archaeological and historical resources on the ground surface. The whole area in the Project boundary was accessible and surveyed and the survey was completed by walking parallel transects spaced 15 meters apart. Plan maps and visible landmarks were used for navigation to locate and survey the Project area. Ms. Sauls photographed the survey area using an iPhone 11 Pro digital camera and recorded location data using the Gaia GPS application.

4
FINDINGS

4.1 RECORDS SEARCH

The SSJVIC provided the results of the records search in a letter dated January 31, 2022 (Records Search File No. 22-031; Appendix B). According to the SSJVIC records search, six prior cultural resource investigations were conducted within the Project area (Table 4-1). However, these investigations resulted in no cultural resources being recorded in the Project area. Further review of these reports revealed that all six reports were not within the Project area: KI-0093, KI-00100, KI-00238, KI-00268, KI-00269, KI-00327. All six reports were either desktop assessments with no pedestrian surveys or were surveys outside of the Project boundary.

Table 4-1
Previous Cultural Resource Investigation Reports within the Project Area

Report Number	Author(s)	Date	Report Title	Study
KI-00093	Ryan, Christopher	2000	Supplemental Archaeological Survey for the Laguna Irrigation District Transmission Line Improvement Project, Fresno and Kings Counties, California	Supplemental Archaeological Survey of Utility Lines
KI-00100	Brown, Keith R. and Pastron Allen G.	2000	Historical and Cultural Resource Assessment Update Existing Telecommunications Facility Site No. CV-503-01 Glendale Avenue Kings County, California	Historical and Cultural Resource Desktop Review on Telecommunications Facility
KI-00238	Meyer, Jack, Young, Craig D. and Rosenthal, Jeffrey S.	2010	Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9	Cultural Resources Inventory of Rural Road Segments
KI-00268	Greenwald, Alexandra	2011	Archaeological Survey Technical Report for the California High Speed Train-Fresno to Bakersfield Section	Archaeological Pedestrian Survey and Extended Phase I Survey High-Speed Rail
KI-00269	Schiffman, Robert A.	Unknown, Evidence suggests between 1968 and 1987.	Archaeological Evaluation of Areas Selected for Possible Nuclear Power Plants	Archaeological Desktop Review of Nuclear Power Plant Sites

Report Number	Author(s)	Date	Report Title	Study
KI-00327	Whitley, David S.	2019	Phase I Survey/Class III Inventory, Armona CSD Water Meter Project, Armona, Kings County, California	Phase I Pedestrian Survey of Water Meters

Seven previous cultural resources investigations were conducted within a 0.5-mile radius of the Project area (Table 4-2).

Table 4-2
Previous Cultural Resource Investigation Reports 0.5-mile radius of the Project Area

Report Number	Author(s)	Date	Report Title	Study
KI-00028	Bente, Vance,Hatoff, Brian, Voss, Barb, Waechter and Wee, Stephen	1995	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project	Pedestrian Survey of Gas Pipeline
KI-00109	Love, Bruce and Tang, Bai "Tom"	2002	Historic Property Survey Report Cross Valley Rail Corridor Project Between the Cities of Visalia and Huron Tulare, Kings, and Fresno Counties, California	Historic Structures and Buildings Survey and Evaluation
KI-00110	Love, Bruce and Tang, Bai "Tom"	2002	Archaeological Survey Report Cross Valley Rail Corridor Project Between the Cities of Visalia and Huron Tulare, Kings, and Fresno Counties, California	Archaeological Survey for Railway Project
KI-00111	Love, Bruce and Tang, Bai "Tom"	2002	Historic Study Report/ Historical Resources Evaluation Report Cross Valley Rail Corridor Project Between the Cities of Visalia and Huron Tulare, Kings, and Fresno Counties, California	Historic Structures and Buildings Survey and Evaluation
KI-00190	DeCarlo, Matthew M.	2009	A Cultural Resources Assessment for Armona Community Services District Well No.2 Replacement Project Armona, Kings County, California	Phase I Pedestrian Survey for Well Replacement Project

Report Number	Author(s)	Date	Report Title	Study
KI-00272	Lloyd, Jay B. and Asselin, Katie	2014	Cultural Resources Inventory for the Armona Community Services District Arsenic Compliance Project, California State Water Resources Control Board, Armona, Kings County, California	Pedestrian Survey for Water Treatment Plant Project
KI-00310	Jones, Jessica	2017	Cultural Resources Constraints Report Kingsburg-Lemoore Reconductor, Kings County, California	PG&E Cultural Resources Constraints Report

The SSJVIC records search revealed no evidence of recorded cultural resources in the Project area. Five cultural resources were previously recorded within a 0.5-mile radius of the Project area (Table 4-3). The cultural resources are all historic-era sites or structures.

Table 4-3
Previous Recorded Cultural Resources within 0.5-miles radius of the Project Area

Resource Number	Age Association	Resource Type	Distance From Project Site
CA-KIN-000177H P-16-000122	Historic	Structure: Southern Pacific Railroad; San Joaquin Valley Railroad	0.64 miles to the southeast
CA-KIN-77H P-16-000123	Historic	Structure: Wells/ Cisterns; water tank site	0.3 miles to the south
CA-KIN-78H P-16-000124	Historic	Site: Former Southern Pacific station of Armona; Foundations/structure pads	0.35 miles to the southwest
CA-KIN-191H P-16-000128	Historic	Structure: Canal; Last Chance Ditch	0.38 miles to the northwest
CA-KIN-000478 P-16-000478	Historic	Structure: Water Tower	0.54 miles to the southwest

No prior archaeological and historical pedestrian surveys were reported to be conducted on the Project site. Also, no prehistoric or historic resources were recorded on the Project site.

4.2 ARCHIVAL RESEARCH

Historical map coverage of the Project site dates to 1876, and historical arial photograph coverage dates to 1984. An 1876 map of Tulare County, which then covered modern-day Kings County, shows the project site but does not contain any ownership information for the area (Baker 1876). An 1885 irrigation map of the region shows the Project site as owned by a Doyle in

the northwestern quarter of Township 18 South, Range 21 East, Section 33 (Hammond 1885). The map additionally shows the Project area irrigated by an unnamed ditch branching from the East Branch of the Last Chance Canal. The map also shows Mussel Slough in the northeastern quarter of Section 33, approximately 0.25 miles east of the Project area. An 1892 detailed map of Township 18 South, Range 21 East shows the Project area as an orchard owned by a "Mrs. E. F. Downing" (Thompson 1892). No structures are shown on the Project site. A search of USGS topographic maps showed the Project site as mostly agricultural land between 1927 to 1976. No structures are shown on the Project site in any USGS topo maps (USGS 1926, 1954, 1976).

Historical aerial photographs of the Project site were only available from 1984 to present day (Google Earth 2022). Aerial photographs from 1984 showed farm structures on the northwest corner of the Project site, but the photographs were not detailed enough to provide much information. Detailed aerial photographs were available from 1994 and onward. Aerial photographs of the project site in 1994 showed the site as row crops, and photographs from 2005 to present day show the Project site as an orchard in its current configuration.

4.3 NATIVE AMERICAN OUTREACH

No response was received from the NAHC as of the date of this report. Once the result from the SLF search is received, the result will be provided to the lead agency in a final updated report.

4.4 PEDESTRIAN SURVEY RESULTS

Taylored Archaeology conducted an intensive pedestrian survey of the Project site, covering a total of 20.08 acres. The ground surface throughout the Project site consisted primarily of orchard (Figure 4-1). A modern irrigation pump was observed in the northeastern potion of the Project site (Figure 4-2). Rodent burrows and dirt piles were closely examined for soil type and lithic scatters. Surface sediments were observed to be medium brown fine sandy loam with small angular pebbles and gravel. The ground visibility ranged from 79 to 100 percent in most of the orchard area, and poor (5 percent) in the northwestern portion due to landscaped domestic grasses. A few structures were within the Project boundary, including an outbuilding/storage shed, an above ground storage tank at the northwest corner of the Project site, and two chicken coops (Figure 4-3). An artificial fishing pond was located within the northwestern corner near the above ground storage tank (Figure 4-4). Moderate levels of modern trash were observed consisting of, but not limited to, a large shipping container, old chairs, tables, barrels, umbrella, rusted animal trap cage, miscellaneous harvesting equipment and other miscellaneous trash. A barbed wire fence surrounds the surveyed area. Portions of the terrain have been previously graded, leveled or otherwise impacted by agricultural use.

No cultural resources were discovered prehistoric materials discovered or recorded during the field survey. The storage shed in the northwestern portion of the Project boundary is of undetermined age and may need to be assessed by an architectural historian.

Figure 4-1 Central portion of project site, facing north. Orchard in foreground.

Figure 4-2 Northeastern portion of Project site, facing south. Irrigation pump in background.

Figure 4-3 Northwestern portion of project site, facing south. Outbuilding in foreground.

Figure 4-4 Northwestern portion of project site, facing east. Fishing pond in foreground.

5
SUMMARY AND RECOMMENDATIONS

Taylored Archaeology has completed an interim Phase I cultural resource assessment for the Summers Pointe Tract 936 Tentative Subdivision Map Project in Kings County, California. The purpose of this assessment is to identify potential cultural resources on the ground surface in the 20.08-acre Project boundary. The Project proponent proposes to construct a single-family residential development of approximately 109 units on the 20.08-acre Project site with an on-site storm basin and associated neighborhood streets, landscaping, sidewalks, and utilities.

The SSJVIC records search identified six prior cultural resource investigations conducted within the Project area and seven prior cultural resource investigations within a 0.5-mile radius. The records search also indicated that it did not identify any cultural resources within the Project area; however, there are five previously recorded cultural resources within a 0.5-mile radius surrounding the Project area. All five resources are historic-era, and the proposed Project does not appear to have the potential to impact these recorded cultural resources.

A request of the NAHC's Sacred Lands File was submitted on January 21, 2022. The results are still pending and will be forwarded to the lead agency in a final report once they are received.

The intensive pedestrian survey of the Project site did not identify any prehistoric resources. One potential outbuilding of undetermined age was observed within the northwestern portion of the Project site. The building may need to be assessed by an architectural historian to determine the age and historic significance, if any.

Due to the Project site's close proximity to the former Mussel Slough, Taylored Archaeology recommends an archaeological monitor be present during Project ground disturbing activities.

In the event that previously unidentified archaeological remains are encountered during development or ground-moving activities in the Project area, all work should be halted until a qualified archaeologist can identify the discovery and assess its significance. In the event of accidental discovery of unidentified archaeological remains during development or ground-moving activities in the Project area, all work shall be halted in the immediate vicinity (within a 100-foot radius) until a qualified archaeologist can identify the discovery and assess its significance.

If human remains are uncovered during construction, the Kings County Coroner is to be notified to investigate the remains and arrange proper treatment and disposition. If the remains are identified on the basis of archaeological context, age, cultural associations, or biological traits to be those of a Native American, California Health and Safety Code 7050.5 and PRC 5097.98 require that the coroner notify the Native American Heritage Commission (NAHC) within 24 hours of discovery. The NAHC will be responsible for designating the Most Likely Descendent who will make recommendations regarding the treatment and disposition of the remains.

6
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APPENDIX A

Personnel Qualifications

Consuelo Sauls, M.A., RPA 41591505
Archaeologist
csaulsarchaeo@gmail.com
559.797.1572

Areas of Expertise

- Prehistoric archaeology
- Rock art recordation and analysis
- Laboratory management

Years of Experience

- 12

Education

- M.A., Archaeology, University of Durham, 2014
- B.A., Anthropology, California State University, Fresno, 2009

Registrations/Certifications

- Registered Professional Archaeologist 41591505

Professional Affiliations

- California Rock Art Foundation
- Coalition for Diversity in California Archaeology
- Society for American Archaeology
- Society for California Archaeology
- Society of Black Archaeologists

Professional Experience

2019 – 2022	Principal Investigator, Taylored Archaeology, Fresno, California
2018 – 2019	Staff Archaeologist, Applied EarthWorks, Inc., Fresno, California
2016 – 2018	Principal Investigator, Soar Environmental Consulting, Inc., Fresno, California
2015	Archivist/Database Technician, Development and Conservation Management, Inc., Laguna Beach, California
2013	Laboratory Research Assistant, Durham University Archaeology Department and Archaeology Museum, Durham, England, UK
2011 – 2012	Laboratory Technician (volunteer), University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, Pennsylvania
2008 – 2009	Laboratory Technician (intern), California State University, Fresno
2008	Field School, California State University, Fresno

Technical Qualifications

Ms. Sauls meets the Secretary of the Interior's Professional Qualification Standards as an archaeologist. She has conducted pedestrian surveys, supervised Extended Phase I survey, authored technical reports, and completed the Section 106 process with the State Historic Preservation Officer and Tribal Historic Preservation Officer. Her experience includes data recovery excavation at Western Mono sites and processing recovered artifacts in the laboratory as well as conducting archival research about prehistory and ethnography of Central California. Ms. Sauls has authored and contributed to technical and letter reports in compliance with of the National Historical Preservation Act (NHPA) Section 106 and the California Environmental Quality Act (CEQA). She also has supported NHPA tribal consultation and responded to Assembly Bill 52 tribal comments. Ms. Sauls also has an extensive background supervising laboratory processing, cataloging, and conservation of prehistoric and historical archaeological collections. In addition, she worked with the Rock Art Heritage Group in the management, preservation, and presentation of rock art in museums throughout England, including a thorough analysis of the British Museum's rock art collections. At Durham University Archaeology Museum, Ms. Sauls processed the excavated skeletal remains of 30 individuals from the seventeenth century

APPENDIX B

Records Search Results

Attachment H

Energy Calculations

Mobile Energy Use (Operations)

Total Annual VMT from Project (CalEEMod)	**2,764,433**

Fleet Mix & Fuel Calculations

Vehicle Class	Proportion of Fleet Mix[1]	Annual VMT by Vehicle Class	Proportion of vehicle class using gas or diesel (EMFAC2021)[2]		Annual VMT by Vehicle Class and Fuel Type		Fuel Efficiency (MPG) by Vehicle Class and Fuel Type (EMFAC2021)		Annual Fuel Use from Project (gallons)		MBTU/Year[3]
			Gas	Diesel	Gas	Diesel	Gas	Diesel	Gas	Diesel	
LDA	52.16%	1441928.3	100%	0%	1439283.99	2644.27	28.92	42.70	49761.3	61.9	5785.4
LDT1	21.00%	580530.9	100%	0%	580316.28	214.65	23.79	24.66	24398.2	8.7	2833.6
LDT2	17.00%	469953.6	100%	0%	468437.35	1516.26	23.27	32.65	20134.6	46.4	2343.9
MDV	6.00%	165866.0	98%	2%	163242.15	2623.83	18.87	23.72	8652.0	110.6	1019.8
LHD1	0.08%	2211.5	50%	50%	1103.51	1108.03	9.67	15.77	114.1	70.3	23.0
LHD2	0.09%	2488.0	27%	73%	673.48	1814.51	8.58	13.15	78.5	138.0	28.3
MHD	0.76%	21009.7	18%	82%	3750.49	17259.20	4.80	8.78	781.4	1965.5	363.9
HHD	2.00%	55288.7	0%	100%	12.15	55276.51	3.37	6.22	3.6	8891.7	1236.4
OBUS	0.00%	0.0	63%	37%	0.00	0.00	4.79	6.96	0.0	0.0	0.0
UBUS	0.43%	11887.1	64%	36%	7662.61	4224.46	8.41	12.12	911.2	348.4	154.2
MCY	0.25%	6911.1	100%	0%	6911.08	0.00	40.47	NA	170.8	0.0	19.8
SBUS	0.01%	276.4	38%	62%	104.94	171.50	9.83	8.13	10.7	21.1	4.2
MH	0.22%	6081.8	65%	35%	3971.76	2110.00	4.41	9.39	899.9	224.7	135.7
Total	**100.00%**	**2764433.0**			**2675469.79**	**88963.21**	**14.55**		**105916**	**11887**	**13948.1**

Fleet Characteristics 23.5

Source: EMFAC 2021 (v1.0.1) Emissions Inventory
Region Type: County
Region: Kings
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for VMT, trips/year for Trips, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

GASOLINE

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT (Annual)	Trips (Annual)	Fuel Consumption (1000 gal/year)	Annual Fuel Consumption (gallons)	MPG
Kings County	2025	HHDT	Aggregated	Aggregated	GAS	2	164	36	0.0486	49	3.37
Kings County	2025	LDA	Aggregated	Aggregated	GAS	62800	2580000	292000	89.2	89200	28.92
Kings County	2025	LDT1	Aggregated	Aggregated	GAS	5590	186000	24100	7.82	7820	23.79
Kings County	2025	LDT2	Aggregated	Aggregated	GAS	29000	1140000	135000	49	49000	23.27
Kings County	2025	LHDT1	Aggregated	Aggregated	GAS	2670	97700	39800	10.1	10100	9.67
Kings County	2025	LHDT2	Aggregated	Aggregated	GAS	336	12100	5010	1.41	1410	8.58
Kings County	2025	MCY	Aggregated	Aggregated	GAS	3370	19100	6750	0.472	472	40.47
Kings County	2025	MDV	Aggregated	Aggregated	GAS	27500	983000	125000	52.1	52100	18.87
Kings County	2025	MH	Aggregated	Aggregated	GAS	356	3200	36	0.725	725	4.41
Kings County	2025	MHDT	Aggregated	Aggregated	GAS	176	10800	3520	2.25	2250	4.80
Kings County	2025	OBUS	Aggregated	Aggregated	GAS	73	3870	1460	0.808	808	4.79
Kings County	2025	SBUS	Aggregated	Aggregated	GAS	28	1750	110	0.178	178	9.83
Kings County	2025	UBUS	Aggregated	Aggregated	GAS	12	497	47	0.0591	59	8.41

DIESEL

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption (1000 gal/year)	Annual Fuel Consumption (gallons)	MPG
Kings County	2025	HHDT	Aggregated	Aggregated	DSL	4890	746000	88700	120	120000	6.22
Kings County	2025	LDA	Aggregated	Aggregated	DSL	159	4740	658	0.111	111	42.70
Kings County	2025	LDT1	Aggregated	Aggregated	DSL	4	69	12	0.00279	3	24.66
Kings County	2025	LDT2	Aggregated	Aggregated	DSL	88	3690	422	0.113	113	32.65
Kings County	2025	LHDT1	Aggregated	Aggregated	DSL	2760	98100	34700	6.22	6220	15.77
Kings County	2025	LHDT2	Aggregated	Aggregated	DSL	871	32600	11000	2.48	2480	13.15
Kings County	2025	MDV	Aggregated	Aggregated	DSL	424	15800	1950	0.666	666	23.72
Kings County	2025	MH	Aggregated	Aggregated	DSL	196	1700	20	0.181	181	9.39
Kings County	2025	MHDT	Aggregated	Aggregated	DSL	1060	49700	12400	5.66	5660	8.78
Kings County	2025	OBUS	Aggregated	Aggregated	DSL	32	2240	390	0.322	322	6.96
Kings County	2025	SBUS	Aggregated	Aggregated	DSL	135	2860	1950	0.352	352	8.13
Kings County	2025	UBUS	Aggregated	Aggregated	DSL	3	274	14	0.0226	23	12.12

Notes

1. Used project-specific vehicle fleet mix for residential
2. Proportion of diesel vs. gasoline vehicles calculated based on total annual VMT for each vehicle class
3. MBTU Calculated for comparison purposes. Assumed 1 gallon of gasoline = 0.116090 MBTU and 1 gallong of diesel = 0.139 MBTU

Construction Equipment Energy Use

Phase Name	Off Road Equipment Type	Off Road Equipment Unit Amount[1]	Usage Hours Per Day[1]	Horse Power (lbs/sec)[1]	Load Factor[1]	Total Operational Hours	BSFC[2]	Fuel Used (gallons)[3]	MBTU[4]	
Demolition	Rubber Tired Dozers	0	8	247	0.4	0	0.367	0.00	0	
Demolition	Concrete/Industrial Saws	0	8	9	0.73	0	0.408	0.00	0	
Demolition	Tractors/Loaders/Backhoes	0	8	97	0.37	0	0.408	0.00	0	
Site Preparation	Rubber Tired Dozers	3	8	247	0.4	240	0.367	1224.12	170.1534	
Site Preparation	Graders	0	8	187	0.41	0	0.367	0.00	0	
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37	320	0.408	659.14	91.61992	1883.26
Grading	Excavators	2	8	158	0.38	560	0.367	1735.75	241.2687	
Grading	Graders	1	8	187	0.41	280	0.367	1108.26	154.0479	10518.39
Grading	Rubber Tired Dozers	1	8	247	0.4	280	0.367	1428.15	198.5123	
Grading	Scrapers	2	8	367	0.48	560	0.367	5092.76	707.8931	
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	560	0.408	1153.49	160.3349	
Building Construction	Cranes	1	7	231	0.29	2590	0.367	8957.10	1245.037	48109.65
Building Construction	Forklifts	3	8	89	0.2	8880	0.408	9071.62	1260.955	
Building Construction	Generator Sets	1	8	84	0.74	2960	0.408	10559.77	1467.808	
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	7770	0.408	16004.65	2224.646	
Building Construction	Welders	1	8	46	0.45	2960	0.408	3516.52	488.797	
Paving	Pavers	2	8	130	0.42	320	0.367	901.99	125.3762	2245.32
Paving	Paving Equipment	2	8	132	0.36	320	0.367	785.03	109.1186	
Paving	Rollers	2	8	80	0.38	320	0.408	558.31	77.60506	
Paving	Cement and Mortar Mixers	0	8	9	0.56	0	0.408	0.00	0	
Paving	Tractors/Loaders/Backhoes	0	8	97	0.37	0	0.408	0.00	0	
Architectural Coating	Air Compressors	1	6	78	0.48	120	0.408	257.85	35.84128	
Total								63014.48	8759.01	

Construction Phases

PhaseNumber	Phase Name	Phase Type	Phase Start Date	Phase End Date	Num Days Week	Total Number of Days
1	**Demolition**	**Demolition**	N/A	N/A	0	0
2	Site Preparation	Site Preparation	1/28/2023	2/10/2023	5	10
3	Grading	Grading	2/11/2023	3/31/2023	5	35
4	Building Construction	Building Construction	4/1/2023	8/30/2024	5	370
5	Paving	Paving	8/31/2024	9/27/2024	5	20
6	Architectural Coating	Architectural Coating	9/28/2024	10/25/2024	5	20

Notes

1. CalEEMod Default Values Used
2. BSFC - Brake Specific Fuel Consumption (pounds per horsepower-hour) – If less than 100 Horsepower = 0.408, if greater than 100 Horsepower = 0.367
3. Fuel Used = Load Factor x Horsepower x Total Operational Hours x BSFC / Unit Conversion
4. MBTU calculated for comparison purposes. Assumed 1 gallon of diesel = 0.139 MBTU

Mobile Energy Use (Construction)

Worker Trips

	Daily Worker Trips[1]	Worker Trip Length[1]	VMT/Day	MPG Factor (EMFAC2017)	Gallons of Gas/Day	# of Days	Total Gallons of Gas	MBTU	Total Gallons in Construction
Demolition	0	0	0	29.23	0.0	0	0.0	0	0
Site Preparation	18	10.8	194.4	29.23	6.7	10	66.5	7.720799	1950
Grading	20	10.8	216	29.23	7.4	35	258.6	30.02533	10777
Building Construction	39	10.8	421.2	29.23	14.4	370	5331.6	618.9507	53441
Paving	15	10.8	162	29.23	5.5	20	110.8	12.868	2356
Architectural Coating	8	10.8	86.4	29.23	3.0	20	59.1	6.862933	317
Total	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**455**	**5826.8**	**676.4278**	**68841**

Vendor Trips

	Daily Vendor Trips	Vendor Trip Length	VMT/Day	MPG Factor	Gallons of Diesel/Day	# of Days	Total Gallons of Diesel	MBTU
Building Construction	12	7.3	87.6	8.43	10.4	370	3844.839858	534.4327

Hauling Trips

	Daily Hauling Trips	Hauling Trip Length	VMT/Day	MPG Factor	Gallons of Gas/Day	# of Days	Total Gallons of Gas	MBTU
Demolition	0	0	0	8.43	0.0	0	0	0

Fleet Characteristics

	Vehicle Class	Fleet Mix	2024 MPG Factor (EMFAC2017)	Average MPG Factor
Assumed Vehicle Fleet for Workers	LDA	33%	33.24	
	LDT1	33%	28.07	
	LDT2	33%	26.38	29.23
Assumed Vehicle Fleet for Vendor Trips	MHD	50%	9.74	
	HHD	50%	7.12	8.43

Notes

1. CalEEMod Default values used
2. MBTU calculated for comparison purposes. Assumed 1 gallon of gasoline = 0.11609 MBTU

Appendix I

Response to CDFW Comments

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

May 11, 2023

Victor Hernandez
Kings Community Development Agency
1400 W. Lacey Blvd., Building #6
Hanford California, 93230

Subject: Tentative Tract No. 936 (Project)
Draft Environmental Impact Report (DEIR)
SCH No. 2022080449

Dear Victor Hernandez:

The California Department of Fish and Wildlife (CDFW) received a DEIR from the Kings Community Development Agency for the above-referenced Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under Fish and Game Code. While the comment period may have ended, CDFW would appreciate it if you will still consider our comments.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statue for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id*., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code may be required.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include, sections 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

PROJECT DESCRIPTION SUMMARY

Proponent: Aspire Homes CA, Inc

Objective: The Project proposes to divide two existing parcels totaling approximately twenty (20) acres into one hundred and nine (109) single-family development lots in the County of Kings, within the community of Armona. The Project site's existing and proposed zoning is R-1-6, Single-Family Residential. The project will be divided into two phases and will enter into a density bonus agreement, which will include at least ten (10) below-market-rate houses. The 109 single family homes will have an average lot size of 5,094 square feet. Additionally, an approximately 1.7-acre outlet will be created to be used as a stormwater basin and park, as well as a designated reminder around an existing home on approximately one acre. The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities, new residential streets, and the continuation and improvement of Crocus Way. The Project would require no demolition as the site is currently on agricultural land, and the existing home on site will remain.

COMMENTS AND RECOMMENDATIONS

CDFW offers the following comments and recommendations to assist the Kings Community Development Agency in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the CEQA document prepared for this Project.

There are special-status species that have been observed in the Project area and may be present at individual Project sites in the Project area. These resources may need to be evaluated and addressed prior to any approvals that would allow ground-disturbing activities or land use changes.

CDFW is concerned regarding potential impacts to special-status species including, but not limited to, the State threatened and federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*); the State threatened Swainson's hawk (*Buteo swainsoni*), and State candidate endangered Crotch bumblebee (*Bombus crotchii*). To adequately assess any potential impact to biological resources, focused biological surveys should be conducted by a qualified biologist during the appropriate survey period(s) in order to determine whether any special-status species may be present within the Project area. Properly conducted biological surveys, and the information assembled from them, are essential to identify any mitigation, minimization, and avoidance measures and/or the need for additional or protocol-level surveys, and to identify any Project-related impacts under CESA and other species of concern.

I. Environmental Setting and Related Impact

Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or the United States Fish and Wildlife Service (USFWS)?

COMMENT 1: San Joaquin Kit Fox (SJKF)

CDFW agrees with the results of the habitat assessment in section 2.2 of Appendix F. While suitable habitat might not be present CNDDB records indicate that SJKF has been known to occur in the area. Ground disturbing activities and loose friable soil created by Project activity might attract any nearby SJKF and result in inadvertent take. CDFW recommends a qualified biologist conduct on-site worker awareness training and inspect all construction materials for kit fox before use. Any pits or trenches created shall be sloped or covered to prevent inadvertent take.

COMMENT 2: Swainson's Hawk (SWHA)

Section 2.2 of Appendix F indicates that a habitat assessment was performed to evaluate the Project site for SWHA concluding that species likelihood was low. While the assessment did include a 0.5-mile road survey CDFW is concerned that this will not be sufficient in detecting SWHA and adequately determining presence/absence of the species. CDFW recommends a qualified biologist conduct surveys for nesting SWHA following the entire survey methodology developed by the SWHA Technical Advisory Committee (SWHA TAC 2000) prior to Project implementation (during CEQA analysis). CDFW recommends that results of protocol-level surveys for SWHA be included in the Final EIR (FEIR) for the project.

CDFW also recommends that if any activity will take place during the SWHA nesting season (March 1 through September 15), and active SWHA nests are present, a minimum 0.5 mile no-disturbance buffer be delineated and maintained around each nest, regardless of when it was detected by surveys or incidentally, until the breeding

season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, to prevent nest abandonment and other take of SWHA as a result of Project activities.

SWHA detection warrants consultation with CDFW to discuss how to avoid take or, if avoidance is not feasible, to acquire an Incidental Take Permit (ITP) prior to ground disturbing activities, pursuant to Fish and Game Code section 2081 subdivision (b).

COMMENT 3: Crotch Bumblebee (CBB)

The DEIR does not mention any evaluation completed for CBB. The California Natural Diversity Database (CNDDB) records indicate that CBB have the potential to occur in the project vicinity (CDFW 2023). Suitable CBB habitat includes areas of grasslands and upland scrub that contain requisite habitat elements, such as small mammal burrows. CBB primarily nest in late February through late October underground in abandoned small mammal burrows but may also nest under perennial bunch grasses or thatched annual grasses, under brush piles, in old bird nests, and in dead trees or hollow logs (Williams et al. 2014; Hatfield et al. 2015). Overwintering sites utilized by CBB mated queens include soft, disturbed soil (Goulson 2010), or under leaf litter or other debris (Williams et al. 2014). Therefore, potential ground disturbance and vegetation removal associated with Project implementation may significantly impact local CBB populations. CDFW recommends the Project proponent assess these habitat areas near the Project area for potentially suitable CBB habitat and include the survey methodology and findings in the FEIR for the Project. If suitable CBB habitat exists in areas of planned Project-related ground disturbance, equipment staging, or materials laydown, potential CBB nesting sites in these areas would have to be avoided with a 50-foot no disturbance buffer to reduce to less-than-significant the Project-related impacts to the species.

CBB detection warrants consultation with CDFW to discuss how to avoid take or, if avoidance is not feasible, to acquire an ITP prior to ground disturbing activities, pursuant to Fish and Game Code section 2081 subdivision (b).

II. Editorial Comments and/or Suggestions

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDB. The CNDDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be mailed electronically to CNDDB at the following email address:

CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

If it is determined that the Project has the potential to impact biological resources, an assessment of filing fees will be necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required for the underlying project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

CDFW appreciates the opportunity to comment on the Project to assist the Kings Community Development Agency in identifying and mitigating the Project's impacts on biological resources.

More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). If you have any questions, please contact Jaime Marquez, Environmental Scientist, at the address provided on this letterhead, or by electronic mail at Jaime.Marquez@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Julie Vance
FA83F09FE08945A...

Julie A. Vance
Regional Manager

ec: State Clearinghouse, Governor's Office of Planning and Research
State.Clearinghouse@opr.ca.gov.

REFERENCES

California Department of Fish and Wildlife. 2023. Biogeographic Information and Observation System (BIOS). https://www.wildlife.ca.gov/Data/BIOS. Accessed April 26, 2023.

Goulson, D. 2010. *Bumblebees:* behaviour*, ecology, and conservation*. Oxford University Press, New York. 317pp.

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BIOLOGICAL RESOURCES

a) **Would the Project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) 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, or regulations, or by the California Department of Fish & Game or U.S. fish and Wildlife Service?	☐	☑	☐	☐
c) b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☑
d) c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through director removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
e) 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?	☐	☐	☑	☐
f) e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
g) 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?	☐	☐	☐	☑

Discussion for this section originates from the Biological Evaluation letter that was prepared for this Project by Soar Environmental Consulting to identify biological resources present or potentially present on the project site and assess the significance of project impacts on such resources per provisions of the California Environmental Quality Act (CEQA), the federal Clean Water Act (CWA), the state and federal

endangered species acts (FESA and CESA respectively), California Fish and Game Code, and California Water Code. The full document can be found in Appendix B.

Environmental Setting

The Project site is located in northern Kings County within the lower San Joaquin Valley, within the Central Valley of California. The Central Valley is bordered by the Sierra Nevada Mountain Ranges to the east and the Coast Ranges to the west. Like most of California, Kings County is considered a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is relatively low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives approximately 10 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

The proposed Project site is located in a residential and agricultural interface environment just outside the northern boundary of the community of Armona. The proposed Project site is bounded by agricultural fields to the north, east, and west, and a vacant lot to the south. A residential neighborhood is located approximately 200 feet southeast of the proposed Project site. An irrigation canal runs north and south approximately 0.5-mile to the east of the site. The canal is surrounded by agricultural fields. No other natural water features occur in the vicinity of the proposed Project site. The topography of the area is flat and is approximately 250 feet above mean sea level. The soil on the proposed Project site is highly compacted between rows of orchard trees. A grove of eucalyptus trees is located next to a single-family residence on the northwest portion of the property. Other than orchard trees, few other trees exist in the surrounding area. Powerlines run east and west along the southern boundary of the site. No small mammal burrows or vernal pool features were observed in the vicinity of the proposed Project site.

Regulatory Setting

The purpose of CEQA is to assess the impacts of projects on the environment prior to project implementation. Impacts to biological resources are just one type of environmental impact assessed under CEQA and can vary from Project to Project in terms of scope and magnitude. Projects requiring removal of vegetation may result in the mortality or displacement of animals associated with said vegetation. Animals adapted to humans, roads, buildings, and pets may replace those species formerly occurring on a site. Plants and animals that are State and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. Such impacts may be considered either "significant" or "less-than significant" under CEQA. According to California Environmental Quality Act, Statute and Guidelines (AEP 2012), "significant effect on the environment" means a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the Project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory finding of significance" if the project has 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, 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."

Federal Endangered Species Act (FESA): defines an endangered species as "any species or subspecies that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." The law requires protection for the habitats and implements recovery plans of the listed species.

California Endangered Species Act (CESA): prohibits the take of any state-listed threatened and endangered species. CESA defines *take* as "any action or attempt to hunt, pursue, catch, capture, or kill any listed species." If the proposed project results in a take of a listed species, a permit pursuant to Section 2080 of CESA is required from the California Department of Fish and Wildlife (CDFW).

2035 Kings County General Plan: The Kings County General Plan contains the following policies related to the preservation of biological resources that may be considered relevant to the proposed Project's environmental review:

Resource Conservation Goal D.1: Preserve land that contains important natural plant and animal habitats.

- **Resource Conservation Objective D1.1:** Require that development in or adjacent to important natural plant and animal habitats minimize the disruption of such habitats.
- **Resource Conservation Objective D3.1:** Ensure that, in development decisions affecting riparian environments, the conservation of fish and wildlife habitat and the protection of scenic qualities are balanced with other purposes representing basic health, safety, and economic needs.

Resource Conservation Goal E.1: Balance the protection of the County's diverse plant and animal communities with the County's economic needs.

- **Resource Conservation Objective E.1.1:** Require mitigation measures to protect important plant and wildlife habitats.
- **Resource Conservation Objective E.1.1.2:** Require as a primary objective in the review of development projects the preservation of healthy native oaks and other healthy native trees.
- **Resource Conservation Objective E.1.1.3:** Maintain to the maximum extent practical the natural plant communities utilized as habitat by threatened and endangered species.

Discussion

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish & Game or U.S. fish and Wildlife Service?

Less Than Significant Impact With Mitigation Incorporation: , According to CNDDB records, three special status species can potentially be present at the Project Site. These are the State threatened and federally endangered San Joaquin Kit Fox (Vulpes macrotis mutica), the State threatened Swainson's Hawk (Buteo swainsoni), and State candidate endangered Crotch Bumblebee (Bombus crotchii).

The Biological Resource Assessment conducted for the proposed Project found that San Joaquin Kit fox (SJKF) is the only special-status species with historical observations within 5 miles of the proposed Project site. The on-site habitat assessment found no signs of San Joaquin kit fox. Suitable habitat for San Joaquin kit fox is poor on and near the proposed Project site due to agricultural activity. CNDDB records indicate thatSan Joaquin kit fox's nearest and most recent occurrence was recorded in 2006, approximately 2.58 miles northeast of the proposed Project site. No small mammal burrows were observed on Site that could provide adequate refugia for San Joaquin kit fox or associated prey base species. However, ground disturbing activities and loose friable soil created by Project activity may attract any nearby SJKF and result in inadvertent take. The Project will reduce impacts on the SJKF by implementing Mitigation Measure BIO-1, requiring a qualified biologist to perform a pre-construction survey to avoid any potential SJKF habitats.

During the habitat assessment, the Project site and the surrounding 0.5 miles were inspected for signs of special status species. No special status species, active nests, small mammal burrows, vernal pools, or riparian habitats were observed. However, the Project site is a potential habitat for the Swainson's Hawk (SWHA) and the Crotch Bumblebee (CBB). The SWHA requires only a small thicket of vegetation for nesting. The Project will reduce impacts on the SWHA by implementing Mitigation Measures BIO-2 and BIO-3, requiring a qualified biologist to perform a pre-construction survey and avoid any potential SWHA habitats. If any SWHA nests are identified, a 0.5-mile buffer will protect the nest until the breeding season ends or a qualified biologist has determined that the birds have fledged.

Suitable CBB habitat includes grasslands and upland scrub areas that contain requisite habitat elements, such as small mammal burrows. CBB primarily nest in late February through late October underground in abandoned, small mammal burrows but may also nest under perennial bunch grasses or thatched, annual grasses, underbrush piles, in old bird nests, and dead trees or hollow logs. Potential ground disturbance and vegetation removal associated with Project implementation may significantly impact local CBB populations. To reduce the impact on the CBB, Mitigation Measure BIO-

4 will be implemented. This mitigation requires a habitat survey before the start of construction and a 50-foot buffer from any potential nesting sites identified.

Due to the level of agricultural activity, residential development of the surrounding area, lack of suitable habitat, time span and distance of other known occurrences from the site, occurrence of San Joaquin kit fox within the vicinity of the proposed Project site is unlikely, and the proposed Project would be unlikely to adversely affect populations of this species. Impacts would be *less than significant.*

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

No Impact: There are no CNDDB-designated "natural communities of special concern" recorded within the proposed Project area or surrounding lands. The proposed Project site consists of agricultural fields and one single-family residence. There are no water bodies on site, and no riparian vegetation exists on the property. In addition, the proposed Project site is surrounded by cultivated agricultural lands. There would be *no impact*.

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

No Impact: There are no wetlands within the proposed Project area. There would be *no impact.*

d) Would the project 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?

Less than Significant Impact: The proposed Project area is surrounded by cultivated agricultural lands, residential development, and paved roads. Therefore, the proposed Project area does not contain features that would be likely to function as a wildlife movement corridor. No aquatic habitat exists on the proposed Project site. The San Joaquin kit fox, the Swainson's Hawk, and the Crotch Bumblebee are the only special status species with the potential to exist near the site. Due to the level of agricultural activity, residential development of the surrounding area, lack of suitable habitat, time span and distance of other known occurrences from the site, the occurrence of any special status species or migratory wildlife within the vicinity of the proposed Project site is unlikely. Impacts would be *less than significant.*

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact: The proposed Project would comply with the goals and policies of the 2035 Kings County General Plan. The County does not have a tree preservation policy or ordinance. There would be *no impact.*

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

No Impact: The proposed Project would comply with the goals and policies of the 2035 Kings County General Plan. There are no known habitat conservation plans or Natural Community Conservation Plans (NCCP) in the proposed Project area. There would be *no impact.*

Mitigation Measures for Impacts to Biological Resources

Mitigation Measure BIO-1: Prior to ground disturbance, a pre-construction survey shall be conducted to determine if any San Joaquin Kit Foxes (SJKF) are present or if there is potential for the Site to be an SJKF habitat. A qualified biologist shall conduct the survey no more than 30 days prior and no less than 14 days before ground disturbance. The survey shall include inspections of all construction materials. If the biologist observes signs indicating the presence or recent past presence of an SJKF, a qualified biologist shall be required to monitor all ground-disturbing activities and the feature location avoided by a buffer of 50 feet (or more) until it has a biologist confirms that no SJKF are present within the Project footprint.

Mitigation Measure BIO-2: Prior to Project implementation, the Applicant shall conduct a pre-construction survey for nesting Swainson's Hawks (SWHA). This survey shall follow the methodology developed by the SWHA Technical Advisory Committee (SWHA TAC 2000) prior to Project implementation (during CEQA analysis).

Mitigation Measure BIO-3: If Project activities occur during the nesting season (March 1 to September 15) of the Swainson's Hawk (SWHA), a qualified biologist shall survey the Project Site and environmental footprint of the Project for nesting birds to avoid any adverse impacts leading to nest failure or abandonment. If any nests are identified, a 0.5-mile no-disturbance buffer shall be delineated and maintained around each nest, regardless of when surveys detected it or incidentally, until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, to prevent nest abandonment and other take of SWHA as a result of Project activities. If avoidance is not feasible, an Incidental Take Permit (ITP) must be acquired prior to ground-disturbing activities, pursuant to Fish and Game Code section 2081 subdivision (b).

Mitigation Measure BIO-4: Prior to the start of construction, a Crotch Bumblebee (CBB) habitat survey shall be conducted. This habitat survey shall include desktop research, a site visit, project site pictures, and a habitat survey report. If suitable CBB habitat exists in areas of planned Project-related ground disturbance, equipment staging, or materials laydown, potential CBB nesting sites in these areas will be avoided with a 50-foot no-disturbance buffer to reduce the Project related impacts to less than significant. CBB detection warrants consultation with CDFW to discuss how to avoid taking or, if avoidance is not feasible, to acquire an ITP prior to ground-disturbing activities, pursuant to Fish and Game Code section 2081 subdivision (b).

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

July 17, 2023

Victor Hernandez
Kings County Community Development Agency
1400 W. Lacey Blvd., Building #6
Hanford, California 93230
Victor.hernandez@co.kings.ca.us

Subject: Tentative Tract No. 936 (Summers Pointe) (Project)
Revised Draft Environmental Impact Report (DEIR)
SCH No. 2022080449

Dear Victor Hernandez:

The California Department of Fish and Wildlife (CDFW) received a revised Draft Environmental Impact Report (DEIR) from the Kings County Community Development Agency for the above-referenced Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id*., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.

PROJECT DESCRIPTION SUMMARY

Proponent: Aspire Homes CA, Inc.

Objective: The Project proposes to divide two existing parcels totaling approximately 20 acres into 109 single-family residential lots in the County of Kings, within the community of Armona. The Project site's existing and proposed zoning is R-1-6, Single-Family Residential. The project will be divided into two phases and will enter into a density bonus agreement, which will include at least 10 below-market-rate houses. The 109 single family homes will have an average lot size of 5,094 square feet. Additionally, three outlots will be created to be used as a stormwater basin, park, and community well site, as well as a designated reminder around an existing home on approximately one acre. The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities, new residential streets, and the continuation and improvement of Crocus Way. The Project would require no demolition as the site is currently on agricultural land, and the existing home on site will remain.

Location: The proposed project site is located within the County of Kings within the Armona Community Plan, South of West Lacy Boulevard, North of Front Street, and East of 14th Avenue. The site is approximately 0.3 mile Northwest of Armona downtown, and approximately 3 miles East of Hanford Downtown. The Project involves construction on approximately 20.08 acres on Parcels 017-100-012 and 017-100-013. The site is topographically flat and is bounded by agricultural uses to the North, East, and West and single-family residential development to the South.

Timeframe: n/a

COMMENTS AND RECOMMENDATIONS

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under Fish and Game Code.

After reviewing the provided CEQA document, CDFW concurs with the biological resources related analyses and measures proposed in the revised DEIR and recommends that all such measures in the revised DEIR be carried forward into the final EIR. CDFW has determined that the biological resource mitigation measures as currently documented in the revised DEIR are sufficient for mitigation of potential project related impacts to listed species. Please note that implementation of certain mitigation measures such as the relocation of listed species would constitute take of listed species under the California Endangered Species Act (CESA), and erecting exclusion fencing could also result in take of listed species under CESA. Such take of any species listed under CESA would be unauthorized if an Incidental Take Permit (ITP) pursuant to Fish and Game Code Section 2081(b) was not acquired in advance of such actions. It is recommended to consult with CDFW before any ground disturbing activities commence and to obtain an ITP if take (including capture related to salvage and relocation) cannot be avoided.

If you have any questions, please contact Jaime Marquez, Environmental Scientist, at the address provided on this letterhead, or by electronic mail at Jaime.Marquez@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Gerald Hatler
37BF80A1646F41C...
Gerald Hatler for Julie A. Vance
Regional Manager

ec: State Clearinghouse
Office of Planning and Research
State.clearinghouse@opr.ca.gov

Appendix J

Response to DOC Comments

APRIL 13, 2023

VIA EMAIL: VICTOR.HERNANDEZ@CO.KINGS.CA.US
Victor Hernandez
Kings County Community Development Agency
1400 W. Lacey Blvd., Building #6
Hanford, CA 93230

Dear Mr. Hernandez:

DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE TENTATIVE TRACT NO. 936 – SUMMERS POINTE PROJECT, SCH# 2022080449

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Draft Environmental Impact Report for the Tentative Tract No. 936, Summers Pointe Project (Project). The Division monitors farmland conversion on a statewide basis, provides technical assistance regarding the Williamson Act, and administers various agricultural land conservation programs. We offer the following comments and recommendations with respect to the project's potential impacts on agricultural land and resources.

Project Description

The Project proposes to divide two existing parcels totaling approximately twenty (20) acres into one hundred and nine (109) single-family development lots in the County of Kings, within the community of Armona. The project will be divided in two phases and will enter into a density bonus agreement, which will include at least ten (10) below-market-rate houses. Additionally, an approximately 1.7-acre outlot will be created to be used as a stormwater basin and park. The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities, new residential streets, and the continuation and improvement of Crocus Way. The Project would require no demolition as the site is currently on agricultural land, and the existing home on site will remain.

Department Comments

The conversion of agricultural land represents a permanent reduction and significant impact to California's agricultural land resources. CEQA requires that all feasible and reasonable mitigation be reviewed and applied to projects. Under CEQA, a lead agency should not approve a project if there are feasible alternatives or feasible mitigation measures available that would lessen the significant effects of the project.

All mitigation measures that are potentially feasible should be included in the project's environmental review. A measure brought to the attention of the lead agency should not be left out unless it is infeasible based on its elements.

Consistent with CEQA Guidelines, the Department recommends the consideration of agricultural conservation easements, among other measures, as potential mitigation. (See Cal. Code Regs., tit. 14, § 15370 [mitigation includes "compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements."])

Mitigation through agricultural easements can take at least two forms: the outright purchase of easements or the donation of mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural easements. The conversion of agricultural land should be deemed an impact of at least regional significance. Hence, the search for replacement lands should not be limited strictly to lands within the project's surrounding area.

A helpful source for regional and statewide agricultural mitigation banks is the California Council of Land Trusts. They provide helpful insight into farmland mitigation policies and implementation strategies, including a guidebook with model policies and a model local ordinance. The guidebook can be found at:

California Council of Land Trusts

Of course, the use of conservation easements is only one form of mitigation that should be considered. Any other feasible mitigation measures should also be considered. Indeed, the recent judicial opinion in King and Gardiner Farms, LLC v. County of Kern (2020) 45 Cal.App.5th 814 ("KG Farms") holds that agricultural conservation easements on a 1 to 1 ratio are not alone sufficient to adequately mitigate a project's conversion of agricultural land. KG Farms does not stand for the proposition that agricultural conservation easements are irrelevant as mitigation. Rather, the holding suggests that to the extent they are considered, they may need to be applied at a greater than 1 to 1 ratio, or combined with other forms of mitigation (such as restoration of some land not currently used as farmland).

Conclusion

The Department recommends further discussion of the following issues:

- Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the proposed project.
- Impacts on any current and future agricultural operations in the vicinity; e.g., land-use conflicts, increases in land values and taxes, loss of agricultural support infrastructure such as processing facilities, etc.

- Incremental impacts leading to cumulative impacts on agricultural land. This would include impacts from the proposed project, as well as impacts from past, current, and likely future projects.
- Proposed mitigation measures for all impacted agricultural lands within the proposed project area.

Thank you for giving us the opportunity to comment on the Draft Environmental Impact Report for the Tentative Tract No. 936, Summers Pointe Project. Please provide this Department with notices of any future hearing dates as well as any staff reports pertaining to this project. If you have any questions regarding our comments, please contact Farl Grundy, Associate Environmental Planner via email at Farl.Grundy@conservation.ca.gov.

Sincerely,

Monique Wilber

Monique Wilber

Conservation Program Support Supervisor

May 3, 2023

Monique Wilber, Conservation Program Support Supervisor
Division of Land Resource Protection
California Department of Conservation
715 P Street, MS 1904
Sacramento, CA, 95814

Dear Monique Wilber,

This letter is Kings County's response to your April 13, 2023, comment letter on behalf of the California Department of Conservation (DOC), regarding Tentative Tract no. 936 – Summers Pointe Project, SCH #2022080449. Your thoughtful comments are appreciated, and the following clarifications are provided in response.

"Consistent with CEQA Guidelines, the Department recommends the consideration of agricultural conservation easements, among other measures, as potential mitigation." "Of course, the use of conservation easements is only one form of mitigation that should be considered. Any other feasible mitigation measures should also be considered."

The existing Project Site contains 17.08 acres of Cherry Trees, and the remainder is the existin home to remain. All 17.08 acres are designated as Prime Farmland by the FMMP. The Project would result in the conversion of all 17.08 acres into nonagricultural uses.

The loss of Prime Farmland on the Project site would decrease the Important Farmland inventory in Kings County. Kings County had an Important Farmland inventory of 594,484 acres, 139,212 acres of which were categorized as Prime Farmland. Implementation of the Project would convert 20 acres of Prime Farmland, resulting in a .003 percent decrease in the Important Farmland inventory of Kings County and a .014 percent decrease in the County's Prime Farmland inventory.

The 2035 Kings County General Plan plans to develop 1,538 acres of Important Farmland, of which 749 are Prime Farmland. Most of the growth is planned to be adjacent to urbanized areas, which is much less disruptive to other agricultural uses countywide because it discourages the development of new rural neighborhoods or communities that would require the extension of infrastructure that would create growth-inducing impacts and potentially more significant impacts to agricultural resources.

According to the Kings County Agricultural Land Conversion Study (Study) prepared by Michael Brandman Associates, the Site is suitable for farmland conversion. The Study ranked all lands within the County from *Very Low* to *Highest* regarding the priority of preserving the land. The Study graded the Site as having a *Very Low Priority* of preserving the land. The factors that determined this ranking and the Site's analysis are detailed below:

- Water Supply: "The supply of water is an important component to crop production in Kings County. It has had a direct impact on yield increases in recent decades. Many water districts have specific limits on the amount of water that can be delivered for agricultural irrigation. Considering the state's current water crisis due to reduced precipitation/snowpack, limited storage capacity, ever increasing demand for greater supply, growing competition with other western states, and environmental concerns that have led to the lower water allocation, water supply will continue to be an important factor in the value of Farmland. The availability of a reliable water source was a factor in the creation of the County Agricultural Priority Map. The future availability of water in California notwithstanding, the County's prioritization of agricultural lands was determined by whether a parcel was within a water or irrigation district, or within 100 feet of an existing waterway."
    - The Site is located within the Kings County Water District, however, most of the County is within this District. There are no irrigation or water districts for the purpose of agriculture irrigation near the Site.
    - There are no waterways within 100 feet of the Site.

- Competition for Water: "The competition for water between agricultural users and urban users is very important in areas where urban development and farming operations occur concurrently. Urban water users are typically charged more for their water than agricultural users. This is due to the relatively small amount required by individual urban users, especially residential use. Since most urban water costs represent a much smaller percentage of household expenditures than does farming, the higher costs are justified. Due to the higher rate commanded for urban use, farming operations may see their supply dwindle as water districts divert more water for urban uses and increase their revenues. Another potential problem may occur when more agricultural users are replaced with urban users and the fixed costs of water delivery systems increases."
    - The community of Armona is expanding and has built up to the Site's southern edge. Lemoore and Hanford are expanding to the east and west of the Site. It may not have a sustainable water supply if this remained an agricultural operation.

- Farmland Designation: "Farmland Designations developed by the California Department of Conservation and were used as a factor in determining the Agricultural Priority Maps."
    - The Project is on Prime Farmland; however, it is only 17.08 acres compared to 139,212 acres of Prime Farmland within the County.

- Crop Valuation: "Because of the tremendous economic impact that agricultural operations have on Kings County, the valuation of the types of crops historically and/or typically grown specific lands was taken into consideration in this Study. However, since commodity prices fluctuate, this factor was not used in the prioritizing of farmlands for preservation. This factor was used however, in the evaluation of impacts in the various scenarios."
    - According to the Study, the most valuable agricultural commodities are Milk, Cotton, and Cattle. Cherries are not in the top 10 most valuable commodities.

Crop	Dollar Value in 1,000'
Milk, Total	692,185.00
Cotton, Total	234,836.00
Cattle and Calves	161,296.00
Alfalfa	81,687.00
Almonds, Total	48,220.00
Peaches, Total	41,199.00
Corn Silage	49,273.00
Pistachios	78,810.00
Grapes, Total	20,077.00
Tomatoes, Processed	70,498.00
Total	1,478,081.00
Source: Agricultural Crop Report, Kings County, 2007.	

- Fallow Farmland: "Active or inactive use of Farmland was an important factor in determining the priority of agricultural land preservation. In this case, the threshold was whether or not a parcel had remained fallow for one year or more."
    - The Site has been active with Farmland.

- Effects of Conversion on Surrounding Farmland: "As discussed in Section 1.1.2 Agriculture and Urban Growth Pressures, conversion of Farmland to urban uses causes potential impacts on the remaining Farmland, such as: restriction of pesticide, fungicide, and herbicide use; restrictions on burning and the generation of noise and dust; crop loss from vandalism, pilferage, increased vehicle emissions; increased roadway congestion that effects safety and transportation costs; and the increase in the value of land based on its potential for urban uses. While this was not a factor in the Agricultural Priority development, it was an important factor in the evaluation of the various scenarios."
    - The land to the south is the developed community of Armona. The land to the north, east, and west is currently for agricultural uses. The Farmland to the west is designated Medium High-Density Residential by the Armona Community Plan and within Armona's Primary Sphere of Influence. The Farmland to the north and east is within Armona's Secondary Sphere of Influence and is expected to border urban development in the future. The Farmland to the east is currently bordered by urban development.

The Kings County General Plan EIR states *"approximately 2,910 acres of vacant land zoned for residential, commercial, or industrial uses is located primarily within or adjacent to the urbanized cities and communities. Of this developable land, approximately 1,538 acres are designated as Status Farmland by DOC, FMMP."*

"While the loss of up to 1,538 acres of Status Farmland could be considered an adverse impact, it should be noted that this represents only a small fraction (0.26 percent) of the total Important Farmland in the County. As described above, future development under the 2035 General Plan is limited to the existing community plan areas and the urban fringe areas bordering incorporated cities. Thus, the limited growth that would occur on Status Farmland over the next 25 years could be considered logical expansion areas, as opposed to scattered development on agricultural parcels throughout the County. Growth adjacent to urbanized areas is much less disruptive to agricultural uses countywide because it discourages the development of new rural neighborhoods or communities that would require the extension of infrastructure that would create growth-inducing impacts and potentially greater impacts to agricultural resources."

"As described in the 2035 General Plan Land Use Element, revised Sphere of Influence boundaries were adopted for each of the cities and unincorporated communities in the County which became effective January 1, 2008. These new Sphere of Influence boundaries resulted in the effective removal of 11,000 acres from growth consideration. By limiting the possible future expansion of these existing urbanized areas, surrounding agricultural uses would be protected from conversion. The 2035 General Plan contains numerous goals and policies to prevent future loss of these valuable agricultural resources, and to mitigate for incremental losses that may occur on a project-specific basis as these vacant lands are considered for development. Implementation of these policies would ensure that impacts to Status Farmland remain less than significant."

The goals, objectives, and policies to reduce the impact to less than significant, implemented by Kings County General Plan, are shown below. The Project will follow these goals, objectives, and policies.

- **LU Goal B1:** Protect agricultural lands throughout the County, and in particular along the edges of Community Districts and Urban Fringe by maintaining large parcel sizes and preventing the premature development of incompatible urban uses.
    - ❖ LU Objective B1.1: Preserve the integrity of the County's agricultural land resources through agricultural land use designations and other long term preservation policies.
        - ♦ *LU Policy B1.1.1:* Designate all agricultural and grazing land outside of planned urban areas as Limited Agriculture, General Agriculture, Exclusive Agriculture, or Natural Resource Conservation.

    - ❖ LU Objective B1.2*:* Maintain large parcel sizes of agricultural designated land within Urban Fringe areas and around Community Districts to retain viable agricultural production until such time as land is planned and ready for conversion to other uses.
        - ♦ *LU Policy B4.1.2:* Require agricultural employee housing to be located on Site in a manner that minimizes the effect on or loss of productive agricultural land and its productivity, but not to the detriment of the farm employee housing occupants.

    - ❖ RC Objective B1.1: Identify the County's highest priority agricultural lands that are critical to the County's agricultural economy, prime soils, and water availability, and emphasize higher preservation efforts for these areas.
        - ♦ *RC Policy B1.1.1:* Maintain the County's Priority Agricultural Land Model to serve as an information resource in evaluating urban growth and impacts related to the County's agricultural economy and redirect that growth where possible to the lowest priority agricultural land. This model is referenced in Kings County's 2008 Agricultural Land Conversion Study.

- *RC Policy B1.1.2:* Use the Priority Agricultural Model as a reference for determining potential economic and resource impacts related to the loss of agricultural land resulting from conversion to urban uses.

❖ RC Objective B1.2: Establish feasible mitigation for the loss of agricultural land conversion that is not over burdensome to landowner and development interests, yet enhances long term preservation efforts of the County's highest priority agricultural lands.
- *RC Policy B1.2.1:* Require new development that results in the loss of agricultural lands to provide mitigation to offset the loss. The County's Farmland Preservation Mitigation Strategy shall require comparable acreage enrollment in the County's Farmland Security Zone.

❖ RC Objective C1.1: Conserve prime agricultural soils, and avoid their conversion to nonagricultural uses.
- *RC Policy C1.1.1:* Apply one of the four Agriculture land use designations to areas with productive and potentially productive agricultural soils and grazing land.
- *RC Policy C1.1.2:* Evaluate the effects of the loss of agricultural soils related to discretionary land use approvals for nonagricultural uses that are allowed in agriculturally zoned land.

In addition, the Armona Community Plan has the following policies related to agricultural resources.

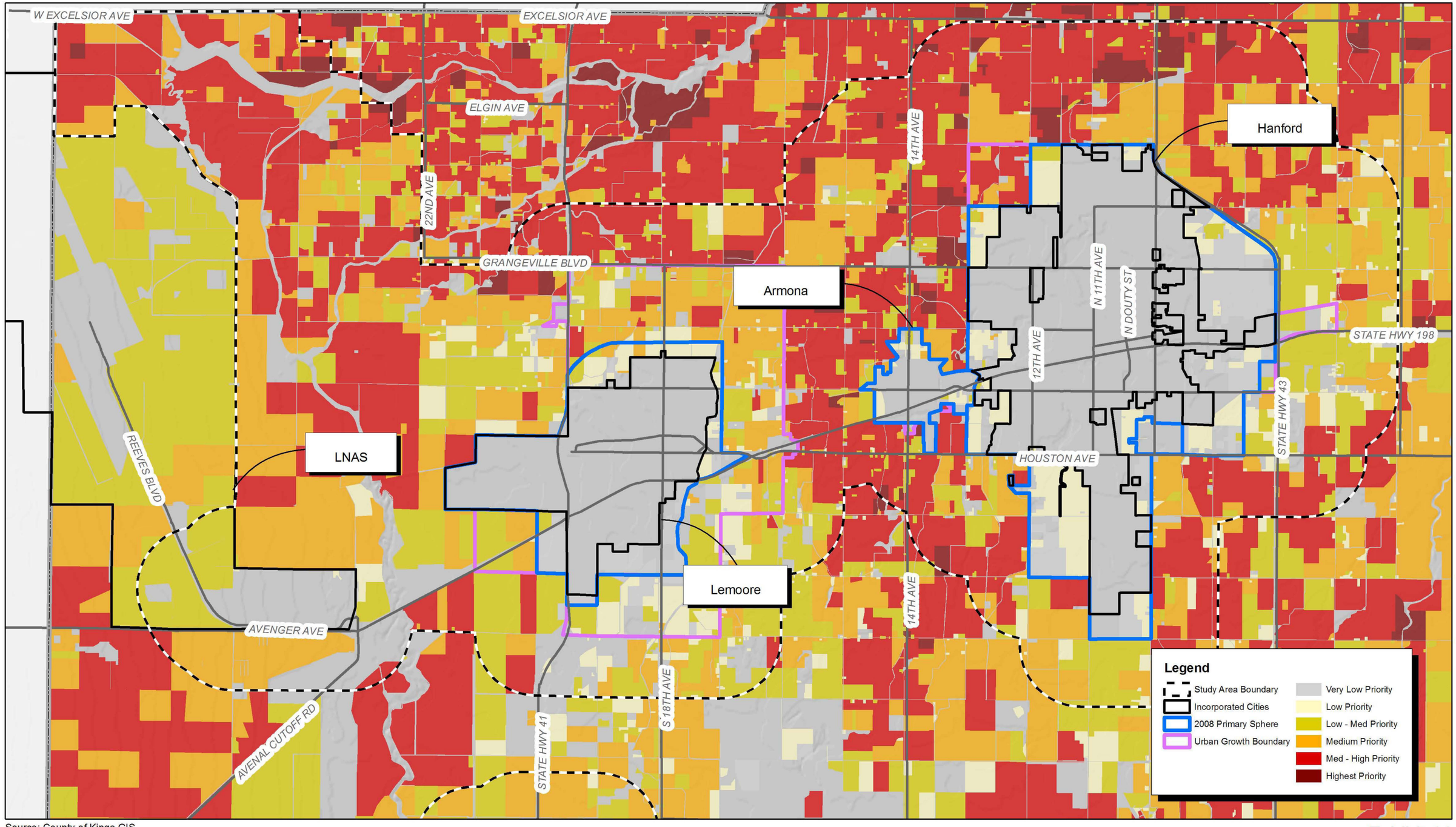
- *ACP Policy 2A.2.3:* Residential growth should avoid development of prime agricultural lands outside the Armona Community Services District Primary Sphere of Influence, and those protected under "Williamson" Act or Farmland Security Zone Contract.
- *ACP Policy 3A.1.3:* The County shall implement agricultural mitigation measures to minimize the loss of prime agricultural land that also serve as agricultural buffers separating communities and cities.
- *ACP Policy 3A.1.5:* Agricultural Open space lands shall be protected from urbanization by limiting the extension of District or City water or sewer services.

Policy	Complies With Policy?
LU Policy B1.1.1	Yes. The Site is within a planned urban area and does not need an Agriculture or Natural Resource land use designation.
LU Policy B4.1.2	N/A. No agricultural housing in the area.
RC Policy B1.1.1	Yes. The Site is designated as "Very Low Priority" in terms of the priority of preserving the land. This means there is a very low impact due to farmland conversion on the Project Site.
RC Policy B1.1.2	
RC Policy B1.2.1	Yes. According to Kings County's *Farmland Preservation And Mitigation Strategy,* mitigation fees are established; however, "only areas of "Medium", "Medium-High," and "Highest" Priority were considered." The Project is a "Very Low" Priority and therefore will not require a mitigation fee.
RC Policy C1.1.1	Yes. The Project is currently being evaluated for its impact on Agricultural Resources.
RC Policy C1.1.2	
ACP Policy 2A.2.3	Yes. The Project is within the Primary Sphere of Influence and is not protected under the Williamson Act.
ACP Policy 3A.1.3	N/A. Discussed is RC Policy B1.2.1
ACP Policy 3A.1.5	Yes. The Project is already in the Armona Community Services District.

Overall, due to:

1. The Site's *Very Low Priority* Designation in terms of the priority of preserving the land for agricultural uses;
2. The Site's location within Armona's Primary Sphere of Influence and the proximity to existing urban uses;
3. The Site's designation as Medium Density Residential in the Armona Community Plan;
4. The Site's minimal impact on the overall farmland inventory in Kings County, and
5. The Site's compliance with all policies

The Project will have a *Less Than Significant Impact Without Mitigation* of Agricultural Resources.



Source: County of Kings GIS.

NORTH

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Michael Brandman Associates

26870005 • 08/2008 | 11_hanford_ag.mxd

Exhibit 11
Hanford, Armona, Lemoore
and LNAS Priority Agricultural Land Map

KINGS COUNTY AGRICULTURAL LAND CONVERSION STUDY

Appendix K

Statement of Overriding Considerations

Statement of Overriding Considerations

Regarding the Final Subsequent Environmental Impact Report for the Summers Pointe, Tract 936 Subdevelopment Project

(Public Resources Code §21081(b) & CEQA Guidelines §15093)

State Clearinghouse #2022080449

A. Background

CEQA requires decision-makers to balance the benefits of the proposed Project against its unavoidable environmental risks when determining whether to approve the Project. If the benefits of the Project outweigh the unavoidable adverse effects, those effects may be considered "acceptable" (CEQA Guidelines Section 15093[a]). CEQA requires the lead agency to support, in writing, the specific reasons for considering a project acceptable when significant impacts are infeasible to mitigate. Such reasons must be based on substantial evidence in the Final EIR or elsewhere in the administrative record (CEQA Guidelines Section 15093[b]). The agency's statement is called a "Statement of Overriding Considerations." The following sections describe each of the Project's significant and unavoidable impacts and the justification for adopting a statement of overriding considerations.

B. Significant and Unavoidable Adverse Impacts

According to Section 15355 of the CEQA Guidelines, cumulative impacts "refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Individual effects that may contribute to a cumulative impact may be from a single project or several separate projects. Individually, the impacts of a project may be relatively minor, but when considered along with impacts of other closely related or nearby projects, including newly proposed projects, the effects could be cumulatively considerable. Section 15126.2(c) of the CEQA Guidelines requires that an EIR describes any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. The following impact of the Summers Pointe Project is considered significant and unavoidable based on the Project's Draft EIR and the Draft Final EIR. The following effects of the Project have been determined to be significant and unavoidable after the implementation of all feasible mitigation measures.

C. Significant Impact of the Project

Transportation Impact 1: The Project would generate VMT exceeding the County's thresholds. The Project will implement the following mitigations to lessen the impact; however, there will still be a Significant and Unavoidable Impact:

- **Mitigation Measure LUT-1**: Prior to the start of construction, the applicant shall enter the Project into a density bonus agreement, which will provide more housing units per acre than a typical neighborhood in the R-1-6 zone.
- **Mitigation Measure LUT-3**: The project site will be located within ¼ mile of Medium Density Residential, Medium High-Density Residential, Mixed Use, Downtown Mixed Use, Rural Commercial, Public/Quasipublic, and Agriculture planned land uses.
- **Mitigation Measure LUT-4**: The project site will be located approximately 3 to 3.5 miles from the Hanford Downtown.

- **Mitigation Measure LUT-6**: Prior to the start of construction, the applicant shall enter the Project into a density bonus agreement, which will include at least 10 below-market-rate houses out of 109 total houses.
- **Mitigation Measure LUT-9**: The Project shall include improved design elements to enhance walkability and connectivity. These elements will include an above-average amount of street intersections, pedestrian crossings, and sidewalks throughout the project site.
- **Mitigation Measure SDT-1**: The Project shall eliminate physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation. The project site will contain pedestrian sidewalks throughout and connect to nearby homes and commercial uses.
- **Mitigation Measure SDT-2**: Prior to the start of construction, the applicant shall designate the location of appropriate traffic calming features such as marked crosswalks and on-street parking for the project site. The applicant will show these features on the improvement drawings for the project site. A cost estimate for continued maintenance of such features will be calculated and will be included in the Project's zone of benefits.
- **Mitigation Measure SDT-5**: Prior to the start of construction, the applicant shall designate the location of a Class 3 bike route. The applicant will show the location of appropriate bike route striping in their improvement drawings for the project site. A cost estimate for continued maintenance of such striping will be calculated and will be included in the Project's zone of benefits.
- **Mitigation Measure TRT-3**: Prior to the start of construction, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a ride-sharing program to residents of the project site. The applicant shall designate an on-street parking space to be used by ride-sharing vehicles.
- **Mitigation Measure TRT-9**: Prior to the start of construction, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a car-sharing program to residents of the project site.
- **Mitigation Measure TST-2**: Prior to the start of construction, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide sidewalk/ crosswalk safety enhancements and bus shelter improvements for a new transit stop at or near the project site.
- **Mitigation Measure TST-3**: Prior to the start of construction, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide a new transit stop at or near the project site.
- **Mitigation Measure TST-6**: Prior to the start of construction, the applicant shall coordinate with the Kings Area Regional Transit (KART) service to provide shuttle service to residents of the project site.

D. Considerations in Support of the Statement of Overriding Considerations

The County of Kings declares that, having reduced the adverse significant environmental effects of the Project to the extent feasible by adopting the proposed mitigation measures, having considered the entire administrative record on the Project, and having weighed the benefits of the Project against its significant unavoidable impact after mitigation, the County has determined that the social, economic, and environmental benefits of the Project outweigh the potential unavoidable significant impacts and render those potential significant impacts acceptable based on the following considerations:

- The Project reflects the County of Kings's stated vision, goals, and objectives.

- The Project will ensure orderly development patterns to accommodate projected increases in the population through the buildout of the General Plan by providing strategic land use designations that will avoid or minimize land use conflicts.
- The Project will provide various housing opportunities to a range of potential homeowners. A portion of the homes will be affordable housing designed to satisfy existing and future demand for quality housing in the area.
- The Project will maximize and broaden the County's sales tax base by providing local and regional tax-generating uses.
- The Project will improve and maximize the economic viability of the Project site and area by providing strategic land use designations. The storm drainage basin on the Site will help serve other developments nearby, reducing the need for expanded utilities outside the community.
- The Project will provide a residential development that assists the County, and the Community of Armona, by meeting the Kings County General Plan and Armona's Community Plan's goals, objectives, and policies. As the CEQA Lead Agency for the proposed action, the County of Kings has carefully reviewed the Project and the alternatives presented in the EIR and fully understand the Project and Project alternatives proposed for development. The County finds that any one or more of these overriding considerations would have been sufficient to outweigh adverse impacts. Further, the County finds that all potential adverse environmental impacts and all feasible mitigation measures to reduce the impacts of the Project have been identified in the EIR.

E. Conclusions

The County finds that the Project has been carefully reviewed and that the goals and objectives included in the Project and the mitigation measures identified in the Final EIR have avoided or substantially lessened several environmental impacts to the extent feasible. Nonetheless, the Project may have specific environmental effects which cannot be avoided or substantially lessened. The County has carefully considered all of the environmental impacts which have not been mitigated to an insignificant level. The County has carefully considered the Project's economic, legal, social, and technological benefits and other considerations. The lead agency has balanced the benefits of the Project against its unavoidable and unmitigated adverse environmental impacts and, based upon substantial evidence in the record, has determined that the benefits of the Project outweigh the adverse environmental effects. Based on the previous and under Public Resources Code Section 21081(b) and CEQA Guidelines Section 15091(a)(3) and 15093(b), the County finds that the remaining significant unavoidable impacts of the Project are acceptable considering its economic, fiscal, technological, and social benefits as well as other considerations, including the provision of housing opportunities for County residents. Such benefits outweigh such significant and unavoidable impacts and provide the substantive and legal basis for this Statement of Overriding Considerations. Finally, the County finds that, to the extent that any impacts identified in the Final EIR remain unmitigated, mitigation measures have been required to the extent feasible, although the impacts could not be reduced to a less than significant level. Accordingly, when deciding to approve the Project, the County faces presumed unmitigated impacts, which are limited in nature. When considering the significant benefits outlined in this Statement of Overriding Consideration against limited impacts, the balance of weight falls in favor of the merits of the Project and its benefits.