

**DRAFT**  
**ENVIRONMENTAL IMPACT REPORT**  
SCH #2012022039

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**MORGAN RANCH MASTER PLAN**



**November 2014**

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Quad Knopf

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DRAFT  
ENVIRONMENTAL IMPACT REPORT  
SCH #2012022039

**Morgan Ranch Master Plan**

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**November 2014**

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## ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACM	Asbestos Containing Material
ADT	Average Daily Traffic
APE	Area of Potential Effect
AST	Above Ground Storage Tank
AQAP	Air Quality Attainment Plan
AQIA	Air Quality Impact Assessment
ATCM	Air Toxic Control Measure
BACT	Best Available Control Technology
BMPs	Best Management Practices
BPSs	Best Performance Standards
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalTrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCAP	Climate Change Action Plan
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFCs	Chlorofluorocarbons
CFD	Community Facility District
CH <sub>4</sub>	Methane
CMUTCD	California Manual on Uniform Traffic Control Devices for Streets and Highways
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
COG	Council of Governments
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CPUC	California Public Utilities Commission
CRH	California Register of Historic Places
CSA	County Service Area
CUP	Conditional Use Permit
CWA	Federal Clean Water Act
dBA	A-weighted Decibel
DEIR	Draft Environmental Impact Report
DOF	California Department of Finance
DTSC	Department of Toxic Substances Control
EDD	California Employment Development Department
EIR	Environmental Impact Report
EPA	Environmental Protection Agency

FCAA	Federal Clean Air Act
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FSZ	Farmland Security Zone
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gases
GPA	General Plan Amendment
HAP	Hazardous Air Pollutant
IS	Initial Study
ISR	Indirect Source Review
ITE	Institute of Traffic Engineers
KOPs	Key Observation Points
Ldn	Day/Night Noise Level
LID	Low Impact Development
LOS	Level of Service
MEI	Maximally Exposed Individual
MMTCO <sub>2e</sub>	Million Metric Tons of Carbon Dioxide Equivalent
MTCO <sub>2e</sub>	Metric Tons of Carbon Dioxide Equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHRA	National Historic Preservation Act
N <sub>2</sub> O	Nitrous Oxide
NOC	Notice of Completion
NOP	Notice of Preparation
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
OSHA	Occupational Safety and Health Administration
OPR	Governor's Office of Planning and Research
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter 10 Microns or Smaller
PM <sub>2.5</sub>	Particulate Matter 2.5 Microns or Smaller
RHNA	Regional Housing Needs Assessment
ROG	Reactive Organic Gases
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCH	California State Clearinghouse
SHMA	Seismic Hazards Mapping Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District

SJVR	San Joaquin Valley Railroad
SMARA	California Surface Mining and Reclamation Act
SO <sub>x</sub>	Oxides of Sulfur
SO <sub>2</sub>	Sulfur Dioxide
SWTP	Surface Water Treatment Plant
TAC	Toxic Air Contaminant
TCM	Transportation Control Measure
TIS	Traffic Impact Study
UBC	Uniform Building Code
VOC	Volatile Organic Compounds
VMT	Vehicle Miles Traveled
WSA	Water Supply Assessment

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## **EXECUTIVE SUMMARY**

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## EXECUTIVE SUMMARY

### *Introduction*

The City of Turlock has initiated the preparation of a Master Plan for properties located in the southern portion of the city, and has sought the assistance of Quad Knopf, Inc. to evaluate the environmental effects of the proposed project and to present the results in an Environmental Impact Report (EIR). This Draft EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) statutes and guidelines and is an informational document intended to inform public-decision-makers, responsible or interested agencies and the general public of the potential environmental effects of the proposed project, and where applicable, mitigation measures that can be implemented to reduce or avoid the potential adverse environmental effects. While CEQA requires that major consideration be given to avoiding adverse environmental effects, the lead agency and other responsible public agencies must balance adverse environmental effects against other public objectives, including the economic and social benefits of a proposed project, in determining whether a proposed project should be approved.

### *Project Location and Description*

The project is located in the City of Turlock in Stanislaus County, California. The project site is in the vicinity of the Lander Avenue/State Route 99 (SR 99) interchange and bounded by Lander Avenue on the West, Glenwood Avenue on the north, Golf Road on the east, and SR 99 on the south.

The proposed project consists of the adoption and implementation of the Morgan Ranch Master Plan. The Morgan Ranch Master Plan would modify the General Plan designations and zoning for approximately 170 acres. The Master Plan would designate the land uses for Community Commercial (CC), Office (O), High Density Residential (HDR), Medium Density Residential (MDR), Park (P), and Public/Semi-Public (PUB). (Figure 2-8). The Master Plan would zone the land uses for Community Commercial (CC), Commercial Office (CO), High Density Residential (RH), Medium Density Residential (RM), and Public/Semi-Public (PS). The table below provides a summary of the proposed land uses.

#### Land Use Summary

Land Use Designation	Approximate Acreage	Number of Units	Density	Allowed Density
Medium Density Residential	120.2	875 DU	9 DU/acre	7.5-9 DU/acre
High Density Residential	15.0	450 DU	30 DU/acre	17-30 DU/acre
Community Commercial	8.9	96.9 KSF	25% FAR	25% FAR
Office	1.5	16.3 KSF	25% FAR	35% FAR
Park	8.7	-	-	-
Detention Basin	4.4	-	-	-
Public (School)	11.1	300 students	-	-

Source: City of Turlock, Morgan Ranch Master Plan, 2014

Notes: DU = dwelling units, KSF = 1,000 square feet, FAR = Floor Area Ratio

The Master Plan provides development standards and design guidelines to ensure consistency in the quality and character of the project area neighborhoods as the Plan is implemented. It is the intent of the Master Plan to facilitate development by providing a framework to ensure that, over time, the built environment of the project area will be cohesive and consistent with the overall vision of the City. The Master Plan will be used as a tool in the review and approval process of precise development proposals such as tentative subdivision maps, site plans, and improvement plans as they are proposed for the project area. Responsibility for interpretation of these development standards and design guidelines will reside with the City of Turlock and be administered by the Turlock Planning Division.

### ***Alternatives to the Project***

Section 15126.6 of the State CEQA Guidelines requires the EIR to describe a reasonable range of alternatives to the project or to the location of the project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the proposed project, and to evaluate the comparative merits of the alternatives. Alternatives that would reduce or avoid significant impacts represent an environmentally superior alternative to the proposed project. However, if the environmentally superior alternative is the “no project” alternative, the EIR must also identify an environmentally superior alternative among the other alternatives.

The following alternatives have been determined to represent a reasonable range of alternatives (plus the No Project/ No Build alternatives) that have the potential to feasibly or partially attain objectives of the project but avoid or substantially lessen any of the significant effects of the project. These alternatives are analyzed in detail in following sections:

**No Project/ No Build** - The No Project/ No Build alternative for this project considers one potential scenario that could occur in lieu of the proposed project: (1) No Build/No Project - continuation of existing conditions (agricultural uses) within the proposed project site

**Reduced Intensity** - The reduction would include the following: residential intensities, commercial and office space, school site acreage, and parks. It is assumed for purposes of analysis that with a 50% reduction, the full build-out population would be 2,476.5 (1/2 of 4,953 persons calculated in Section 3.14.6). Therefore, at full build-out the proposed project would include: 661 medium density homes, 169 high density homes, 48,460.5 sq. ft. of commercial space, 8,167.5 sq. ft. of office space, a 5.55 acre school, one park, and a 4.4 acre detention pond. The detention basin would remain the same size in order to serve potential future development in the basin's drainage contributing area.

**Increased Intensity** – In the Increased Intensity alternative the project would be constructed on the northerly 136 acres (the northerly 80 %) of the project site leaving the southerly 34 acres in periodic agricultural production. This alternative would accommodate 5,199 persons in approximately 1,699 units at 3.06 persons per unit.

## ***Summary of Impacts and Mitigation Measures***

Section 15123(b)(1) of the *Guidelines for Implementation of the California Environmental Quality Act* (State CEQA Guidelines) provides that the summary shall identify each significant effect with proposed mitigation measures that would reduce or avoid that effect. A Summary of Potential Significant Impacts is provided in Table ES-1 on the following pages.

**Table ES-1  
Summary of Impacts and Mitigation Measures**

<b>Impact #</b>	<b>Impact</b>	<b>Significance</b>	<b>Mitigation #</b>	<b>Mitigation Measure</b>	<b>Significance After Mitigation</b>
<b>3.1 Aesthetics</b>					
3.1.1	Substantially degrade the existing visual character or quality of the site and its surroundings.	Less Than Significant		No mitigation measures are required.	
3.1.2	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	Potentially Significant	3.1.2a	Lighting fixtures shall be designed to produce the minimum amount of light necessary for safety purposes. All lighting in the project area shall be shielded, directed downward and away from adjoining properties and rights-of-way. Light shields or equivalent shall be installed and maintained consistent with manufacturer's specifications, and shall reduce the spillage of light onto adjacent properties to less than a one-foot-candle standard, as measured at the adjacent property line.	Less Than Significant
		Potentially Significant	3.1.2b	The light source for externally lighted signs shall be hidden or screened from view from adjoining properties and rights-of-way. Internally illuminated signs shall use translucent individual copy letters with an opaque background so only the lettering is illuminated.	Less Than Significant
		Potentially Significant	3.1.2c	Structures shall use glare reducing materials to the maximum extent practicable, including non-reflective paints and building materials, to reduce the amount of glare created by the project structures.	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
<b>3.2 Agricultural Resources</b>					
3.2.1	Conversion of 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 uses.	Significant, Unavoidable, and Irreversible		No mitigation measures are available.	Significant, Unavoidable, and Irreversible
3.2.2	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.	Less Than Significant		No mitigation measures are required.	
<b>3.3 Air Quality</b>					
3.3.1	Conflict with or obstruct implementation of any applicable air quality plan	Potentially Significant	3.3.1a	<p>Prior to issuance of grading permits for each development within the Morgan Ranch Master Plan project site, the project applicant shall provide information to the City of Turlock describing the methods by which the following measures will be complied with:</p> <ul style="list-style-type: none"> <li>▪ Off-road equipment used onsite shall achieve a fleet average emissions equal to or less than the Tier II emissions standard of 4.9 grams of NOx per horsepower hour. This can be achieved through any combination of uncontrolled engines and engines complying with Tier II and above engine standards. Tier II emission standards are set forth in Section 2423 of Title 13 of the California Code of Regulations and Part 89 of Title 40 Code of Federal Regulations;</li> <li>▪ Construction equipment shall be properly maintained at an offsite location;</li> </ul>	Significant & Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>maintenance shall include proper tuning and timing of engines. Equipment maintenance records and data sheets of equipment design specifications shall be kept on-site during construction;</p> <ul style="list-style-type: none"> <li>▪ Onsite construction equipment shall not idle for more than 5 minutes in any one hour;</li> <li>▪ During the building phase, onsite electrical hook ups shall be provided for electric construction tools including saws, drills and compressors, to eliminate the need for diesel powered electric generators; and</li> <li>▪ Construction workers shall be encouraged to carpool to and from the construction site. Workers shall be informed in writing and a letter shall be placed on file in the Turlock Development Services office documenting efforts to carpool.</li> </ul>	
		Potentially Significant	3.3.1b	Construction contracts shall include a provision that requires all architectural coatings to be zero-volatile organic compound (VOC) paints (assumes no more than 100 grams/liter of VOC) and coatings. All paints shall be applied using either high-volume low-pressure (HVLP) spray equipment or by hand application.	Significant & Unavoidable
		Potentially Significant	3.3.1c	Prior to issuance of grading permits, the project proponent will provide the City of Turlock with a traffic control plan that describes in detail safe detours around the project construction site, provides temporary traffic control (i.e., flag person) during construction-related truck-hauling activities, and minimizes traffic flow interference	Significant & Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				from construction activities. The plan may include: <ul style="list-style-type: none"> <li>▪ Advance public notice of alternative routes;</li> <li>▪ Use of public transportation and satellite parking areas with a shuttle service for construction personnel;</li> <li>▪ Schedule operations that affect traffic for off-peak hours;</li> <li>▪ Minimize obstruction of through-traffic lanes; and</li> <li>▪ Provide a flag person to guide traffic properly and ensure safety at construction sites.</li> </ul>	
		Potentially Significant	3.3.1d	Construction staging and queuing areas shall not be located within 500 feet of sensitive receptors.	Significant & Unavoidable
		Potentially Significant	3.3.1e	Construction plans shall provide for the installation of automated lighting and thermal controls in all non-residential facilities. The City of Turlock will verify compliance during review of construction plans.	Significant & Unavoidable
		Potentially Significant	3.3.1f	Construction plans shall include one or more of the following roofing technologies to reduce energy consumption: <ul style="list-style-type: none"> <li>▪ EPA “Energy Star” approved roofing materials and</li> <li>▪ “Green Roof” Technology.</li> </ul>	Significant & Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Potentially Significant	3.3.1g	Construction plans shall address passive energy conservation through building orientation, use of natural ventilation and shading in a way that does not compromise the thermal integrity of the building or the implementation of Mitigation Measure #3.3.1i. The City of Turlock will verify compliance during review of construction plans.	Significant & Unavoidable
		Potentially Significant	3.3.1h	Each development project within the Morgan Ranch Master Plan project site shall be designed to achieve a minimum 20 percent energy efficiency above 2008 Title 24 standards. Prior to issuance of building permits, the project applicant shall provide a third-party verification to the City of Turlock demonstrating that the project achieves this energy efficiency goal.	Significant & Unavoidable
		Potentially Significant	3.3.1i	<p>Prior to issuance of building permits, a landscape plan shall be prepared and submitted to the City of Turlock for review and approval pursuant to the City’s normal planning process that provide shade trees and foliage to reduce building and surface lot heating/cooling needs, and conform to landscape standards established by the City of Turlock. The landscape plan shall comply with the State-mandated Water Efficient Landscape Ordinance and shall have the following components:</p> <ol style="list-style-type: none"> <li>1. At least 50 percent of installed trees and shrubs shall be low-ozone forming potential (Low-OFP) and drought-tolerant species; and</li> <li>2. The landscape plan shall be designed to shade 50 percent of paved surfaces within 10 years of buildout.</li> </ol>	Significant & Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Potentially Significant	3.3.1j	<p>Prior to approval of the final site plan for the non-residential uses that would receive five or more truck deliveries per week, the project applicant shall demonstrate that the following anti-idling measures would be implemented:</p> <ul style="list-style-type: none"> <li>▪ Provide available electricity hookups for trucks in the loading dock areas;</li> <li>▪ Signs shall be posted in dock areas advising drivers that idling shall not occur for more than 3 minutes; and</li> <li>▪ Telephone numbers of the building facilities manager and the California Air Resources Board shall be posted on signs at truck entrances to report idling violations.</li> </ul>	Significant & Unavoidable
		Potentially Significant	3.3.1k	<p>Prior to issuance of grading permits, the project applicant will work with the SJVAPCD to determine project emissions based on a more refined construction schedule and proposed construction equipment to determine if construction emissions exceed the Air District thresholds of significance after compliance with the Indirect Source Review Rule. If construction emissions exceed the Air District thresholds of significance, the applicant shall consult with the SJVAPCD to develop and implement a Feasible Implementation Plan with a goal of reducing construction emissions to below annual thresholds of 10 tons per year of ROG, 10 tons per year of NOx, and 15 tons per year of PM10. The Feasible Implementation Plan as identified above shall identify offsite mitigation measures proposed to be implemented by the applicant and agreed upon by the SJVAPCD to be appropriate</p>	Significant & Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>and effective to reduce emissions. Alternatively, the Feasible Implementation Plan shall identify the mitigation fee required to be paid by the applicant based on the amount of emission reductions needed to bring the project’s construction impacts below the annual thresholds. The project applicant shall provide this funding prior to the start of construction to help facilitate emission offsets that are as real-time as possible. The SJVAPCD will use the funds to purchase the required emission reductions through offsite mitigation strategies. The emissions reduction agreement must be implemented in addition to the required measure to reduce construction-related diesel equipment exhaust emissions listed in Mitigation Measure #3.3.1a. Development and implementation of the emissions reduction agreement shall be fully funded by the project applicant. Preference shall be given to offsite emission reduction projects that are located in or in close proximity to Turlock. The applicant shall submit documentation to the City of Turlock verifying that this has been successfully completed.</p>	
		Potentially Significant	3.3.11	<p>Prior to issuance of building permits, the project applicant will work with the SJVAPCD to determine if the project’s operational emissions exceed the Air District thresholds of significance based on the incorporation of onsite mitigation measures and detailed project information. If the operational emissions exceed the Air District’s thresholds of significance, the applicant shall consult with the SJVAPCD to develop and implement a Feasible Implementation Plan with a goal of reducing operational emissions to below annual thresholds of 10 tons per year of</p>	Significant & Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>ROG, 10 tons per year of NOx, and 15 tons per year of PM10. The Feasible Implementation Plan shall identify offsite mitigation measures proposed to be implemented by the applicant and agreed upon by the SJVAPCD to be appropriate and effective to reduce emissions. Alternatively, the Feasible Implementation Plan shall identify the mitigation fee required to be paid by the applicant based on the amount of emission reductions needed to bring the project impacts below the annual thresholds. The SJVAPCD will use the funds to purchase the required emission reductions through offsite mitigation strategies. Payment of offsite fees shall be prior to issuance of occupancy permits. The Feasible Implementation Plan requires the SJVAPCD approval and verification of payment prior to receiving final occupancy permits from the City of Turlock.</p>	
3.3.2	Violate any air quality standard or contribute substantially to an existing or projected air quality violation.	Less Than Significant		No mitigation measures are required.	
3.3.3	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).	Potentially Significant	3.3.1a through 3.3.11	Implement Mitigation Measures #3.3.1a through #3.3.11.	Significant & Unavoidable
3.3.4	Expose sensitive receptors to substantial pollutant concentrations.	Less Than Significant		No mitigation measures are required.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.3.6	Exposure of a substantial number of people to sources of objectionable odors.	Less Than Significant		No mitigation measures are required.	
<b>3.4 Biological Resources</b>					
3.4.1	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in a local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	Potentially Significant	3.4.1a	Pre-construction surveys shall be performed on the project site in areas where there is a potential for nesting raptors and nesting migratory birds to occur; these include all areas of the project site that contain or are within 500 feet of power poles or trees that are suitable for the establishment of nests. If mature crops are present during the breeding season of migratory birds (the nesting period is loosely defined as February 15 to August 15), a pre-construction survey shall be performed within 14 days of construction to identify active nests and mark those nests for avoidance. During the nesting period, bird nests shall be avoided by 250 feet and raptor nests should be avoided by 500 feet.	Less Than Significant
		Potentially Significant	3.4.1b	<p>Because there is the potential for San Joaquin kit foxes to occur on site, the USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance shall be followed. The measures that are listed below have been excerpted from those guidelines and will protect San Joaquin kit foxes from direct mortality and from destruction of active dens and natal or pupping dens. The City of Turlock shall determine the applicability of the following measures depending on specific construction activities and shall implement such measures when required. The measures below will also serve to protect American badger.</p> <p>1. Pre-construction surveys shall be conducted no fewer than 14 days and no more than 30</p>	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>days prior to the beginning of ground disturbance and/or construction activities, or any project activity likely to impact the San Joaquin kit fox or American badger. Exclusion zones shall be placed in accordance with USFWS Recommendations using the following:</p> <p>Potential Den      50' radius                      Known Den          110' radius                      Nata/Pupping Den                      (Occupied and                      Unoccupied)      Contact U.S. Fish and                      Wildlife Service for guidance                      Atypical Dan      50' radius</p> <p>2. If dens must be removed, they must be appropriately monitored and excavated by a trained wildlife biologist. Replacement dens will be required. Destruction of natal dens and other "known" kit fox dens must not occur until authorized by USFWS.</p> <p>3. Project-related vehicles shall observe a 20 miles per hour speed limit in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Nighttime construction shall be avoided, unless the construction area is appropriately fenced to exclude kit foxes. The area within any such fence must be determined to be uninhabited by San Joaquin Kit foxes prior to initiation of construction. Off-road traffic outside of designated project areas shall be prohibited.</p>	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>4. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under numbers 9 and 10 of this section must be followed.</p> <p>5. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.</p> <p>6. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a</p>	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>construction or project site.</p> <p>7. No firearms shall be allowed on the project site.</p> <p>8. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets shall be permitted on the project sites.</p> <p>9. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox, or who finds a dead, injured or entrapped individual. The representative's name and telephone number shall be provided to the USFWS and CDFW.</p> <p>10. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW should be contacted for advice.</p> <p>11. Any contractor, employee(s), or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFW immediately in the case of a dead, injured or entrapped kit fox. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.</p>	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>12. The Sacramento Fish and Wildlife Office and CDFW will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, 2800 Cottage Way, Suite W2605, Sacramento, CA 95825-1846, and (916) 414-6620. The CDFW contact is Mr. Scott Osborn at 1416 9th Street, Sacramento, CA 95814, (916) 324-3564.</p>	
		Potentially Significant	3.4.1c	<p>Standard measures for the protection of burrowing owls provided in Burrowing Owl Consortium’s April 1995 Burrowing Owl Survey Protocol and Mitigation Guidelines and the CDFW’s October 17, 1995 Staff Report on Burrowing Owl Mitigation shall be implemented. Active burrows will be avoided by 250 feet, compensation will be provided for the displacement of burrowing owls, and habitat acquisition and the creation of artificial dens for any burrowing owls removed from construction areas will be provided.</p> <p>1. Pre-construction surveys for burrowing owls shall be conducted. Pre-construction surveys of construction areas and a 500 foot buffer shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another</p>	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>preconstruction survey must be completed.</p> <p>2. If burrowing owls are present on the construction site (or within 500 feet of the construction site) during the breeding season (April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 500 foot buffer shall be installed between the nest site or active burrow and any earth-moving activity or other disturbance. This 500 foot buffer could be removed once it is determined by a qualified biologist that the young have fledged. Typically, the young fledge by August 31st. This date may be earlier than August 31st, or later, and would have to be determined by a qualified biologist.</p> <p>3. If burrowing owls are present in the non-breeding season and must be passively relocated from the project site, passive relocation shall not commence until October 1st and must be completed by February 1st. Passive relocation may only be conducted by a qualified biologist or ornithologist and with approval by CDFW. After passive relocation, the area where owls occurred and its immediate vicinity (500 feet) will be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document that owls are not reoccupying the site.</p> <p>4. Compensation for the loss of burrowing owl habitat shall be based upon the number of owls or pairs of owls located on the</p>	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				construction area during pre-construction surveys following the CDFW's October 17, 1995 Staff Report on Burrowing Owl Mitigation. The areas identified as land retirement areas and enhancement areas shall be used as compensation for the loss of habitat and for relocation of burrowing owls.	
3.4.2	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 wildlife nursery sites?	Less Than Significant		No mitigation measures are required.	
3.4.3	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Potentially Significant Impact	3.4.3	Development applications shall avoid impact to mature trees and natural vegetation to the maximum extent practicable. Impact avoidance measures shall include one or more of the following: 1) Incorporation of existing trees and natural vegetation into development proposals 2) Avoidance of trenching and compaction of the area within tree drip lines through the use of protective fencing during construction, and 3) Compensation for trees removed or otherwise impacted through the planting of replacement trees at a ratio of one to one.	Less Than Significant
<b>3.5 Cultural Resources</b>					
3.5.1	Cause a substantial adverse change in the significance of a historic resource as defined in §15064.5?	Potentially Significant Impact	3.5.1	If a potentially significant historical or archaeological resource is encountered during subsurface construction activities (i.e., trenching, grading), all construction activities within a 100-foot radius of the identified potential resource shall cease until a qualified archaeologist evaluates the item for its significance and records	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>the item on the appropriate State Department of Parks and Recreation (DPR) forms. The archaeologist shall determine whether the item requires further study. If, after the qualified archaeologist conducts appropriate technical analyses, the item is determined to be significant under California Environmental Quality Act, the archaeologist shall recommend feasible mitigation measures, which may include avoidance, preservation in place or other appropriate measure, as outlined in Public Resources Code section 21083.2. Upon the City's approval of the recommended mitigation measures, the project developer shall implement said measures. The developer shall fund the costs of the qualified archaeologist and required analysis, and shall include this mitigation measure in every construction contract to inform contractors of this requirement.</p>	
3.5.2	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Potentially Significant Impact	3.5.1	No additional mitigation measures are required.	Less Than Significant
3.5.3	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Potentially Significant Impact	3.5.3	<p>In the event a fossil or fossil formations are discovered during any subsurface construction activities for the proposed project (i.e., trenching, grading), all excavations within 100 feet of the find shall be temporarily halted until the find is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The paleontologist shall notify the appropriate representative at the City of Turlock, who shall coordinate with the paleontologist as to any necessary investigation of the find. If the find is determined to be significant under CEQA, the City shall require,</p>	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				based on the recommended mitigation measures of the paleontologist, the developer to implement those measures, which may include avoidance, preservation in place, or other appropriate measures, as outlined in Public Resources Code section 21083.2. The developer shall fund the costs of the qualified paleontologist and any required analysis. No additional mitigation measures are required.	
3.5.4	Disturb any human remains, including those interred outside of formal cemeteries?	Less Than Significant		No mitigation measures are required.	
<b>3.6 Geology and Soils</b>					
3.6.1	Exposure of people and structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, ground failure, or landslides.	Less Than Significant		No mitigation measures are required.	
3.6.2	Result in substantial soil erosion or the loss of topsoil.	Less Than Significant		No mitigation measures are required.	
3.6.3	Result in potential hazards due to construction on unstable soils.	Less Than Significant		No mitigation measures are required.	
3.6.4	Result in potential hazards due to construction on expansive soils.	Less Than Significant		No mitigation measures are required.	
<b>3.7 Greenhouse Gas Emissions</b>					
3.7.1	Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	Less Than Significant		No mitigation measures are required.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.7.2	Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.	Less Than Significant		No mitigation measures are required.	
3.7.3	Climate change effects on the project.	Less Than Significant		No mitigation measures are required.	
<b>3.8 Hazards and Hazardous Materials</b>					
3.8.1	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions.	Less Than Significant		No mitigation measures are required.	
3.8.2	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		No mitigation measures are required.	
3.8.3	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.	Potentially Significant	3.8.3a	Prior to issuance of demolition permits for any structures located on the project site, the project applicant shall retain a certified hazardous waste contractor to determine the presence or absence of building materials or equipment that contains hazardous waste, including asbestos, lead-based paint, mercury, PCBs, and CFCs. If such substances are found to be present, the contractor shall properly remove and dispose of these hazardous materials in accordance with federal and State law. The applicant shall submit documentation to the City of Turlock demonstrating that this contractor has been retained as part of the demolition permit application. Upon completion of removal and disposal, the project applicant shall provide documentation to the City of Turlock	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				demonstrating that these activities were successfully completed.	
		Potentially Significant	3.8.3b	Prior to issuance of grading permits, the project applicant shall retain a qualified consultant to perform testing of the project site soils for the presence of residual concentrations of agricultural chemicals and herbicides associated with past usage of the project site for agricultural production and the location of the former railroad track alignment. Soils shall be laboratory tested for organo-chlorine pesticides and arsenic in accordance with California Department of Toxic Substances Control (DTSC) guidelines. If the testing yields concentrations in excess of acceptable limits for residential, school and commercial development, the project applicant shall retain a qualified contractor to perform soil remediation in accordance with DTSC guidelines. The soil remediation activities shall be completed prior to grading activities. The applicant shall submit documentation to the City of Turlock demonstrating that soil testing was performed and any necessary remediation was completed as part of the grading permit application.	Less Than Significant
		Potentially Significant	3.8.3c	Irrigation wells that may be dispersed throughout the project site, and any potential onsite domestic wells and septic systems shall be properly abandoned or destroyed in compliance with applicable regulations of the Stanislaus County Department of Environmental Resources governing water wells and septic systems. Consultation shall occur with the Department of Environmental Resources regarding well and septic system abandonment and inspections.	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				Documentation of wells and septic systems being abandoned or destroyed shall be submitted to the City of Turlock Planning Division prior to construction of proposed uses.	
		Potentially Significant	3.8.3d	The applicant shall consult with TID to determine the location of electric power lines and irrigation pipelines within the project boundaries. The locations shall be delineated on all grading/development plans. Development plans shall provide for unrestricted utility access and prevent easement encroachments that might impair the safe and reliable maintenance and operation of TID facilities; alternatively, the applicant may relocate the facilities with TID's approval. TID shall be afforded the opportunity to review and approve the grading plans. The applicant shall secure a letter indicating approval of the plans from TID. Prior to issuance of grading permits, the applicant shall provide the City of Turlock with a letter of approval from TID indicating that they have reviewed and approved the proposed grading/development plans.	Less Than Significant
3.8.4	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, or within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.	Potentially Significant	3.8.4a	No buildings shall be constructed within Safety Zone 1, the Runway Protection Zone (RPZ). Roads and automobile parking lots are acceptable uses. Landscaping, light fixtures, signs, and other objects must be limited in height so as not to be obstructions to the airport airspace as defined by Part 77 of the Federal Aviation Regulations (FAR).	Less Than Significant
		Potentially Significant	3.8.4b	Development within Safety Zone 2—the Inner Approach/Departure Zone—as defined by the State Handbook should be limited to low-	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				intensity commercial or industrial uses. Specifically, in accordance with Handbook guidance, the usage intensity should be no more than 40 people per acre on average over the 4.9-acre area affected (196 people total) and no more than 80 people in any single 1.0-acre area. The height of all objects must comply with FAR Part 77 criteria.	
3.8.5	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less Than Significant		No mitigation measures are required.	
<b>3.9 Hydrology/Water Quality</b>					
3.9.1	Violate any water quality standards or waste discharge requirements.	Less than Significant		No mitigation measures are required.	
3.9.2	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).			Potential impacts of the proposed project on groundwater supplies are <b>addressed in Section 3.13 Utilities and Service Systems.</b>	
3.9.3	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site.	Less Than Significant		No mitigation measures are required.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.9.4	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	Less Than Significant		No mitigation measures are required.	
3.9.5	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		No mitigation measures are required.	
3.9.6	Otherwise substantially degrade water quality.	Less Than Significant		No mitigation measures are required.	
3.9.7	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.	No Impact		No mitigation measures are necessary.	
3.9.8	Place within a 100-year flood hazard area structures which would impede or redirect flood flows.	No Impact		No mitigation measures are necessary.	
3.9.9	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	No Impact		No mitigation measures are necessary.	
3.9.10	Inundation by seiche, tsunami, or mudflow.	Less Than Significant		No mitigation measures are required.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
<b>3.10 Land Use and Planning</b>					
3.10.1	Physically divide an established community.	Less Than Significant		No mitigation measures are required.	
3.10.2	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	Less Than Significant		No mitigation measures are required.	
3.10.3	Conflict with any applicable habitat conservation plan or natural community conservation plan.	No Impact		No mitigation measures are necessary.	
<b>3.11 Noise</b>					
3.11.1	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	Potentially Significant	3.11.1a	The use of rubberized asphalt or open gap asphalt has been shown to reduce roadway noise levels between 4 and 5 dB. When Golf Road is scheduled to be resurfaced, the road resurfacing should include rubberized asphalt or open gap asphalt from 1st Street to Highway 99.	Less Than Significant
		Potentially Significant	3.11.1b	Based upon the Proposed Project Site Plan, medium and high density residential uses will be located adjacent to Golf Road, Glenwood Avenue and S.R. 99. A sound wall at least 6-feet in height shall be constructed to reduce traffic noise levels at residential areas adjacent to Golf Road and Glenwood Avenue.  If the anticipated S.R. 99 traffic volumes in the Year 2030 (140,000 ADT), as reported in the Turlock General Plan occur, it may not be practical to achieve the exterior noise level	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>standard of 60 dB Ldn. Barriers in excess of 18 feet may be required to achieve the noise level standard of 60 dB Ldn. As a means of complying with the conditionally acceptable standard of 65 dB Ldn, barrier heights would need to be approximately 12-feet in height, while assuming a setback of approximately 250 to 300 feet from the S.R. 99 centerline.</p> <p>Since grading plans and tentative maps have not been completed for the project site, a more detailed analysis of required barrier heights would be required when those plans are available.</p>	
		Potentially Significant	3.11.1c	<p>High Density residential units may also apply the exterior noise level standard of 60 dB Ldn at a common outdoor area such as a club house. In this case, site design shall locate the common outdoor areas away from the roads or shall shield the common outdoor areas with the building facades in order to achieve the noise level standards.</p> <p>Since grading plans and tentative maps have not been completed for the project site, a more detailed analysis of site design would be required when those plans are available.</p>	Less Than Significant
		Potentially Significant	3.11.1d	<p>An analysis of projected future interior traffic noise levels indicate that proposed residential uses with direct exposure to State Route 99 would require window assembly and/ or building façade upgrades at the second floor to comply with the City’s 45 dB Ldn interior noise level standard. In order to achieve compliance with an interior noise level standard of 45 dB Ldn,</p>	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				<p>residences located within 700 feet of the S.R. 99 centerline would require exterior-to-interior noise level reductions ranging from 30 dB to 35 dB. One of the following window assemblies shall be installed:</p> <ul style="list-style-type: none"> <li>▪ A 30 dB exterior to interior noise level reduction may be achieved through the use of STC 35 rated window assemblies for all second floor windows with a view of SR 99.</li> <li>▪ A 35 dB exterior to interior noise level reduction may be achieved through the use of STC 40 to 42 rated window assemblies for all second floor windows with a view of SR 99.</li> </ul> <p>As an alternative to this requirement, a detailed analysis of interior noise levels can be conducted when building plans are available.</p>	
		Potentially Significant	3.11.1e	<p>As an alternative to Mitigation Measure #3.11.1d, a portion of the site could limit residential uses to single-story units which receive shielding from the noise barriers. Therefore, residential uses located within 700 feet of the S.R. 99 centerline could be restricted to single story units, and residential units located beyond 700 feet from the S.R. 99 centerline could include two-story units and would not require upgraded STC rated windows.</p>	Less Than Significant
		Potentially Significant	3.11.1f	<p>During project review, the Planning Director shall make a determination as to whether or not the proposed use would likely generate noise levels that could adversely affect the adjacent residential areas. If it is determined from this</p>	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				review that proposed uses could generate excessive noise levels at noise-sensitive uses, the applicant shall be required to prepare an acoustical analysis to ensure that all appropriate noise control measures are incorporated into the project design so as to mitigate any noise impacts. Such noise control measures include, but are not limited to, use of noise barriers, site-redesign, silencers, partial or complete enclosures of critical equipment, etc.	
		Potentially Significant	3.11.1g	Active recreation areas such as neighborhood parks and school playgrounds should be located as far as possible from residential property lines. Park activities should be limited to the hours of 7:00 a.m. to 10:00 p.m. Noise analyses should be conducted for public works areas which contain noise sources which may exceed the City of Turlock noise level standards.	Less Than Significant
		Potentially Significant	3.11.1h	Construction activities should adhere to the requirements of the City of Turlock with respect to hours of operation. In addition, all equipment shall be fitted with factory equipped mufflers, and in good working order.	Less Than Significant
3.11.2	Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels.	Less Than Significant		No mitigation measures are required.	
3.11.3	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Less Than Significant		No mitigation measures are required.	
3.11.4	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Less Than Significant		No mitigation measures are required.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.11.5	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.	No Impact		No mitigation measures are necessary.	
3.11.6	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.	No Impact		No mitigation measures are necessary.	
<b>3.12 Population and Housing</b>					
3.12.1	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)	Less Than Significant		No mitigation measures are required.	
3.12.2	Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.	Less Than Significant		No mitigation measures are required.	
<b>3.13 Public Services and Utilities</b>					
3.13.1	Increased Demand for Fire Protection Services and Personnel.	Less Than Significant		No mitigation measures are required.	
3.13.2	Increased Demand for Law Enforcement Services.	Less Than Significant		No mitigation measures are required.	
3.13.3	Increased Demand on Public Schools.	Less Than Significant		No mitigation measures are required.	
3.13.4	Increased Demand on Library Services.	Less Than Significant		No mitigation measures are required.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.13.5	Exceed wastewater treatment requirements of the Regional Water Quality Control Board, Central Valley Region.	Less Than Significant		No mitigation measures are required.	
3.13.6	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	Less Than Significant		No mitigation measures are required.	
3.13.7	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	Less Than Significant		No mitigation measures are required.	
3.13.8	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.	Less Than Significant		No mitigation measures are required.	
3.13.9	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		No mitigation measures are required.	
3.13.10	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	Potentially Significant	3.13.10a	Prior to issuance of building permits for any building developed pursuant to the Master Plan, the project applicant shall retain a qualified contractor to perform construction and demolition debris recycling. Following the completion of construction activities, the project applicant shall provide documentation to the satisfaction of the City of Turlock demonstrating	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				that construction and demolition debris was recycled.	
		Potentially Significant	3.13.10b	Prior to issuance of final certificate of occupancy for each multi-family residential and commercial building, the project applicant shall install onsite recycling collection facilities. Such facilities shall be provided in centralized locations within enclosed facilities. Signage shall clearly identify accepted materials, and recycling collection vessels (i.e., dumpsters, receptacles, bins, totes, etc.) shall be distinctly different in appearance from solid waste collection vessels.	Less Than Significant
3.13.11	Comply with federal, state, and local statutes and regulations related to solid waste.	Less Than Significant		No mitigation measures are required.	
3.13.12	Result in the inefficient, wasteful, or unnecessary consumption of energy?	Less Than Significant		No mitigation measures are required.	
<b>3.14 Recreation</b>					
3.14.1	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		No mitigation measures are required.	
3.14.2	Does the project include recreation facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	Less Than Significant		No mitigation measures are required.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
<b>3.15 Transportation/Traffic</b>					
3.15.1	<p>Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.</p> <p>Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?</p>	Potentially Significant	3.15.1a	<p><b>Existing Plus Project Conditions</b></p> <p><b>Lander Avenue/E. Glenwood Avenue.</b> The proposed project’s mitigation measure is to construct the recommended improvements, as noted below. The timing of the improvement’s construction will be determined by a separate traffic analysis prepared as specific development proposals are received for individual projects within the Morgan Ranch Master Plan. When a traffic analysis determines the improvement is needed to support a specific development proposal, the improvement must be constructed.</p> <ul style="list-style-type: none"> <li>▪ Widen the northbound approach (Lander Avenue) to provide an exclusive right turn lane. With this improvement the northbound approach includes one left turn only lane, two through lanes, and one right turn only lane.</li> </ul>	Significant and Unavoidable
		Potentially Significant	3.15.1b	<p><b>Golf Road/Linwood Avenue.</b> The proposed project’s mitigation measure is to construct the recommended improvement, as noted below. The timing of the improvement’s construction will be determined by a separate traffic analysis prepared as specific development proposals are received for individual projects within the Morgan Ranch Master Plan. When a traffic analysis determines the improvement is needed to support a specific development proposal, the improvement must be constructed.</p> <ul style="list-style-type: none"> <li>▪ Signalize the intersection.</li> </ul>	Significant and Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Potentially Significant	3.15.1c	<p><b>Golden State Boulevard and Berkeley Avenue/Golf Road; First Street and Golf Road.</b> The proposed project’s mitigation measure is to construct the recommended improvement, as noted below or similar improvements as determined by the City and/or Stanislaus County. The timing of the improvement’s construction will be determined by a separate traffic analysis prepared as specific development proposals are received for individual projects within the Morgan Ranch Master Plan. When a traffic analysis determines the improvement is needed to support a specific development proposal, the improvement must be constructed.</p> <p><b><u>Golden State Boulevard and Berkeley Avenue/Golf Road</u></b></p> <ul style="list-style-type: none"> <li>▪ Signalize the intersection;</li> <li>▪ Widen the eastbound and westbound approach (Berkeley Avenue) to provide an exclusive left turn lane. With this improvement, both approaches includes one left turn lane, one through lane and a right turn lane; and</li> <li>▪ Realign Golf Road and Paulson Road in order to provide adequate spacing between these intersections and the Golden State Boulevard intersection.</li> </ul> <p><b><u>First Street/Golf Road</u></b></p> <ul style="list-style-type: none"> <li>▪ Signalize and realign the intersection.</li> </ul>	Significant and Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				These intersections are in the jurisdiction of Stanislaus County.	
		Potentially Significant	3.15.1d	<p><b>Glenwood Avenue, from Lander Avenue to Morgan Ranch Arterial.</b> The proposed project’s mitigation measure is to construct the recommended improvement, noted below. The timing of the improvement’s construction will be determined by a separate traffic analysis prepared as specific development proposals are received for individual projects within the Morgan Ranch Master Plan. When a traffic analysis determines the improvement is needed to support a specific development proposal, the improvement must be constructed.</p> <p><b>Policy 5.2-s: Trigger for improvements.</b> Require improvements to be constructed when LOS is projected to drop below LOS C (on an average daily trips basis).</p>	Significant and Unavoidable
		Potentially Significant	3.15.1e	<p><b>Cumulative General Plan Buildout Conditions</b></p> <p>The project shall pay appropriate development impact fees towards General Plan circulation system improvements.</p>	Significant and Unavoidable
3.15.2	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	Potentially Significant	3.8.4a and 3.8.4b	Implement Mitigation Measures #8.8.4a and #3.8.4b	Less Than Significant
3.15.3	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).	Less Than Significant		No mitigation measures are required.	

<b>Impact #</b>	<b>Impact</b>	<b>Significance</b>	<b>Mitigation #</b>	<b>Mitigation Measure</b>	<b>Significance After Mitigation</b>
3.15.4	Result in inadequate emergency access.	Less Than Significant		No mitigation measures are required.	
3.15.5	Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks).	Less Than Significant		No mitigation measures are required.	

**CHAPTER ONE**

**INTRODUCTION**

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## CHAPTER ONE – INTRODUCTION

### 1.1 Overview of the CEQA Process

This Draft Environmental Impact Report (Draft EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with implementation of the Morgan Ranch Master Plan (State Clearinghouse No. 2012022039). This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, et seq.). This Draft EIR is intended to serve as an information document for the public agency decision makers and the public regarding the proposed project.

#### 1.1.1 OVERVIEW

The proposed project for which this Draft EIR has been prepared is for the adoption and implementation of the Morgan Ranch Master Plan. The Morgan Ranch Master Plan would develop a mixture of single and multifamily residential, community commercial, office, elementary school, park, and detention basin uses on the 170 acre site. A complete project description is provided in Chapter 2, Project Description of this Draft EIR.

#### 1.1.2 TYPE AND PURPOSE OF THIS DRAFT EIR

According to Section 15121(a) of the CEQA Guidelines, the purpose of an EIR is to:

Inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

Given the long-term nature of the proposed project and the permitting, planning, and development actions that are related both geographically and as logical parts in the chain of contemplated actions to implement the proposed project, this document has been prepared as a Program EIR pursuant to Section 15168.

#### ***Program EIR***

A Program EIR examines the total scope of environmental effects that would occur as a result of buildout of the entire Master Plan area. By examining the full scope of the proposed project and subsequent applications and approvals at this early stage of planning, the Program EIR will provide a full disclosure of the environmental impacts that may occur throughout the project site, together with an analysis of the site-specific and cumulative environmental impacts that will occur throughout the buildout of the proposed project.

This Draft EIR fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as those of a Project EIR, Program EIRs are typically more conceptual and may contain a more general discussion of impacts, alternatives, and mitigation measures than a Project EIR. As provided in Section 15168 of the State CEQA

Guidelines, a Program EIR may be prepared on a series of actions that can be characterized as one large project. Use of a Program EIR provides the City of Turlock (as lead agency) the opportunity to consider broad policy alternatives and program-wide mitigation measures and provides the City with greater flexibility to address project-specific and cumulative environmental impacts on a comprehensive basis.

Once a Program EIR has been prepared, subsequent activities within the program must be evaluated to determine whether additional CEQA documentation needs to be prepared. However, if the Program EIR addresses the program's effects as specifically and comprehensively as possible, many subsequent activities could be found to be within the Program EIR scope and additional environmental documents may not be required (CEQA Guidelines Section 15168[c]). When a Program EIR is relied on for a subsequent activity, the lead agency must incorporate feasible mitigation measures and alternatives developed in the Program EIR into the subsequent activities (CEQA Guidelines Section 15168[c][3]). If a subsequent activity would have effects not within the scope of the Program EIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or an EIR. In this case, the Program EIR is still valuable as the first-tier environmental analysis. The CEQA Guidelines (Section 15168[h]) encourage the use of Program EIRs, citing five advantages:

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

***Purpose***

The purpose of this Draft EIR is to analyze and evaluate the environmental impacts of the proposed project to the degree of specificity appropriate, in accordance with CEQA Guidelines Section 15146. This document addresses the potentially significant adverse environmental impacts that may be associated with the planning, construction, or operation of the project. It also identifies appropriate and feasible mitigation measures and alternatives that may be adopted to significantly reduce or avoid these impacts.

CEQA requires that an EIR contain, at a minimum, certain specific elements. These elements are contained in this Draft EIR and include:

- Table of Contents;
- Introduction;
- Executive Summary;

- Project Description;
- Environmental Setting, Significant Environmental Impacts, and Mitigation Measures;
- Cumulative Impacts;
- Significant Unavoidable Adverse Impacts;
- Alternatives to the Proposed Project;
- Growth-Inducing Impacts;
- Effects Found Not To Be Significant; and
- Areas of Known Controversy.

### **1.1.3 LEAD AGENCY DETERMINATION**

The City of Turlock is designated as the lead agency for the project. CEQA Guidelines Section 15367 defines the lead agency as, "...the public agency, which has the principal responsibility for carrying out or approving a project." Other public agencies may use this Draft EIR in the decision-making or permit process and consider the information in this Draft EIR along with other information that may be presented during the CEQA process.

This Draft EIR was prepared by Quad Knopf, Inc., an environmental consultant under contract to the City of Turlock. Prior to public review, the Draft EIR was extensively reviewed and evaluated by the City of Turlock. This Draft EIR reflects the independent judgment and analysis of the City of Turlock as required by CEQA. Lists of organizations and persons consulted and the report preparation personnel are provided in Chapter 8 of this Draft EIR.

## **1.2 Scope of the EIR**

This Draft EIR addresses the potential environmental effects of the proposed project. The City of Turlock issued a Notice of Preparation (NOP) for the proposed project on February 14, 2012, which circulated between February 14, 2012 and March 14, 2012 for the statutory 30-day public review period. The scope of this Draft EIR includes the potential environmental impacts identified in the NOP and issues raised by agencies in the public response to the NOP. The NOP is contained in Appendix A of this Draft EIR.

Nine comment letters were received in response to the NOP. They are listed in Table 1-1 and provided in Appendix A of this Draft EIR.

### **1.2.1 SCOPING MEETING**

Pursuant to CEQA Guidelines Section 15082(c)(1), the City of Turlock held a scoping meeting for the proposed project on Thursday, February 23, 2012 at the Turlock City Hall Council Chambers.

**Table 1-1  
NOP Comment Letters**

<b>Status</b>	<b>Affiliation</b>	<b>Signatory</b>	<b>Date</b>
<b>Public Agencies</b>	California Department of Transportation Division of Aeronautics	Phillip Crimmins, Aviation Environmental Specialist	March 12, 2012
	California Department of Transportation, District 10	Joshua Swearingen, Transportation Planner for Tom Dumas, Chief Office of Metropolitan Planning	March 8, 2012
	Stanislaus County Environmental Review Committee	Raul Mendez, Senior Management Consultant	March 9, 2012
	Turlock Irrigation District	Todd Troglin, Supervising Engineering Technician, Civil	March 2, 2012
	Native American Heritage Commission	Katy Sanchez, Program Analyst	February 23, 2012
<b>Private Parties</b>		Nanci Pena	March 8, 2012
		William and Jenae Worsham	March 8, 2012
		Lois Marsh	March 8, 2012
		Carl and Shirley Grubb	March 8, 2012

Source: City of Turlock, Responses to NOP for the Morgan Ranch Master Plan

## 1.2.2 ENVIRONMENTAL ISSUES DETERMINED NOT TO BE SIGNIFICANT

The NOP identified one topical area that was determined not to be significant. An explanation of why this area is determined not to be significant is provided in Chapter 7, Effects Found Not To Be Significant. The following is the topical area:

- Mineral Resources

Certain subjects within various topical areas were determined not to be significant. Other potentially significant issues are analyzed in these topical areas; however the following issues are not analyzed:

- Scenic Vistas (Chapter 3, Section 3.1 Aesthetics);
- State Scenic Highways (Chapter 3, Section 3.1 Aesthetics);
- Conflicts with Agricultural Zoning or Williamson Act Contract (Chapter 3, Section 3.2 Agricultural and Forestry Resources);

- Conflicts with Forest Zoning (Chapter 3, Section 3.2 Agricultural and Forestry Resources);
- Conversion of Forest Land to Non-Forest Use (Chapter 3, Section 3.2 Agricultural and Forestry Resources);
- Riparian Habitat/Sensitive Natural Communities (Chapter 3, Section 3.4 Biological Resources);
- Wetlands (Chapter 3, Section 3.4 Biological Resources);
- Conservation Plans (Chapter 3, Section 3.4 Biological Resources);
- Septic and Alternative Wastewater Disposal Systems (Chapter 3, Section 3.6, Geology, Soils, and Seismicity);
- Wildland Fires (Chapter 3, Section 3.8 Hazards and Hazardous Materials);
- 100-Year Flood Hazard Areas (Chapter 3, Section 3.9 Hydrology and Water Quality);
- Flooding and Dam or Levee Failure (Chapter 3, Section 3.9 Hydrology and Water Quality);
- Seiche, Tsunami, or Mudflow Hazards (Chapter 3, Section 3.9 Hydrology and Water Quality); and
- Conservation Plans (Chapter 3, Section 3.10 Land Use and Planning).

### **1.2.3 POTENTIALLY SIGNIFICANT ENVIRONMENTAL ISSUES**

The NOP found that the following topical areas may contain potentially significant environmental issues that will require further analysis in the EIR. These sections are as follows:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology/Soils
- Greenhouse Gas Emissions
- Hazards/Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Noise
- Population/ Housing
- Public Services and Utilities
- Recreation
- Transportation/Traffic

### 1.3 Organization of the EIR

This Draft EIR is organized into the following main chapters:

**Executive Summary.** This chapter includes a summary of the proposed project and alternatives to be addressed in the Draft EIR. A brief description of the areas of controversy and issues to be resolved, and overview of the Mitigation Monitoring and Reporting Program, in addition to a table that summarizes the impacts, mitigation measures, and level of significance after mitigation, are also included in this section.

**Chapter 1: Introduction.** This chapter provides an introduction and overview describing the purpose of this Draft EIR, its scope and components, and its review and certification process.

**Chapter 2: Project Description.** This chapter includes a detailed description of the proposed project, including its location, site, and project characteristics. A discussion of the project objectives, intended uses of the Draft EIR, responsible agencies, and approvals that are needed for the proposed project are also provided.

**Chapter 3: Environmental Impact Analysis.** This chapter analyzes the environmental impacts of the proposed project. Impacts are organized into major topic areas. Each topic area includes a description of the environmental and regulatory setting, methodology, significance criteria, impacts, mitigation measures, and significance after mitigation. The specific environmental topics that are addressed within Chapter 3 are as follows:

**Section 3.1 – Aesthetics:** Addresses the potential visual impacts of development intensification and the overall increase in illumination produced by the project.

**Section 3.2 - Agricultural Resources:** Addresses the potential conversion of Important Farmland to non-agricultural use.

**Section 3.3 - Air Quality:** Addresses the potential air quality impacts associated with project implementation, as well as consistency with the San Joaquin Valley Air Pollution Control District's air quality management plans.

**Section 3.4 - Biological Resources:** Addresses the project's potential impacts on habitat, vegetation, and wildlife; the potential degradation or elimination of important habitat; and impacts on listed, proposed, and candidate threatened and endangered species.

**Section 3.5 - Cultural Resources:** Addresses the potential impacts of project development on known historical resources and potential archaeological and paleontological resources.

**Section 3.6 - Geology and Soils:** Addresses the potential impacts the project may have on soils and assesses the effects of project development in relation to geologic and seismic conditions.

**Section 3.7 – Greenhouse Gas Emissions:** Addresses the project's potential to generate greenhouse gas emissions or conflict with a greenhouse gas reduction plan.

**Section 3.8 - Hazards and Hazardous Materials:** Addresses the potential for the presence of hazardous materials or conditions on the project site and in the project area that may have the potential to impact human health.

**Section 3.9 - Hydrology and Water Quality:** Addresses the potential impacts of the project on local hydrological conditions, including drainage areas, and changes in the flow rates.

**Section 3.10 - Land Use and Planning:** Addresses the potential land use impacts associated with division of an established community and consistency with the City of Turlock General Plan, Turlock Municipal Code, Stanislaus County Airport Land Use Commission Plan (2004).

**Section 3.11 - Noise:** Addresses the potential noise impacts during construction and at project buildout from mobile and stationary sources. The section also addresses the impact of noise generation on neighboring uses.

**Section 3.12 – Population and Housing:** Addresses the potential impacts of the project on population growth and displacement of housing and people.

**Section 3.13 - Public Services and Utilities:** Addresses the potential impacts upon service providers, including fire protection, law enforcement, schools, and libraries.

**Section 3.14 – Recreation:** Addresses the potential impacts on existing neighborhood and regional parks and the construction or expansion of recreational facilities.

**Section 3.15 – Transportation and Traffic:** Addresses the potential impacts on the local and regional roadway system, public transportation, bicycle, and pedestrian access.

**Chapter 4: Cumulative Effects:** This chapter analyzes the proposed project’s environmental impacts in combination with the impact of other, past, present, and probable future projects.

**Chapter 5: Alternatives to the Proposed Project:** This chapter compares the impacts of the proposed project with three land-use project alternatives: the No Project Alternative, a Reduced Intensity Alternative, and an Increased Density Alternative. An environmentally superior alternative is identified. In addition, alternatives initially considered but rejected from further consideration are discussed.

**Chapter 6: Other CEQA Considerations.** This chapter provides a summary of significant unavoidable environmental impacts, growth inducement, and significant irreversible changes. In addition, the proposed project’s energy demand is discussed.

**Chapter 7: Effects Found Not To Be Significant.** This chapter contains analysis of the topical sections not addressed in Section 3.

**Chapter 8: List of Preparers and Persons Consulted.** This chapter contains a full list of persons and organizations that were consulted during the preparation of this Draft EIR, as well as the authors who assisted in the preparation of the Draft EIR, by name and affiliation.

**Chapter 9: References.** This chapter contains a full list of references that were used in the preparation of this Draft EIR.

**Appendices:** This section includes all notices and other procedural documents pertinent to the Draft EIR, as well as all technical material prepared to support the analysis.

#### **1.4 Documents Incorporated by Reference**

As permitted by CEQA Guidelines Section 15150, this Draft EIR has referenced several technical studies, analyses, and previously certified environmental documentation. Information from the documents, which have been incorporated by reference, has been briefly summarized in the appropriate section(s). The relationship between the incorporated part of the referenced document and the Draft EIR has also been described. The documents and other sources that have been used in the preparation of this Draft EIR include, but are not limited to:

- Morgan Ranch Draft Master Plan, April 2014;
- Existing Conditions and Key Issues: Turlock General Plan Report #1;
- City of Turlock General Plan, adopted September 2012;
- City of Turlock General Plan EIR, certified August 2012; and
- City of Turlock Municipal Code;

These documents are specifically identified in Section 9, References, of this Draft EIR. In accordance with CEQA Guidelines Section 15150(b), the Morgan Ranch Master Plan, General Plan, the Municipal Code, and the referenced documents and other sources used in the preparation of the Draft EIR are available for review at the City of Turlock at the address shown in Section 1.6, below.

#### **1.5 Documents Prepared for the Project**

The following technical studies and analyses were prepared for the proposed project:

- Land Evaluation and Site Assessment Model, prepared by Quad Knopf, Inc.;
- Air Quality and Greenhouse Gas Analysis, prepared by Quad Knopf, Inc.;
- Biological Reconnaissance-Level Survey, prepared by Quad Knopf, Inc.;
- Cultural Records Search and Native American Consultations, prepared by Quad Knopf, Inc.;
- Water Supply Assessment, prepared by Quad Knopf, Inc.;
- Noise Assessment, prepared by j.c. Brennan & Associates; and
- Traffic Impact Study, prepared by Omni-Means.

#### **1.6 Review of the Draft EIR**

Upon completion of the Draft EIR, the City of Turlock filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161). Concurrent with the NOC, this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested

parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3).

During the public review period, the Draft EIR, including the technical appendices, is available for review at the City of Turlock. The address for each location is provided below:

City of Turlock	Stanislaus County Public Library – Turlock
Development Services Department,	Branch Library
Planning Division	550 Minaret Avenue
156 S. Broadway, Suite 120	Turlock, CA 95380
Turlock, CA 95380	Hours:
Hours:	Monday – Wednesday: 10:00 a.m. to 9:00 p.m.
Monday – Friday: 1:00 p.m. to 5 p.m.	Thursday: 10:00 a.m. to 5:00 p.m.
Friday: Closed	Friday: Closed
	Saturday: 10:00 a.m. to 5:00 p.m.
	Sunday: Closed

The Draft EIR is also available electronically on the City of Turlock’s website:

<http://www.ci.turlock.ca.us/index.asp>

Agencies, organizations, and interested parties have the opportunity to comment on the Draft EIR during the 45-day public review period. Written comments on this Draft EIR should be addressed to:

Katie Quintero, Associate Planner  
City of Turlock Development Services Department, Planning Division  
156 S. Broadway, Suite 120  
Turlock, CA 95380-5454  
Phone: (209) 668-5542 x 2215  
Fax: (209) 668-5107  
Email: [kquintero@turlock.ca.us](mailto:kquintero@turlock.ca.us).

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to all significant environmental issues raised will be prepared and made available for review by the commenting agencies at least 10 days prior to the public hearing before the City of Turlock on the project, at which the certification of the Final EIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision makers for the project.

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**CHAPTER TWO**  
**PROJECT DESCRIPTION**

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## CHAPTER TWO – PROJECT DESCRIPTION

This Program Environmental Impact Report (EIR) analyzes the potential environmental effects of the proposed Morgan Ranch Master Plan (project) in Turlock, California.

### 2.1 Project Location and Setting

#### 2.1.1 LOCATION

The project is located in the City of Turlock in Stanislaus County, California (Figure 2-1). The project site is in the vicinity of the Lander Avenue/State Route 99 (SR 99) interchange and bounded by Lander Ave. on the West, Glenwood Ave. on the north, Golf Road on the east, and SR 99 on the south (Figure 2-2). The project site is located on the Turlock, California, United States Geological Survey 7.5-minute topographic quadrangle map, Township 5 South, Range 10 East, Section 26 (Latitude 37°28'18" North, Longitude 120°50'15"West) (Figure 2-3).

The project site is identified by the Stanislaus County Assessor’s office with the Assessor’s Parcel Numbers (APNs) shown in Table 2-1 (Figure 2-4).

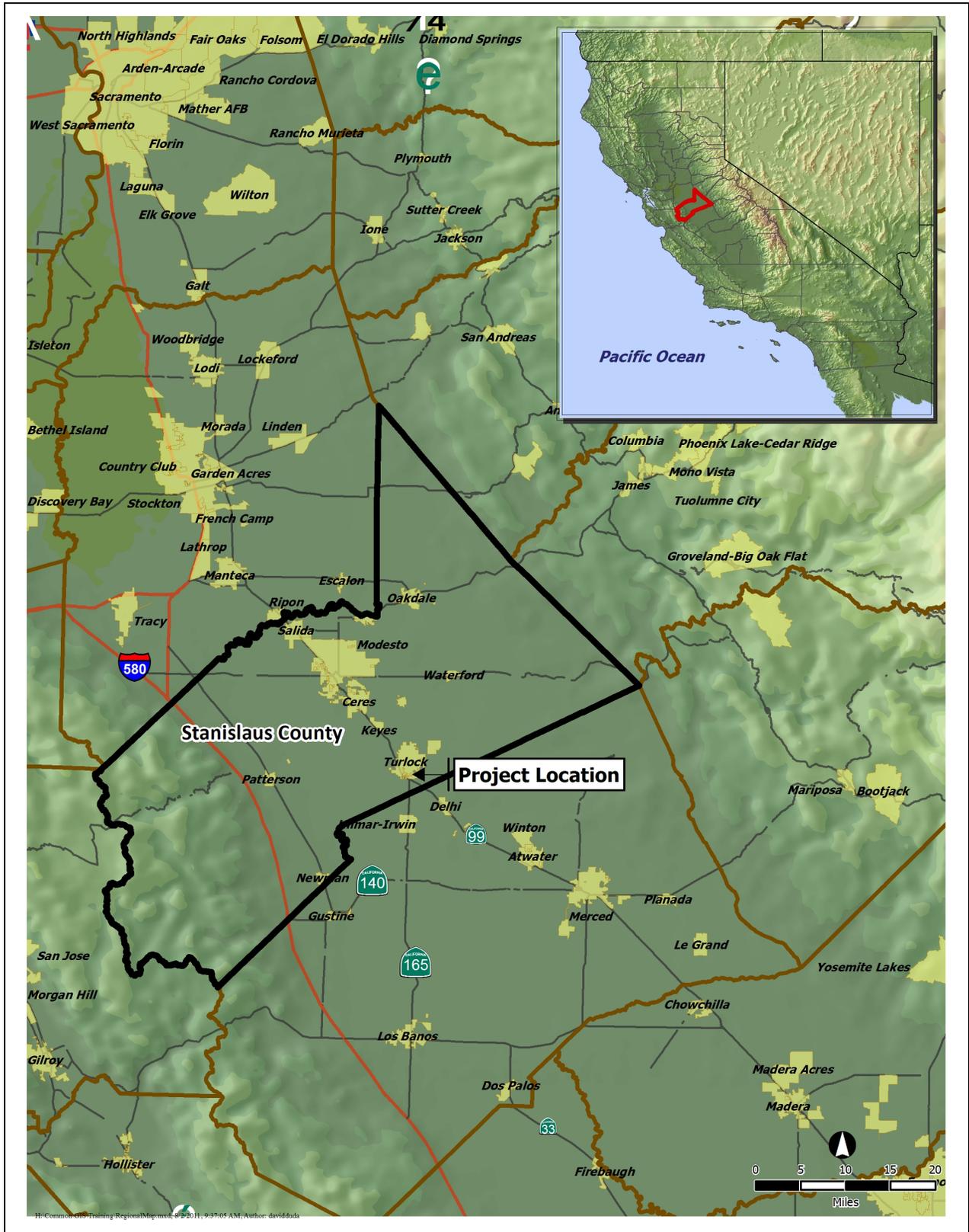
**Table 2-1  
Assessor Parcel Numbers (APNs)**

044-023-005	044-025-003	044-028-010
044-023-006	044-025-006	044-028-013
044-023-018	044-025-007	044-028-014
044-023-031	044-025-008	044-065-001
044-023-032	044-025-010	044-065-002
044-023-035	044-025-016	044-065-003
044-023-037	044-025-017	044-065-004
044-023-038	044-028-007	044-065-005

Source: City of Turlock, Morgan Ranch Master Plan, 2012

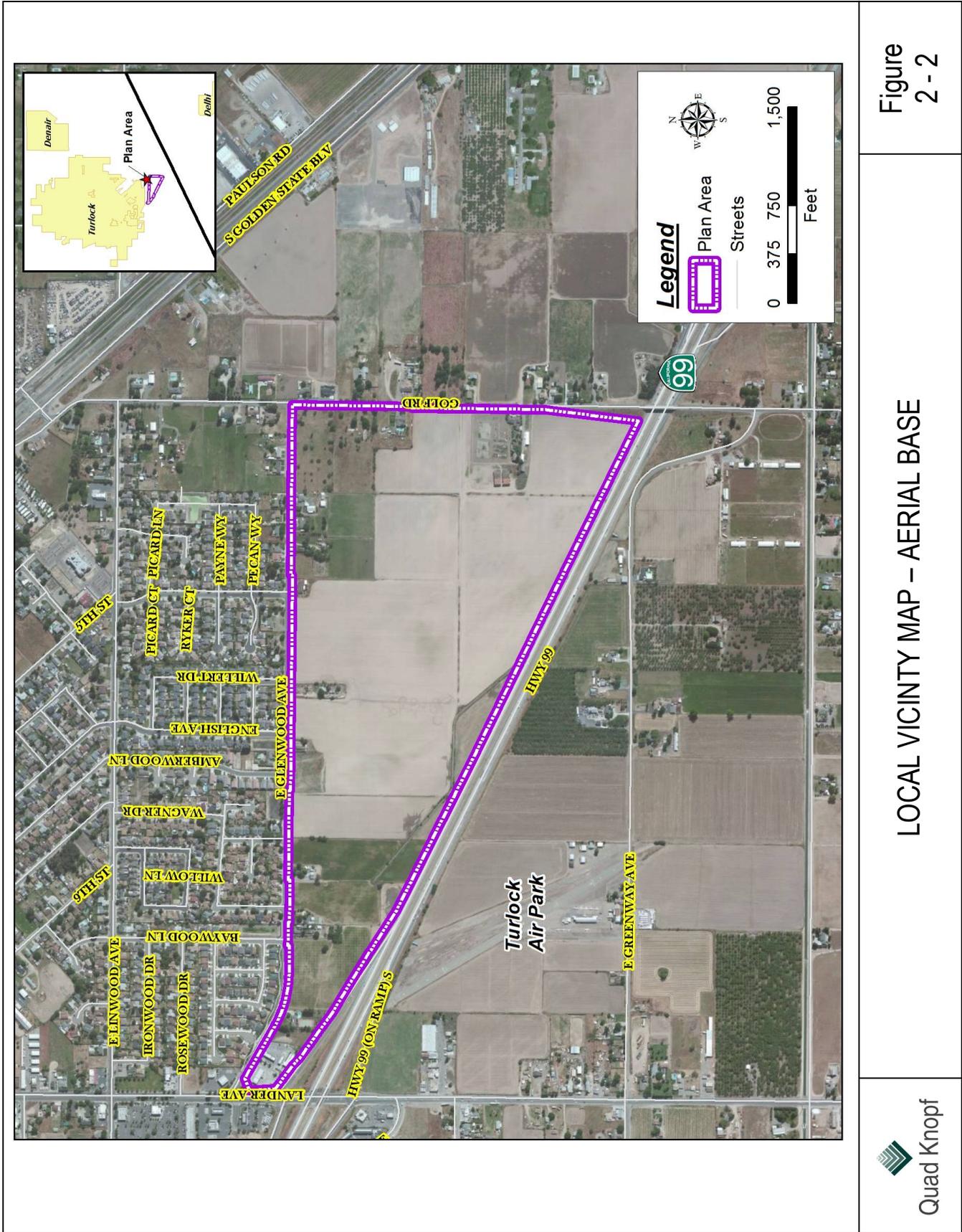
#### 2.1.2 EXISTING CONDITIONS

There are currently agricultural, residential, and commercial uses within the project area (Figure 2-5). Some of the agricultural land is fallow, some has been used for row crops, and one area has an orchard. Within the project area, there are two occupied single-family residences fronting on Golf Road. There are ten, occupied single-family residences and one occupied mobile home fronting Glenwood Avenue. The residences are set back from the roadway in rural residential-type configurations. Most have detached garages, sheds, or barns. One has a tennis court, and two have swimming pools.



REGIONAL MAP

Figure 2 - 1



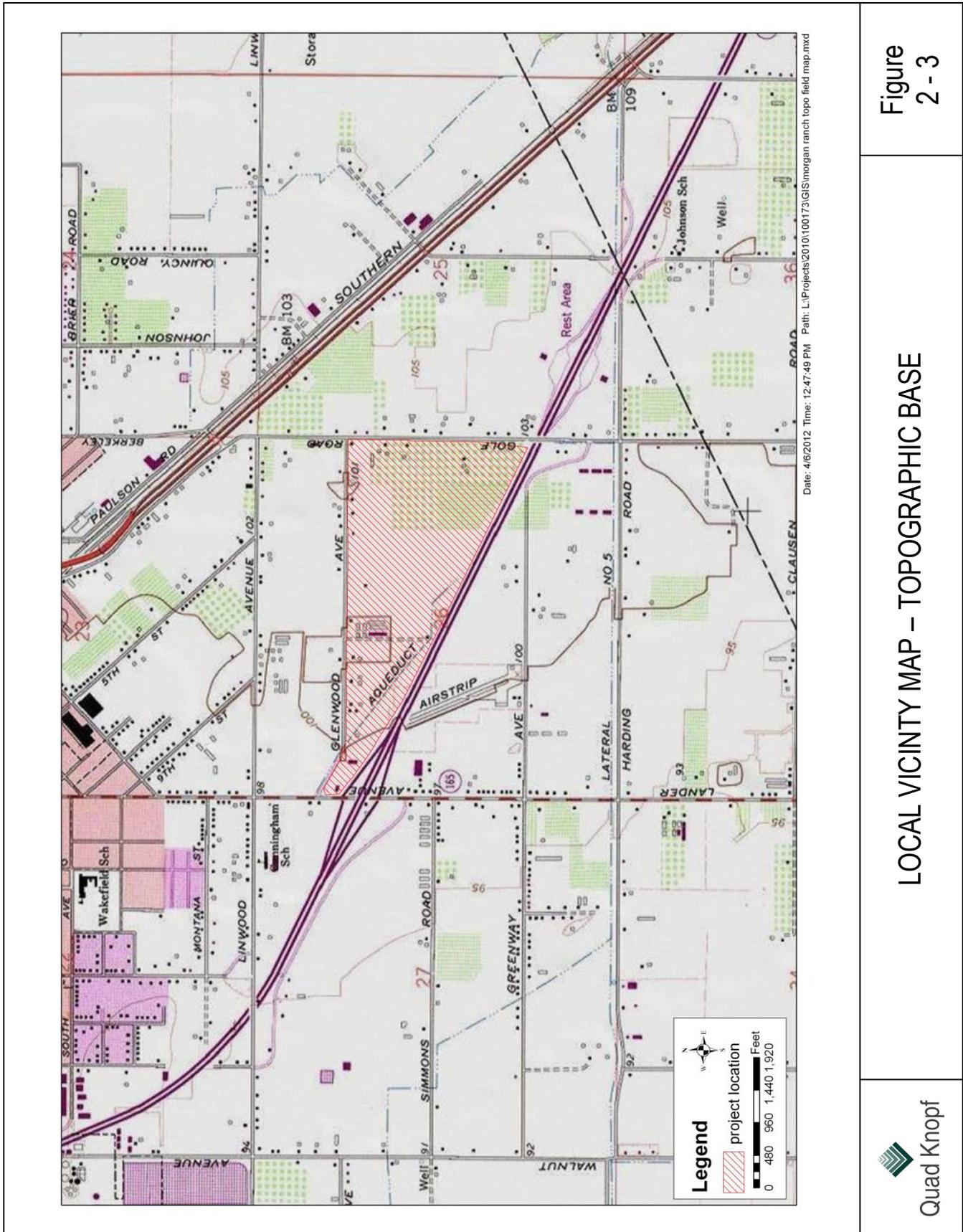


Figure 2-3

LOCAL VICINITY MAP – TOPOGRAPHIC BASE





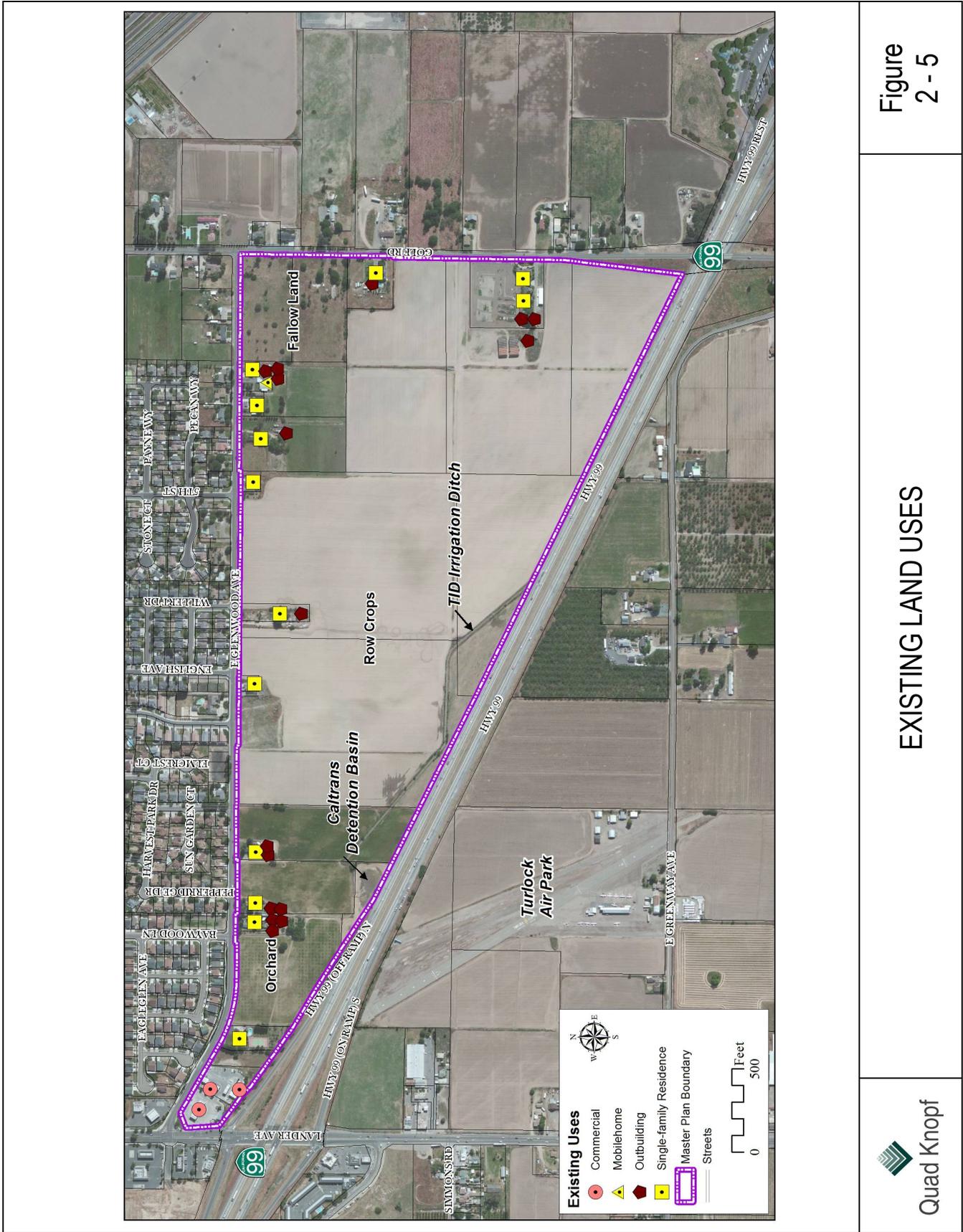


Figure 2 - 5

EXISTING LAND USES



At the southeast corner of Lander Avenue and Glenwood Avenue is the existing, operating Lander Mini Mart with a Chevron gas station with 10 pumps. Directly east of the Mini Mart is the existing, operating Fast Track Car Wash, which has five self-service vehicle washing bays, one automatic vehicle washing bay, and self-service vacuums for interior vehicle cleaning.

There is an open ditch running roughly parallel to SR 99. Another underground irrigation pipeline runs north/south about 500 feet west of Golf Road. This pipeline serves agricultural parcels north of the project area on the northwest corner of Golf Road and Glenwood Avenue. There are above ground electrical power lines running along Glenwood Avenue on the south side of the street. There is a small drainage basin within the project area that is owned by Caltrans and is used for drainage run-off coming from the highway right-of-way.

Photographs of the project site are provided in Photoplate 1.

***Existing Circulation***

There are no public streets or roadways in the interior of the project area. Golf Road, Glenwood Avenue, and Lander Avenue surround the project area.

SR 99 is located south of the project area and is a four-lane divided highway oriented roughly northwest to southeast. SR 99 connects the City of Turlock with the cities of Modesto, Stockton, and Sacramento to the north, and with the cities of Merced, Fresno, and Bakersfield to the south. There is a diamond interchange at Lander Avenue directly southwest of the project area, with the highway crossing over Lander Avenue, and the entrance and exit ramps staying at grade.

Lander Avenue is a four-lane divided arterial roadway running north-south. Lander Avenue connects SR 99 with downtown Turlock. The intersections of Lander Avenue/southbound highway ramps, Lander Avenue/northbound highway ramps, and Lander Avenue/Glenwood Avenue are all signalized. Lander Avenue is built out curb to curb with a median and has sidewalks and landscaping on both sides. Lander Avenue is designated as State Route 165 (SR 165) south of SR 99, but is not designated as a highway north of its entrance/exit ramps.

Glenwood Avenue is a two-lane local street running east-west that currently acts as a collector street between Lander Avenue and Golf Road. Between Lander Avenue and Golf Road there are seven three-way intersections with Glenwood Avenue. All of the intersections are one-way stop intersections with Glenwood Avenue being the through movement. In front of the commercial uses near Lander Avenue, Glenwood Avenue is built curb to curb with sidewalk and landscaping on both sides. East of this Glenwood Avenue has curb/gutter only on the north side of the street from Lander Avenue to just east of Willert Drive. East of Willert Drive the sidewalk on the north side of Glenwood Avenue is intermittent. There are above ground electrical power lines running along Glenwood Avenue on the south side of the street.

	<p>North view of project site.</p>		<p>West view of project site.</p>			<p>View looking southwest at project site from the intersection of East Glenwood Drive and Golf Road.</p>		<p>PHOTOPLATE</p>	<p>1</p>
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Golf Road is a two-lane undivided arterial roadway running north-south. Golf Road connects to the eastern part of Turlock to the north, and to the Turlock Golf and Country Club to the south approximately 1.5 miles south of the project area. Along the project area, Golf Road has no curb, gutter, sidewalks, or landscaping. The roadway is elevated to pass over SR 99 at the southwest corner of the project area. The east right-of-way line is coterminous with the current Turlock city limits line.

***Existing Utilities***

**SEWER COLLECTION AND DISPOSAL**

There are 8-inch sewer lines in the portions of Glenwood Avenue where there are residences fronting the street. These lines are to service existing residences only. The nearest sewer trunk line is a 24-inch line in Linwood Avenue, which runs east-west approximately ¼ mile north of the Plan Area. That sewer trunk line currently terminates approximately 700 feet west of the Linwood Avenue / Golf Road intersection.

**DOMESTIC WATER**

There is a 12-inch water line in Lander Avenue. There is a 10-inch water line in Glenwood Avenue from Lander Avenue to approximately 400 feet east of 5th Street. There are fire hydrants on the north side of Glenwood Avenue from Lander Avenue to 5th Street near each street intersection.

**STORM DRAINAGE**

Storm drainage facilities are maintained by the City of Turlock. The gas station site drains to the existing storm drainage facilities in Lander Avenue. The north side of Glenwood Avenue drains to drop inlets that carry stormwater to existing basins located in the existing neighborhoods north of the project area. None of the other portions of the project area have existing drainage infrastructure.

**IRRIGATION WATER**

The Turlock Irrigation District (TID) provides irrigation water to the region through a system of open ditches, pipelines, and pumps. There are two irrigation lines that currently run through the site. District 34A, known as the Casey, runs south to north from under SR 99 and continues in a northwesterly direction until eventually crossing under Glenwood Avenue. The pipeline continues from there to serve other downstream parcels. Within the Plan Area, the facility is comprised of 42-inch diameter cast-in-place pipe and an open ditch.

District 247B, known as the Goldberry-Conyers, runs south to north from under SR 99 for approximately 400 feet before turning east to continue for about 350 feet. From there, the pipeline runs northeasterly for roughly 400 feet before turning north to cross under Glenwood Avenue. Within the project area, the facility is comprised of a 36-inch diameter cast-in-place pipe and appurtenances.

TID also operates a drainage pump and well known as Pump 112 approximately 600 feet west of Golf Road, on the south side of Glenwood Avenue. The pump discharges into a structure box located to the east on the Goldberry-Conyers pipeline, for the purpose of controlling groundwater elevations in the area.

## **DRY UTILITIES**

Electricity service in Turlock is provided by the TID. There are existing aerial power lines along the south side of Glenwood Avenue and along the west side of Golf Road.

Natural gas is provided by Pacific Gas & Electric (PG&E). There is a 6-inch gas main in Lander Avenue. There are 3-inch gas mains in Glenwood Avenue and in Golf Road.

AT&T has existing underground facilities starting south of SR 99 along Golf Road and continuing briefly north until converting to overhead lines. The aerial facilities continue north on Golf Road and turn westward along the south side of Glenwood Avenue before going underground just east of 5th Street on Glenwood Avenue. The underground line continues west on Glenwood Avenue, turning to continue north and south along Lander Avenue.

Charter Communication has existing underground cable located on the north side of Glenwood Avenue running just behind the sidewalk from Lander Avenue to Golf Road. There is also existing aerial cable on the electrical poles located on the south side of Glendale Avenue from Lander Avenue to Golf Road.

### **2.1.3 SURROUNDING LAND USES**

Representative photos of the surrounding land uses are provided in Photoplate 2.

#### ***West***

The western boundary of the project area is Lander Avenue. On the west side of Lander Avenue is an existing, operating fast food restaurant with a drive-thru and the gas station with mini mart and automatic car wash.

#### ***North***

Glenwood Avenue is the northern boundary of the project area. There is an existing, operating gas station with a mini mart on the northeast corner of Glenwood Avenue and Lander Avenue. There are approximately 40 occupied single-family residences along the north side of Glenwood Avenue; some homes have direct access to Glenwood Avenue, some are side-facing on Glenwood Avenue, and some are rear-facing with a block wall along the boundary. At the northwest corner of Glenwood Avenue and Golf Road are three rural residential lots, each with occupied rural residential homes and various outbuildings.



View looking northeast from project site near intersection of East Glenwood Drive/Greenhills Drive



Representative example of Single Family Residential neighborhood adjacent to East Glenwood Drive near the project site



View looking northwest from project site near the intersection of East Glenwood Drive/Greenhills Drive



View looking south from project site near the intersection of East Glenwood Drive/Golf Road. Example rural residential homes located south of the project site along Golf Road.



PHOTOPLATE

**East**

Golf Road is the eastern boundary of the project area. The east right-of-way line of Golf Road is the current City limits, so properties on the east side of Golf Road are in the unincorporated portion of Stanislaus County. There are twelve rural residential homes on rural lots on the east side of Golf Road; all of them have direct access to Golf Road. Golf Road crosses over SR 99 with a raised highway overpass at the southeast corner of the project area; there is no interchange at Golf Road.

**South**

SR 99 is a four-lane divided highway directly adjacent to the southern boundary of the project area. The highway is at grade for its entire length where it is adjacent to the project area. A wire fence with metal posts separates the highway right-of-way from the project. There is a highway interchange at Lander Avenue with the highway crossing over Lander Avenue. On the south side of SR 99 is a private airstrip, occupied rural residences, and agricultural land with mostly row crops and some orchards.

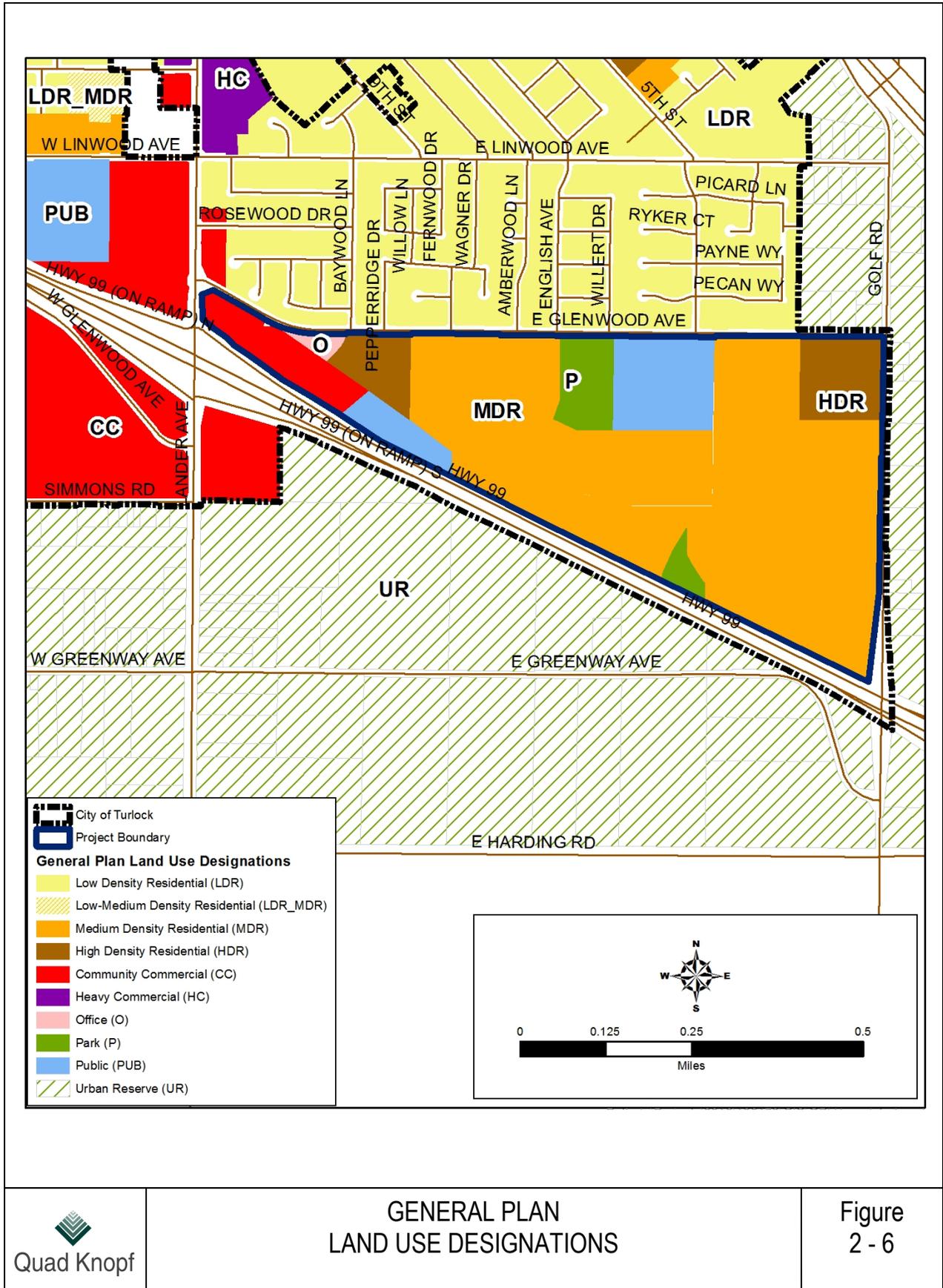
**2.1.4 LAND USE DESIGNATIONS**

The Turlock General Plan currently designates the project site as Commercial (CC), Office (O), High Density Residential (HDR), Medium Density Residential (MDR) Public/Semi Public (Pub), and Park (P). (Figure 2-6). The Turlock Zoning Ordinance zones the project site Heavy Commercial (H-C), High Density Residential (R-H), Low and Medium Density Residential (R-L 4.5), and Low Density Residential (R-L) (Figure 2-7).

**2.2 Project Characteristics**

**2.2.1 PROPOSED PROJECT**

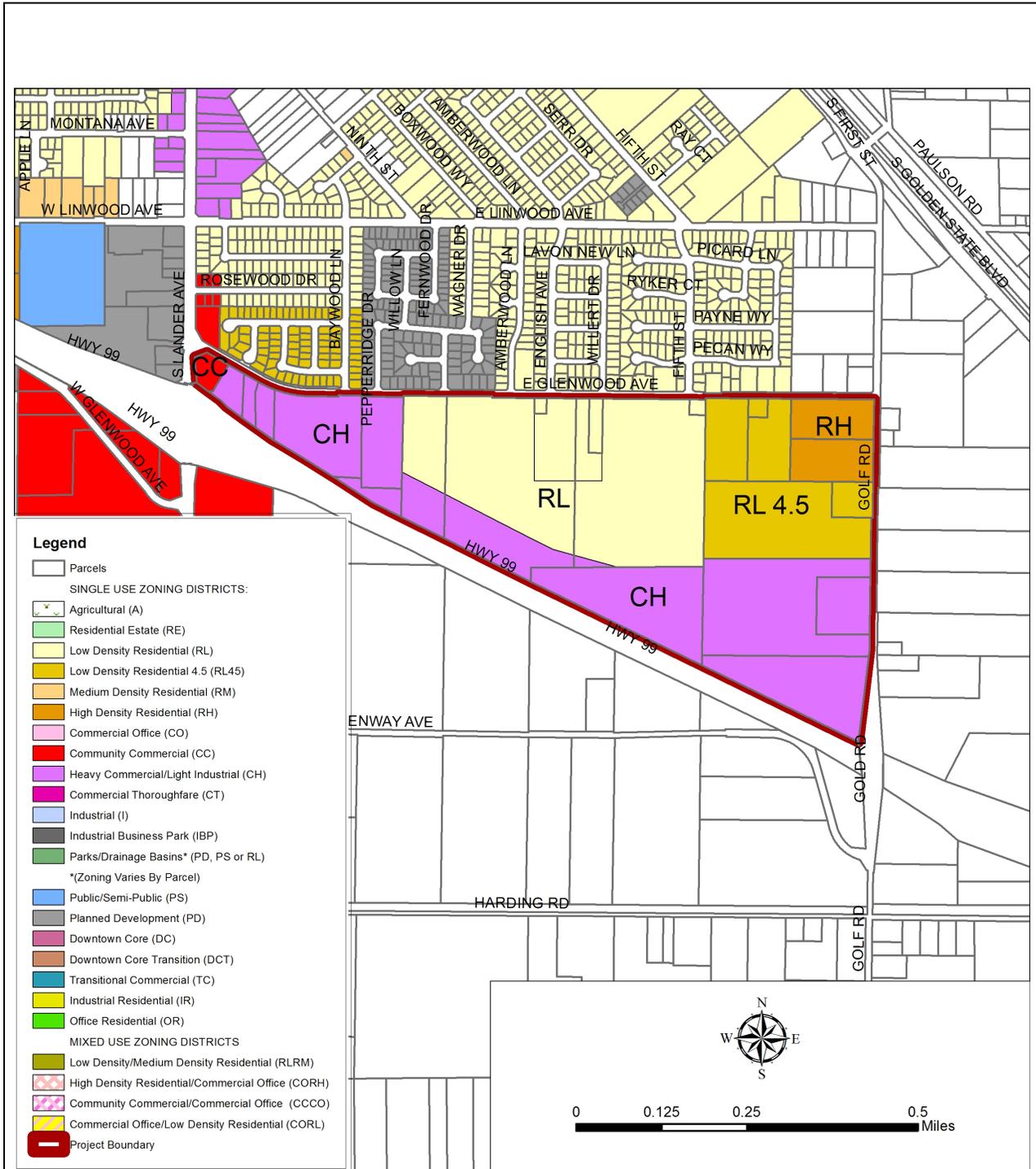
The proposed project consists of the adoption and implementation of the Morgan Ranch Master Plan. The Morgan Ranch Master Plan would modify the General Plan designations and zoning for approximately 170 acres. The Master Plan would designate the land uses for Community Commercial (CC), Office (O), High Density Residential (HDR), Medium Density Residential (MDR), Park (P), and Public/Semi-Public (PUB). (Figure 2-8). The Master Plan would zone the land uses for Community Commercial (CC), Commercial Office (CO), High Density Residential (RH), Medium Density Residential (RM), and Public/Semi-Public (PS) (Figure 2-9). Table 2-2 provides a summary of the proposed land uses.



GENERAL PLAN  
LAND USE DESIGNATIONS

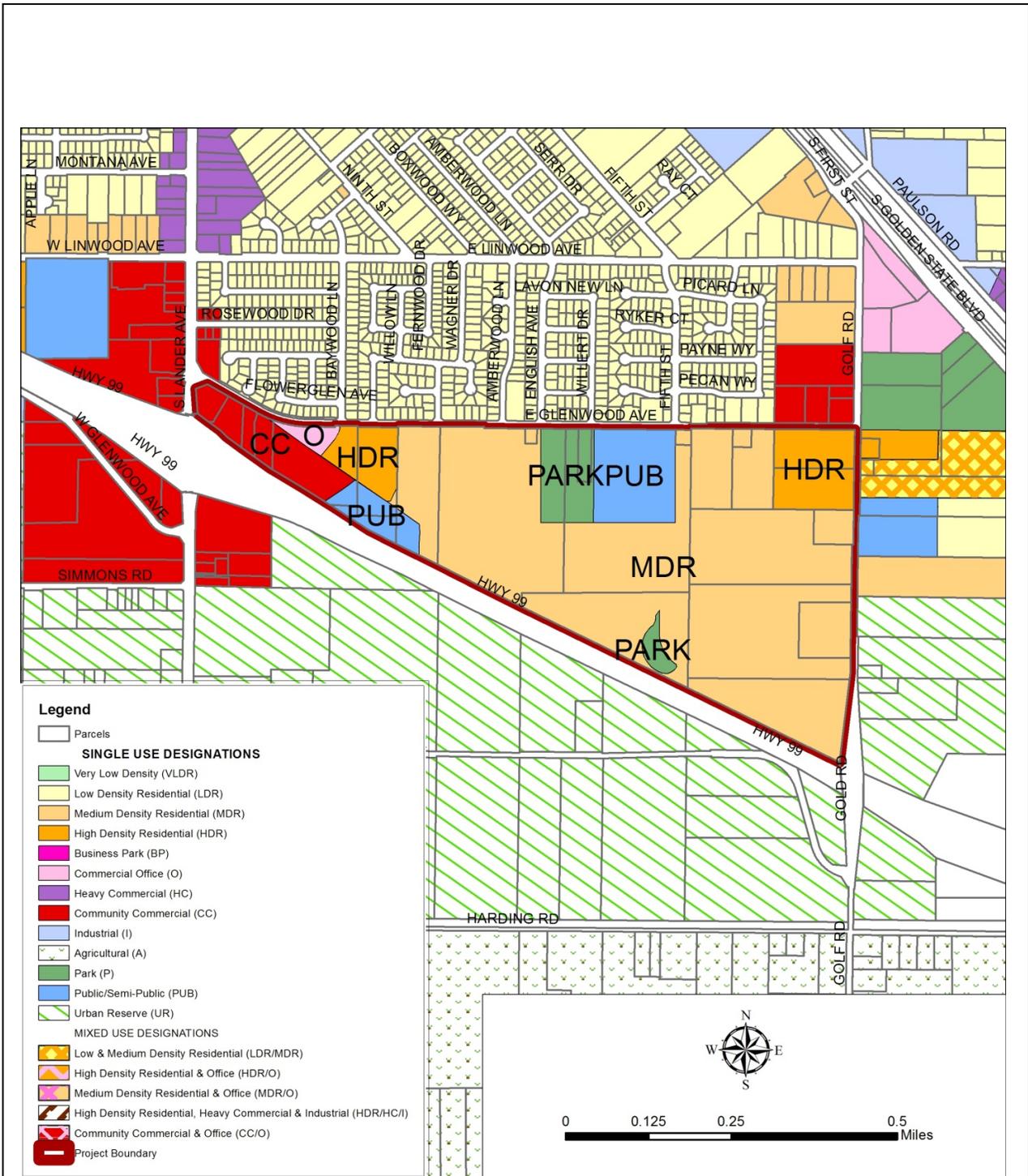
Figure  
2 - 6





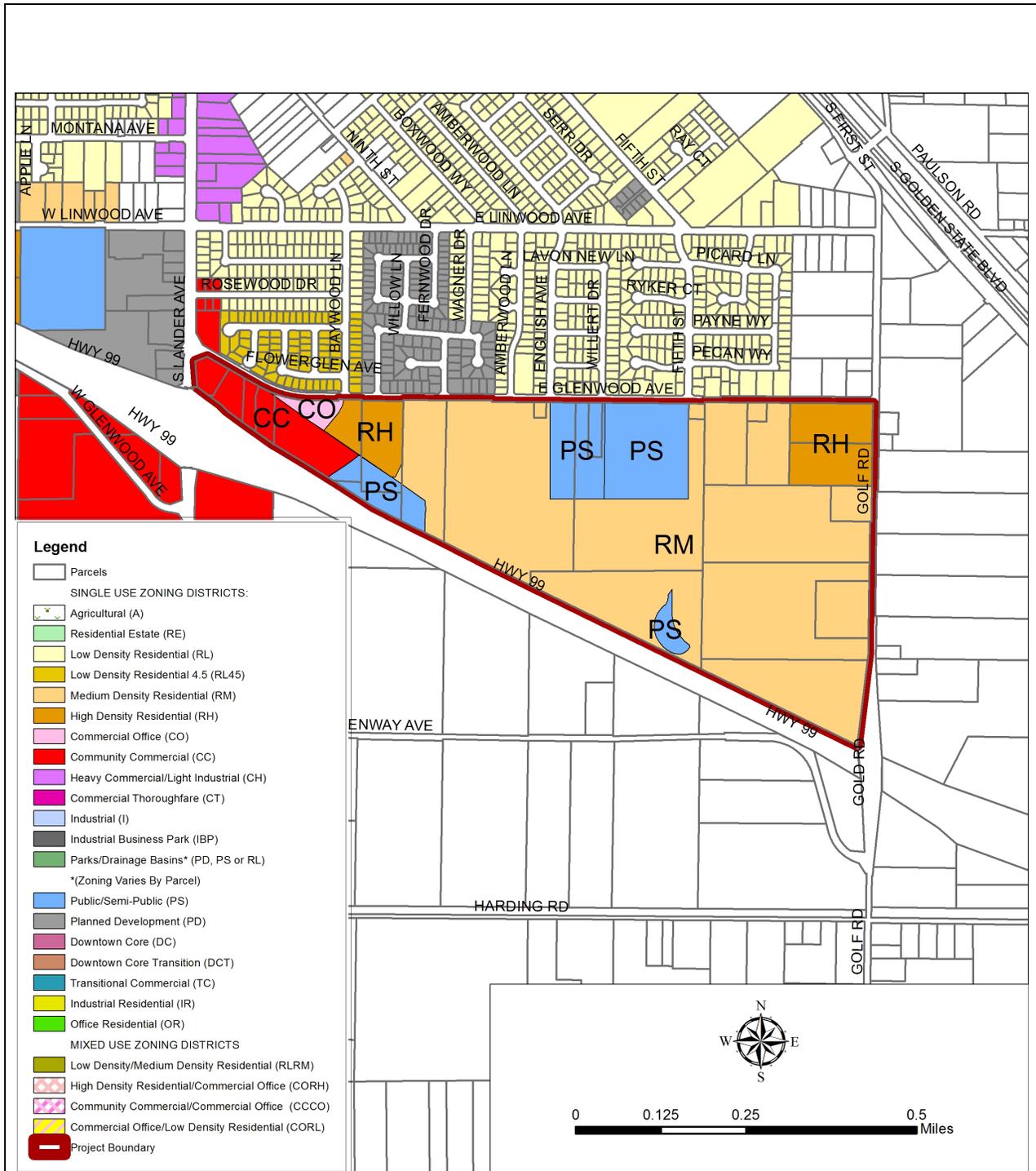
EXISTING ZONING DESIGNATIONS

Figure 2 - 7



MASTER PLAN  
LAND USE DESIGNATIONS

Figure  
2 - 8



PROPOSED ZONING DESIGNATIONS

Figure 2 - 9

**Table 2-2  
Land Use Summary**

Land Use Designation	Approximate Acreage	Number of Units	Density	Allowed Density
Medium Density Residential	120.2*	875 DU	9 DU/acre	7.5-9 DU/acre
High Density Residential	15.0	450 DU	30 DU/acre	17-30 DU/acre
Community Commercial	8.9	96.9 KSF	25% FAR	25% FAR
Office	1.5	16.3 KSF	25% FAR	35% FAR
Park	8.7	-	-	-
Detention Basin	4.4	-	-	-
Public (School)	11.1	300 students	-	-

Source: City of Turlock, Morgan Ranch Master Plan, 2014

Notes: DU = dwelling units, KSF = 1,000 square feet, FAR = Floor Area Ratio

\*Excludes 23.1 acres devoted to stormwater detention.

The Master Plan provides development standards and design guidelines to ensure consistency in the quality and character of the project area neighborhoods as the Plan is implemented. The Master Plan is intended to facilitate development by providing a framework that ensures, over time, the built environment of the project area will be cohesive and consistent with the overall vision of the City. The Master Plan will be used in the review and approval process of precise development proposals such as tentative subdivision maps, site plans, and improvement plans proposed for the project area. Responsibility for interpretation of these development standards and design guidelines will reside with the City of Turlock Planning Division.

## 2.2.2 PROJECT PHASING

There are no current development proposals included as part of the project; therefore, a precise phasing plan is not available. In order to provide a program-level analysis of environmental impacts phasing assumptions were developed and are shown in Table 2-3.

**Table 2-3  
Phasing Assumptions**

Land Use Designation	2014	2016	2018	2020
Medium Density Residential	30.05 acres 218 du	30.05 acres 219 du	30.05 acres 219 du	30.05 acres 219 du
High Density Residential	7.5 acres 225 du	7.5 acres 225 du	-	-
Community Commercial	-	4.45 48.461 KSF	4.45 48.460 KSF	-
Office	-	1.5 16.335 KSF	-	-
Park	-	4.35 acres	4.35 acres	-
Detention Basin	4.4 acres	-	-	-
Public (School)	11.1 acres 300 students	-	-	-

Source: Quad Knopf, 2014

Notes: DU = dwelling units, KSF = 1,000 square feet, FAR = Floor Area Ratio

A conceptual site plan has been prepared for the project area and is shown in Figure 2-10.

### 2.2.3 INFRASTRUCTURE IMPROVEMENTS

The proposed project will require the various infrastructure improvements. These improvements are detailed below.

#### **Roadways**

The intent of Morgan Ranch’s circulation plan (Figure 4-1) is to meet the City of Turlock's goals for Complete Streets. Complete Streets are streets that promote connectivity between land uses in the Plan Area and connect to areas outside the Plan Area. They enable safe, comfortable, and attractive access for all users in a form that is compatible with, and complementary to, adjacent land uses. The road is designed to accommodate all expected users, including pedestrians, motorists, bicyclists, and transit riders of all ages and abilities. (See Transportation/Traffic Section)

#### **Utilities**

### SEWER COLLECTION AND DISPOSAL

There are already 8-inch sewer lines in the portions of Glenwood Avenue where there are residences fronting the street. However, these lines are to service existing residences only. New development in the project area will install a new system of sewer lines that will be connected to the City’s existing collection system. The nearest sewer trunk line is a 24-inch line in Linwood Avenue. This line runs east-west approximately ¼ mile north of the project area. The sewer trunk line currently terminates approximately 700 feet west of the Linwood Avenue / Golf Road intersection.

The Linwood Avenue trunk line will be extended to Golf Road and then will be further extended south in Golf Road to the Golf Road / Glenwood Avenue intersection. At that location, a sewer lift station will be installed. From there, a trunk line would continue from the Golf Road / Linwood Avenue intersection to the new Golf Road / Morgan Ranch Arterial intersection. Local collection lines serving properties south of the Morgan Ranch Arterial would connect at this point, while properties north of the Morgan Ranch Arterial would connect from the lift station via Glenwood Avenue.

The Turlock Regional Water Quality Control facility is located at the northwest corner of Linwood Avenue and Walnut Avenue, approximately one mile west of the Plan Area. The facility’s capacity is 20 million gallons per day (mgd). Currently, the facility treats 13 mgd. No additional improvements are anticipated as a result of the Master Plan. A sewer fee is charged to all new development to cover infrastructure costs at the facility.

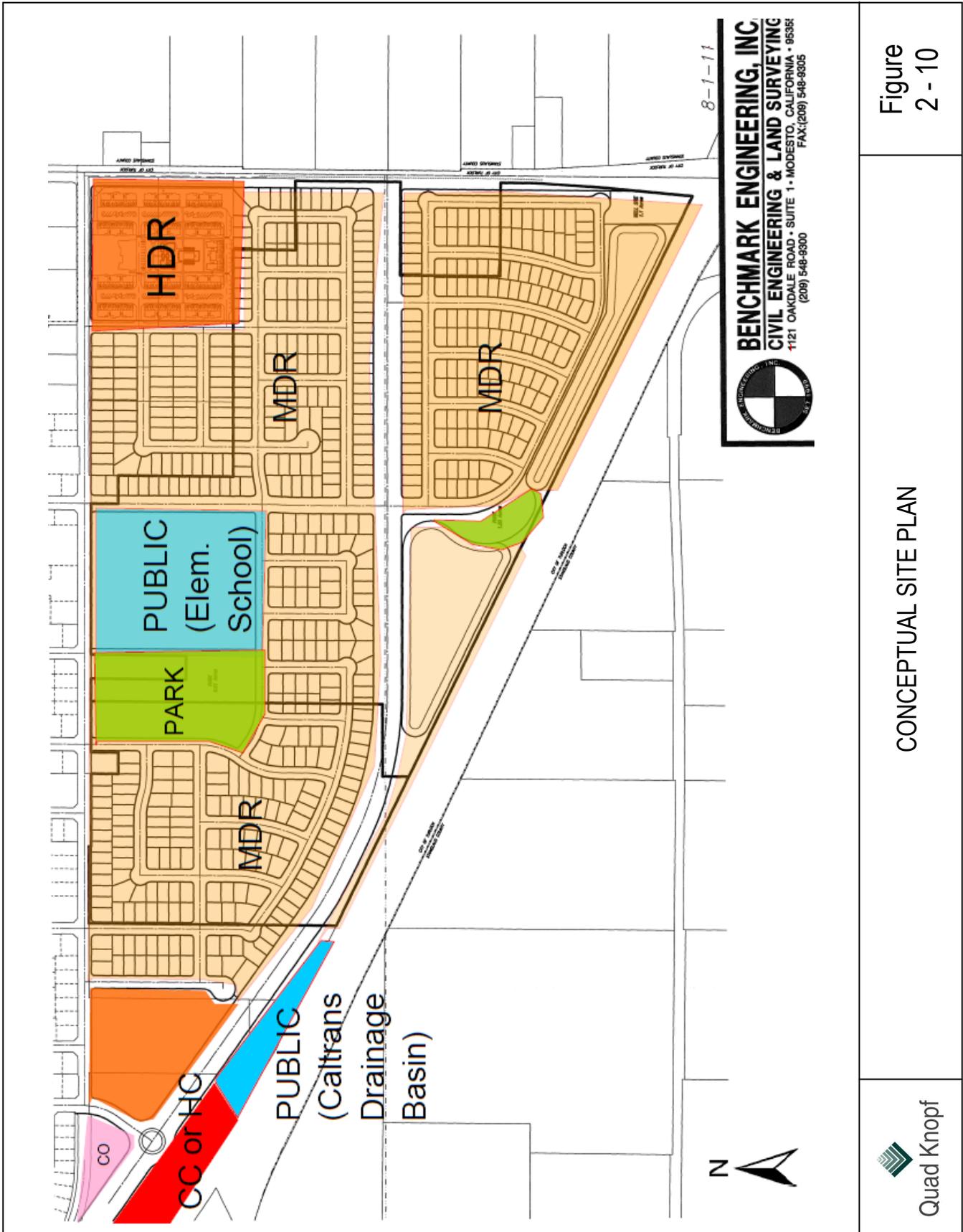


Figure 2 - 10

## **DOMESTIC WATER**

A water supply system of 10-inch and 12-inch lines will be constructed and looped into the City's existing water system and four connection points. A new City water well will be drilled within the project area at the northwest corner of SR 99 and Golf Road, near the overpass.

## **STORM DRAINAGE**

The majority of the project area will drain to the new park/pond basin located on the southerly side of the project area adjacent to SR 99. The exceptions are the existing gas station and car wash sites that currently drain to existing storm drain lines in Lander Avenue, and the north side of Glenwood Avenue, which drains to drop inlets with lines that carry storm water to existing basins in the existing neighborhoods north of the project area.

There will be a 30-inch overflow line that runs from the outfall structure at the new basin to an existing 42-inch storm drainage line in Lander Avenue.

## **IRRIGATION WATER**

The Turlock Irrigation District (TID) provides irrigation water for agricultural purposes within the project site and to other nearby properties. There two irrigation lines that currently run through the project site. District 3A, known as the Casey, runs south to north from under SR 99 and continues in a northwesterly direction until eventually crossing under Glenwood Avenue. With the project site, the facility is comprised of a 36-inch diameter cast-in-place pipe and appurtenances.

TID also operates a drainage pump and well known as Pump 112 approximately 600 feet west of Golf Road, on the south side of Glenwood Avenue. The pump discharges into a structure box located to the east on the Goldberry-Conyers pipeline, for the purpose of controlling groundwater elevations in the area.

The irrigation lines provide water not only to the project site but also to properties beyond the project site. Therefore, a plan is needed to maintain service even as the project site develops. The Casey and Goldberry-Conyers lines will need to be relocated as development occurs.

## **DRY UTILITIES**

Electricity service in Turlock is provided by the Turlock Irrigation District (TID). There are existing 69 KV overhead power lines along the west side of Golf Road. There are also existing 12 KV overhead power lines along the south side of Glenwood Avenue. Turlock Irrigation District is expected to abandon the 69 KV overhead lines prior to implementation of the Master Plan; however, the Glenwood Avenue overhead lines and power poles will need to be relocated and undergrounded to accommodate road widening.

Natural gas is provided by Pacific Gas & Electric (PG&E). There is a six-inch gas main in Lander Avenue. There are three-inch gas mains in Glenwood Avenue and in Golf Road. As the

project site is developed the project developers will be responsible for working with PG&E to provide extensions of these lines into the project site.

AT&T has existing underground communication lines starting south of SR 99 along Golf Road and continuing briefly north until converting to overhead lines. The overhead lines continue north on Golf Road and turn westward along the south side of Glenwood Avenue before going underground east of 5<sup>th</sup> Street on Glenwood Avenue. The underground line continues west on Glenwood Avenue, turning to continue north and south along Lander Avenue.

Charter Communication has existing underground cable located on the north side of Glenwood Avenue running just behind the sidewalk from Lander Avenue to Golf Road. There is also existing overhead cable on the electrical poles located on the south side of Glenwood Avenue, from Lander Avenue to Golf Road.

All improvements to dry utilities to accommodate development in the project site will be completed by the developer as projects occur.

## **2.2.4 CIRCULATION**

The new Morgan Ranch Arterial roadway is the most important circulation design feature within the project site. This as yet unnamed street directly serves most of the land uses in the project site and connects Landers Avenue to Golf Road. The alignment of the roadway will remove most of the through traffic from the Glenwood Avenue collector, which would otherwise continue to function as an undersized arterial. The Morgan Ranch Arterial road alignment is planned to allow it to be extended east past Golf Road when the SE4 Master Plan is developed during Phase II of the Turlock General Plan.

All streets within the project site will have sidewalks on both sides. The required minimum width of the sidewalk is intended to allow two persons to walk side by side. Parkway strips with street trees serve to separate pedestrians from motor vehicles and provide shade relief on warmer days.

Pedestrian and bicycle access to and from the proposed elementary school site is an important feature in the project site. The Master Plan assumes that once the elementary school is constructed and operating its enrollment boundary will encompass all of the Plan Area. The location, type, and width of roadways have been planned to encourage walking and bicycling to and from the school in a safe manner.

Four single-lane roundabouts are planned. They will be located along the new Morgan Ranch arterial at Glenwood Avenue, 5<sup>th</sup> Street, and Golf Road, and also at Glenwood Avenue / Golf Road. (For the purpose of describing the required roadway standards in this Master Plan, the roadway connecting the roundabout with the existing Glenwood Avenue / Baywood Lane intersection shall be considered Glenwood Avenue. Actual street naming will be determined by the City Planning Division and may be different.) Travelling eastbound from Lander Avenue, the Morgan Ranch 4-lane Arterial will transition to two lanes just before entering that roundabout. Traffic signals may also be considered as an option at these locations.

Golf Road currently crosses over State Highway 99 with an overpass, but does not connect to the freeway. Converting the overpass to a freeway interchange has been previously discussed. However, the decision has been made to instead focus on an area near Highway 99 and Harding Avenue, southwest and about ½ mile outside of the Plan Area. Therefore, there are no plans to modify the Golf Road overpass.

### **2.3 Project Objectives**

The objectives of the proposed project are to:

- Direct the development of new growth within the City of Turlock;
- Serve as a bridge between the more general policies in the Turlock General Plan and the requirements placed on specific development projects within the Morgan Ranch Master Plan Area;
- Provide land use locations, development standards, circulation patterns, and infrastructure plans to direct future development within the Morgan Ranch Master Plan Area; and
- Enable subdivision maps that conform to the development standards of the Master Plan to be approved without the need for other discretionary permits.

### **2.4 Intended Uses of this Draft EIR**

This Draft EIR is being prepared by the City of Turlock to assess the potential environmental impacts that may arise in connection with actions related to implementation of the proposed project. Pursuant to CEQA Guidelines Section 15367, the City of Turlock is the lead agency for the proposed project and has discretionary authority to approve the proposed project. The Draft EIR is intended to evaluate on a programmatic level the potential environmental impacts of the project as a whole, including all infrastructure improvements and all future development that is required to implement the proposed project.

#### **2.4.1 DISCRETIONARY AND MINISTERIAL ACTIONS**

- Adoption of the Morgan Ranch Master Plan
- Amendment of the zoning map to reflect the land uses specified in the Morgan Ranch Master Plan
- Certification of the Environmental Impact Report

#### **2.4.2 RESPONSIBLE AND TRUSTEE AGENCIES**

A number of other agencies in addition to the City of Turlock will serve as Responsible and Trustee Agencies, pursuant to CEQA Guidelines Section 15381 and Section 15386, respectively. This Draft EIR will provide environmental information to these agencies and other interested agencies, which may have approval authority over some aspect of the project or that otherwise

may be involved in coordinating project implementation. These agencies may include, but are not limited to, the following.

- United States Fish and Wildlife Service (USFWS)
- California Department of Fish and Wildlife (CDFW)
- California Department of Transportation (Caltrans)
- Central Valley Regional Water Quality Control Board (RWQCB)
- San Joaquin Valley Air Pollution Control District
- Turlock Irrigation District (TID)
- Turlock Unified School District

Actions that are necessary to implement the project that must be taken by other agencies include:

- Obtain coverage under General Stormwater Permit – State Water Resources Control Board Central Valley RWQCB. A Storm Water Pollution Prevent Plan must be submitted in order to obtain such coverage; and
- Relocation of existing TID irrigation lines.
- Relocation and undergrounding of TID electrical transmission lines.

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**CHAPTER THREE**  
**ENVIRONMENTAL IMPACT ANALYSIS**

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## CHAPTER THREE– ENVIRONMENTAL IMPACT ANALYSIS

### ***Organization of Issue Areas***

This Draft Environmental Impact Report (Draft EIR) provides analysis of impacts for those environmental topics where it was determined in the Notice of Preparation issued on February 14, 2012, or through subsequent analysis that the proposed project would result in “potentially significant impacts.” Sections 3.1 through 3.15 discuss the environmental impacts that may result with approval and implementation of the proposed project.

### ***Issues Addressed in this EIR***

The following environmental issues are addressed in Chapter Three:

- Aesthetics
- Agriculture Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology / Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services and Utilities
- Recreation
- Transportation/Traffic

Each environmental issue area in Section 3.1 through 3.15 contains a description of:

1. The environmental setting as it relates to the specific issue;
2. The regulatory framework governing that issue;
3. The methodology used in identifying the issues;
4. The significance criteria;
5. An evaluation of project-specific impacts and identification of mitigation measures; and
6. A determination of the level of significance after mitigation measures are implemented.

### ***Level of Significance***

Determining the severity of project impacts is fundamental to achieving the objectives of CEQA. CEQA Guidelines Section 15091 requires that decision makers mitigate, as completely as is feasible, the significant impacts identified in the Final EIR. If the EIR identifies any significant unmitigated impacts, CEQA Guidelines Section 15093 requires decision makers in approving a

project to adopt a statement of overriding considerations that explains why the benefits of the project outweigh the adverse environmental consequences identified in the EIR.

The level of significance for each impact examined in this Draft EIR was determined by considering the predicted magnitude of the impact against the applicable threshold. Thresholds were developed using criteria from the CEQA Guidelines and checklist; state, federal, and local regulatory schemes; local/regional plans and ordinances; accepted practice; consultation with recognized experts; and other professional opinions.

### ***Impact Analysis and Mitigation Measure Format***

The Impact Analysis section presents the analysis of whether there is an impact and whether it can be mitigated, and is comprised of the following subsections:

- **Impact #Title:** Each identified environmental impact is numbered for reference. They are numbered in accord with the Chapter subsection (e.g., #3.8.1).
- **Conclusion:** This is a statement of whether or not an identified impact is significant or less than significant. Significant environmental effects include direct, indirect, short-term, long-term, and unavoidable impacts.
- **Mitigation Measure #:** Each mitigation measure is numbered in accord with its chapter subsection and correlated with the impact to which it applies.
- **Effectiveness of Measure:** For significant impacts, a statement is made regarding whether the impact can be mitigated to a less than significant level or, alternatively, whether the impact is only partially mitigated, immitigable, unavoidable, and/or irreversible, based on the Impact Evaluation Criteria.

The above format is intended to conform to standards for adequacy of an EIR as described in §15151 of the *CEQA Guidelines*, which states:

An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and good faith effort at full disclosure.

### ***Distinction between Review of Environmental Issues and Project Merits***

Often during review of an EIR, the public raises issues that relate to the proposed project itself or the project's community benefits or consequences (referred to herein as "project merits"), rather

than the environmental analyses or impacts raised in the EIR. Lead Agency review of environmental issues and project merits are both important in the decision of what action to take on a project, and both are considered in the approval process for a project. However, a Lead Agency is only required to respond in its CEQA review to substantive environmental issues that are raised. Certifying an EIR (i.e., finding that it was completed in compliance with CEQA) and taking action on the proposed project rely on procedurally distinct processes and may result in separate decisions made by the Lead Agency.

An example of a project merits issue that is important, but is not a substantive environmental issue, is economic effects that do not result in any physical change to the environment. At any time that the Project comes before the Planning Commission or the City Council, the merits of the Project will be discussed. The Planning Commission and the City Council may hold public meetings or hearings to review Project merits that are separate from those intended for reviewing the EIR and environmental issues.

Generally, an EIR is "...a detailed statement prepared under CEQA describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the effects" (CEQA Guidelines §15362). An EIR is intended to identify significant effects on the environment defined in CEQA Guidelines §15382 as "...substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project...". An EIR is intended to be used by the public, decision-makers, interested individuals, and other agencies and organizations that may have responsibility for a project or project components. CEQA Guidelines §15091 points out that "no public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding." Further, CEQA Guidelines §15092 states that "after considering the final EIR and in conjunction with making findings...the lead agency may decide whether or how to approve or carry out the project," which is a separate action from EIR certification. When significant environmental effects cannot be reduced to a less than significant level, the Lead Agency must prepare a Statement of Overriding Considerations, in addition to findings, that documents how project benefits outweigh the unavoidable impacts.

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### 3.1 Aesthetics

#### 3.1.1 INTRODUCTION

This section addresses project impacts on the visual and aesthetic character of the proposed project site and vicinity. Issues include potential impacts to scenic views and vistas, potential disturbance of scenic resources (i.e., trees, rock outcroppings, etc.), alteration of agricultural/rural residential uses (from the perspective of aesthetics), and impacts associated with development of the proposed project, including light or glare. Descriptions and analysis in this section are based on site reconnaissance by Quad Knopf, review of the Morgan Ranch Master Plan, as well as review of the City of Turlock General Plan and Municipal Code.

#### 3.1.2 ENVIRONMENTAL SETTING

##### *Regional Setting*

The City of Turlock is located in Stanislaus County, on the eastern side of California’s San Joaquin Valley and is characterized by flat terrain of approximately 101 feet above mean sea level. The City is located on the State Route 99 (SR 99) corridor, linking it to other Central Valley cities including Stockton and Sacramento to the north and Fresno and Bakersfield to the south. The regional location of the City is shown in Figure 2-1.

The City was incorporated in 1908 and grew outward from the downtown core/railroad station in an orthogonal north-south grid matching the rural road and parcel pattern around it. Despite the growth over the years, Turlock has remained a stand-alone city surrounded by productive agricultural land. The largest nearby community is the City of Modesto, which is located 14 miles north. The communities of Delhi, Hilmar, and Livingston are located within 10 miles to the south.

The City of Turlock’s current population is 70,158. Even with the current economic recession, the City expects to continue to grow. The General Plan estimates that the City’s population will grow to 127,000 by 2030.

Existing land uses within the City are summarized below:

▪ Residential	41 percent
▪ Agriculture	16 percent
▪ Vacant	12 percent
▪ Industrial	11 percent
▪ Commercial and Mixed Use	9 percent
▪ Public/Semi-Public/Community Facility	8 percent
▪ Park and Open Space	2 percent
▪ Office	1 percent

Land use within the City is predominantly residential, accounting for 41 percent of the total land use. Agricultural land uses are the next highest category at 16 percent, followed by Vacant and Industrial land at 12 and 11 percent, respectively.

**Project Site**

The project site is a mixture of agricultural, residential, and commercial uses. Some of the agricultural land is fallow, some has been used for row crops, and one area has an orchard. Within the project site, there are two occupied single-family residences fronting on Golf Road. There are ten, occupied single-family residences and one occupied mobile home fronting Glenwood Avenue. The residences are set back from the roadway in rural residential-type configurations. Most have detached garages, sheds, or barns. One has a tennis court, and two have swimming pools.

At the southeast corner of Lander Avenue and Glenwood Avenue is the existing, operating Lander Mini Mart with a Chevron gas station. Directly east of the mini mart is the existing, operating Fast Track Car Wash.

There is an open ditch running roughly parallel to SR 99. There are above ground electrical power lines running along Glenwood Avenue on the south side of the street. There is a small drainage basin within the project site that is owned by Caltrans and is used for drainage run-off coming from the highway right-of-way.

**Surrounding Land Uses and Views**

Below is a description of surrounding land uses, including views from and of the project site. Views of the project site and views of the surrounding land uses are provided in Figures 3.1-1 and 3.1-2. Photoplates 1 and 2 in Chapter 2 Project Description provide additional representative views of the project site and surrounding land uses.

**WEST**

Directly to the west of the project site are commercial land uses. Further west, there is vacant land. This land is designated under the City’s General Plan as Community Commercial.

The western portion of the project site has mostly unobstructed views of these land uses. Street landscaping on Lander Avenue serves to partially obstruct the view.

The commercial uses on the west side of the project have mostly unobstructed views of the project site. Street landscaping on Lander Avenue serves to partially obstruct the view.

**NORTH**

East Glenwood Avenue, a two-lane collector with sidewalks on the majority of the north side of the roadway, forms the northern boundary of the project site. North of the roadway are residential land uses. This land is designated under the City’s General Plan as Low Density Residential.



Existing Mini Mart/Gas Station



Existing farming operations



Existing home on East Glenwood Avenue



VIEWS OF THE PROJECT SITE

Figure  
3.1-1



View from project site south towards SR 99



View looking northeast from project site.



View looking west from the western portion of the project site (South of Lander)



VIEWS FROM THE PROJECT SITE

Figure  
3.1-2

Trees and shrubbery surrounding the existing structures on the project site partially obstruct the views of the residential land uses on the north side of East Glenwood Avenue.

The same trees and shrubbery also serve to partially obstruct views of the project site from the residential land on the north side of East Glenwood Avenue.

## **EAST**

Golf Road, a two-lane north-south collector, forms the eastern boundary of the project site. Directly to the east of roadway are existing rural residential and agricultural land uses. This land is designated as SE3 by the General Plan. This area will be subject to Master Plan requirements for future development. The land is currently designated Agriculture by the Stanislaus County General Plan.

Trees and shrubbery surrounding the existing structures on the project site partially obstruct the views of the rural residential land uses on the east side of Golf Road.

The same trees and shrubbery also serve to partially obstruct views of the project site from the rural residential and agricultural land on the east side of Golf Road.

## **SOUTH**

SR 99, a six-lane divided freeway forms the southern boundary of the project site. Beyond SR 99 are rural residential and agricultural land uses as well as the Turlock Air Park. Views of those land uses are obstructed by SR 99. Views of the project site are generally unobstructed from SR 99. Trees and shrubbery surrounding the existing structures on the project site partially obstruct views from SR 99.

### ***Light and Glare***

## **PROJECT SITE**

The project site consists of agricultural operations, commercial and rural residences. These uses contain structures and improvements (such as light fixtures and illuminated signage) that emit sources of light and glare. Vehicles traveling along Lander Avenue, East Glenwood Avenue, Golf Road, and SR 99 are also sources of light and glare.

## **SURROUNDING AREAS**

Sources of light and glare in the surrounding areas include residential uses to the north, rural residential and agricultural uses to the south, and commercial uses to the west. The uses include improvements (such as building-mounted and free-standing light fixtures and illuminated signage) that emit sources of light and glare. There is existing street lighting on the north side of East Glenwood Avenue and along both sides of Lander Avenue. Vehicles traveling along Lander Avenue, East Glenwood Avenue, Golf Road, and SR 99 are also sources of light and glare.

### **3.1.3 REGULATORY SETTING**

#### ***International***

#### **MODEL LIGHTING ORDINANCE**

The International Dark-Sky Association and Illuminating Engineering Society publically released the Model Lighting Ordinance in June 2011 as a guide for environmentally responsible outdoor lighting in North America. The ordinance will encourage broad adoption of comprehensive outdoor lighting ordinances without devoting extensive staff time and resources to their development. The ordinance was designed as a template to help municipalities develop outdoor lighting standards that reduce glare, light trespass, and skyglow. Three innovations to outdoor lighting regulation include using lighting zones to classify land use with appropriate lighting levels; limiting the amount of light used for each property; and classifying outdoor lighting fixtures to ensure that only well-shielded fixtures are used. No uplight for area and street lighting is allowed in any zone.

#### ***Federal***

#### **NATIONAL ENVIRONMENTAL POLICY ACT**

The National Environmental Policy Act (NEPA) (42 U.S.C Section 4321 et seq) requires the consideration of potential environmental effects, including potential aesthetic and visual effects, in the evaluation of any proposed federal agency action. NEPA also obligates federal agencies to consider the project and program environmental consequences and costs as part of the planning process. General NEPA procedures appear in the Council on Environmental Quality (CEQ) regulations 23 Code of Federal Regulations (CFR) 771.

#### ***State***

#### **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

The California Environmental Quality Act (CEQA) requires state and local agencies to identify the significant environmental impacts of their proposed actions, including potential significant aesthetic and visual impacts. It requires agencies to avoid or mitigate those impacts, when feasible.

#### **STATE SCENIC HIGHWAY PROGRAM**

The State Scenic Highway Program lists highways that are either eligible for designation as a scenic highway or already are designated as a scenic highway. Designation as scenic highway depends on how much of the natural landscape travelers can see, the scenic quality of the landscape, and the extent to which development intrudes on the traveler's enjoyment of the view.

Local

**CITY OF TURLOCK GENERAL PLAN**

The City of Turlock General Plan includes the following relevant policies related to aesthetics, light, and glare that are applicable to the proposed project:

***Chapter 2 – Land Use and Economic Development***

**Policy 2.5-b New Neighborhood Character.** Foster the development of new residential areas that are compact, mixed use, and walkable, with a distinct identity, and identifiable center, and a “neighborhood” orientation.

**Policy 2.6-b Neighborhood and community commercial areas.** Facilitate the development of neighborhood and community commercial areas, which will: (a) conveniently serve current and future residential needs, (b) provide employment opportunities, (c) contribute to the attractiveness of the community, and (d) contribute to the City’s tax base. Mixed use commercial areas are also encouraged, and shall be incorporated into new master plan areas.

***Chapter 3 – New Growth Areas and Infrastructure***

**Policy 3.1-c Promote good design in new growth areas.** Design new growth and development so that it is compact; preserves natural, environmental, and economic resources; and provides the efficient and timely delivery of infrastructure, public facilities, and services to new residents and businesses.

***Chapter 6 – City Design***

**Policy 6.1-c Promote compact growth.** Maintain a compact growth pattern to avoid sprawl and preserve agricultural land and open space.

**Policy 6.2-a Develop complete neighborhoods.** Encourage new residential growth in the form of neighborhoods, characterized by a mix of housing types and a well-defined neighborhood center.

**Policy 6.2-h Design Principles.** Ensure that development in the new neighborhoods is in accordance with the design principles established in Section 6.7, the policies specific to each master plan area established in Section 3.2., and any subsequent guidelines that may be established.

**Policy 6.3-d Provide attractive, landscaped streetscapes.** Enhance the visual attractiveness of the community by providing attractive streetscapes, particularly along major expressways, arterials and collector streets. Utilize landscaping that is native and drought-tolerant, and that minimizes upkeep and maintenance.

- Policy 6.3-j Undergrounding of utility wires.** Continue to require undergrounding of utility lines in new developments.
- Policy 6.4-a Protect existing resources.** To the extent possible, minimize disruption to or loss of natural resources in construction of new development.
- Policy 6.4-d Minimize site disturbance.** In design and construction, preserve existing natural resources such as soil, noninvasive trees, native plants, and permeable surfaces.
- Policy 6.7-a Use of Design and Site Plan review.** Continue to subject all projects, except single units on existing parcels, to a design and site plan review that may be conducted by City staff in accordance with the Design Guidelines updated in 2003.
- Policy 6.7-e Pedestrian scale and neighborhood character.** Require buildings and signs to be scaled to a neighborhood character and designed to encourage pedestrian activity and comfort.
- Policy 6.7-q Visual interest and compatibility in residential design.** Residential projects, single family or multifamily, should include visual interest and variety. The size, scale, proportion, color, placement, and detailing of architectural features should be carefully considered to complement the overall massing and scale of single family or multifamily building. Multifamily projects should be designed and detailed to be compatible with neighboring single family homes and commercial centers. Single family projects should include architecture and landscaping that is complimentary and creates a neighborhood identity with visual interest and variety.
- Policy 6.7-w Residential parking design.** Reduce the visual dominance of garages and parking.
- Policy 6.7-y Visual variety.** Promote fine-grained development that provides individuality and distinction. Projects should be integrated with surroundings, not closed off from them.

### ***Chapter 7 – Conservation***

- Policy 7.2-e Limit Urban Expansion.** Retain Turlock’s agricultural setting by limiting urban expansion to designated areas and minimizing conflicts between agriculture and urban activities.

The project’s consistency with the General Plan policies is assessed in Chapter 3, Section 3.10 Land Use and Planning.

## **CITY OF TURLOCK DESIGN GUIDELINES**

### ***Lighting***

- (1) Lighting should be used to provide illumination for the security and safety of on-site areas such as parking, loading, shipping, and receiving, pathways, and working areas.
- (2) The design of light fixtures and their structural support should be architecturally compatible with the main structures on-site. Light fixtures should be integrated within the architectural design of the structures.
- (3) All building entrances should be well lighted.
- (4) All lighting fixtures must be shielded to confine light spread within the site boundaries.

## **CITY OF TURLOCK MUNICIPAL CODE**

The City of Turlock addresses street lighting in Section 7-5-01 of the Turlock Municipal Code:

### ***Section 7-5-01 Unauthorized lights***

It is hereby declared to be a nuisance and shall be unlawful for any person, as principal, agent, officer, servant, or employee, for himself or for another, to maintain or cause to be maintained any street lights, whether supported by span wires or brackets, or any poles or wires which are exclusively used in the support of, or connection to, street lights, or otherwise intended to be used, or could be used, in the operation of street lights, where such street lights are not regularly energized and in use by and for the City in the illumination of the streets of the City.

### **3.1.4 METHODOLOGY**

Quad Knopf evaluated the project's potential impacts on aesthetics, light, and glare through site reconnaissance, review of the City's applicable plans and policies, and a review of the Master Plan materials. Quad Knopf staff visited the project site and surrounding area several times between April and May 2012 to document site conditions through photographs and notation. The City of Turlock's General Plan and Municipal Code were reviewed to determine applicable policies and design requirements for the proposed project.

### **3.1.5 IMPACT EVALUATION CRITERIA**

According to Appendix G, Environmental Checklist of the California Environmental Quality Act (CEQA) Guidelines, aesthetics impacts resulting from the implementation of the proposed project would be considered significant if the project would:

- a) Have a substantial adverse effect on a scenic vista? (Refer to Chapter 7, Effects Found Not To Be Significant)

- b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (Refer to Chapter 7, Effects Found Not To Be Significant)
- c) Substantially degrade the existing visual character or quality of the site and its surroundings?
- d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

### 3.1.6 IMPACT ANALYSIS

#### **Impact #3.1.1 - Substantially degrade the existing visual character or quality of the site and its surroundings.**

The evaluation of aesthetic and visual impacts is by nature a subjective exercise due to widely varying personal perceptions. The proposed project is located within an area that contains existing residential development and agricultural land uses, and which has been contemplated for future urban development as reflected in the City's General Plan. Implementation of the proposed project would result in the development of 170 acres and would alter the rural character of the project site. More specifically, the proposed project would develop the site into a master-planned development consisting of 1,322 Medium Density residential dwelling units, 338 High Density residential dwelling units, 96,900 square feet of community commercial uses, 16,300 square feet of office uses, 8.7 acre park, 4.4 acre detention basin, and an 11.1 acre elementary school. The proposed project would also introduce other site improvements such as new roads, parking areas, walkways, and night-time lighting. The loss of the agricultural/rural residential land and the development of the proposed project would change the existing visual character of the project site and its surroundings.

The visual features of the proposed project would include residential, commercial, office, and school buildings and structures, ancillary structures and facilities, surface parking areas, and other roadway improvements (e.g., curb, gutter, sidewalk and street paving). New development within the project site would be in accordance with development standards and design guidelines outlined in Chapter 3, Land Use and Development Standards of the Morgan Ranch Master Plan. Compliance with these standards and guidelines would ensure that buildings and structures proposed within the project site would be developed to be sensitive to and compatible with existing and future surrounding land uses, while providing high-quality architecture and design.

Examples of how the design guidelines from the Master Plan minimize the visual impact on existing and future surrounding land uses are provided in Table 3.1-1.

**Table 3.1-1  
Example Morgan Ranch Master Plan Design Guidelines**

<b>Land Use Type/Guideline</b>	<b>Effect</b>
<u>Medium Density Residential Uses</u>	
For single family detached products, the same floor plan and same elevation may not be repeated on adjoining lots or facing lots. Lots that back onto each other are permitted the same floor plan and same elevation. Homes on adjoining lots or facing lots may not be painted the same exterior color. Homes that back onto each other are permitted the same exterior color.	This guideline ensures that the Morgan Ranch Master Plan area maintains visual variety and interest.
Architectural features, such as porches, balconies, chimneys, door placement, window placement, bay windows, recesses and projections, changes in plan, and siding materials shall be used to design buildings without flat, blank, or unarticulated walls.	This guideline ensures that the Morgan Ranch Master Plan area maintains visual variety and interest.
All utility and mechanical equipment shall be screened from view from the public street. Ground-mounted air conditioners, coolers, and antennas are encouraged.	This guideline ensures that receptors in the viewshed are not exposed to views of utility and mechanical equipment, which may be perceived as a negative aesthetic impact.
<u>High Density Residential Uses</u>	
Project entry areas shall be enhanced and obvious to the resident and visitor. A minimum of two of the following entry enhancements shall be required: landscaped medians, enriched/special paving, decorative landscaped entry walls, and/or gateway structures.	This guideline ensures that the high density residential uses include architectural enhancements and landscaping to create an aesthetically pleasing site.
Off-street parking shall be located to the rear of the building or internalized (between buildings) and not visible from residential areas or public rights-of-way. When buildings cannot adequately screen all parking, parking areas shall be screened with a low wall, berm, evergreen hedge, or combination thereof, at least three feet in height.	This guideline ensures that receptors in the viewshed of the high density residential uses are not exposed to views of large expanses of parking lots, which can be perceived as a negative aesthetic impact.
Trash enclosures shall be designed to the standards identified in the City of Turlock Zoning Ordinance. Trash enclosures shall be screened from upper level unit views.	This guideline ensures that receptors in the viewshed of the high density residential uses are not exposed to views of trash enclosures, which can be perceived as a negative aesthetic impact.
<u>Community Commercial Uses</u>	
Service and loading functions shall be located behind the building.	These guidelines ensure that receptors in the viewshed of the community commercial uses are not exposed to views of service and loading areas, which may be perceived as a negative aesthetic impact.
Service areas are to be separate and screened from public areas by the use of walls and/or landscaping.	

Land Use Type/Guideline	Effect
<p>All rooftop equipment shall be screened from public view.</p>	<p>This guideline ensures that receptors in the viewshed of the community commercial uses are not exposed to views of rooftop equipment, which may be perceived as a negative aesthetic impact.</p>
<u>Office Uses</u>	
<p>Service and loading functions shall be located behind the building.</p>	<p>These guidelines ensure that receptors in the viewshed of the office uses are not exposed to views of service and loading areas, which may be perceived as a negative aesthetic impact.</p>
<p>Service areas are to be separate and screened from public areas by the use of walls and landscaping.</p>	
<p>Parking areas shall be located behind building(s) to the extent possible. Parking may not be located between the building and the arterial roadway. Parking areas shall be landscaped, lighted, and provide for pedestrian circulation.</p>	<p>This guideline ensures that receptors in the viewshed of the office uses are not exposed to views of large expanses of parking lots, which can be perceived as a negative aesthetic impact.</p>
<p>All sides of the building shall be architecturally articulated and receive appropriate enhancement through the use of landscape treatments and accent lighting. Exterior walls that exceed 200 feet in length shall be provided with a change of plane, material, or texture.</p>	<p>This guideline ensures that large swaths of buildings are not developed without architectural elements to provide visual interest.</p>
<p>All rooftop equipment shall be screened from public view.</p>	<p>This guideline ensures that receptors in the viewshed of the office uses are not exposed to views of rooftop equipment, which may be perceived as a negative aesthetic impact.</p>
<u>Elementary School Use</u>	
<p>The design and siting of school facilities should take into account the aesthetic affects of the surrounding neighborhoods. An architectural style, building materials, and colors appropriate to the surrounding neighborhoods should be utilized. The design of landscaping and furnishings (e.g., lighting, signage, etc.) should complement the streetscape and other community facilities.</p>	<p>This guideline ensures that the school site in the Morgan Ranch Master Plan area will be developed in a manner that is compatible with the surrounding neighborhoods.</p>

Source: Morgan Ranch Master Plan, 2012

Implementation of the proposed project will alter the visual character of the project site from agricultural fields/rural residential to an urban mixed use development. Although this land use conversion could be perceived as a negative aesthetic impact in comparison with the project site’s current agricultural appearance, the proposed project would be developed in accordance with the Master Plan. The Master Plan includes development standards and guidelines that are intended to improve and enhance the visual character of the project site and surrounding area. Therefore, the proposed project would not significantly degrade the existing visual character of the site or surrounding area.

**Conclusion:** Development of the proposed project in compliance with the development standards and guidelines of the Morgan Ranch Master Plan will ensure that the project’s impacts on visual character are *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.1.2 - Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.**

The project site currently includes some sources of light and glare from the existing structures and improvements on site as well as from vehicles traveling on adjacent roadways. The surrounding areas also include sources of light and glare from the nearby residential and commercial uses as well as the vehicle traffic on adjacent roadways. The proposed project would introduce new sources of light and glare to the project site. The project would introduce exterior lighting on building structures, ancillary structures, roadways, and parking lots. Additional sources of light would include security lighting, minimal nighttime traffic, and light associated with the nighttime use of the commercial uses, including sign illumination. Lighting from the site would be visible from surrounding areas and include sensitive receptors such as the residences to the north and east of the project site. In addition, lighting could affect the visual character of the nighttime sky.

The City of Turlock has adopted lighting standards that apply to the installation and illumination of exterior light fixtures. The Morgan Ranch Master Plan also includes development standards, design guidelines and design features that minimize light and glare impacts.

Table 3.1-2 provides a summary of the lighting design features included in the Morgan Ranch Master Plan.

**Table 3.1-2  
Morgan Ranch Master Plan Lighting Design Features**

<b>Lighting Design Feature</b>
Lighting should be provided to ensure safe environments, but should not cause areas of intense light or glare.
Lighting should be sensitive to adjacent land uses.
Architectural features or lighting fixtures that provide down-lighting and lighting that is shielded from adjacent uses should be implemented.
Street lighting standards should be spaced dependent upon City requirements.
Site lighting shall meet or exceed the character and quality of existing site lighting in the commercial areas.
Wherever possible, pedestrian lighting shall be pedestrian in scale not to exceed sixteen feet in height; fourteen feet or less is encouraged.

Source: Morgan Ranch Master Plan, 2012

Compliance with adopted City standards will help to reduce the potential negative impact of light and glare from the project; however, lighting for streets, parking lots, walkways and buildings

would still have the potential to create light pollution within, and in the vicinity of, the proposed project site.

**Conclusion:** This impact is considered *potentially significant* and the following mitigation measures are required to address project impacts.

**Mitigation Measure #3.1.2a:** Lighting fixtures shall be designed to produce the minimum amount of light necessary for safety purposes. All lighting in the project area shall be shielded, directed downward and away from adjoining properties and rights-of-way. Light shields or equivalent shall be installed and maintained consistent with manufacturer's specifications, and shall reduce the spillage of light onto adjacent properties to less than a one-foot-candle standard, as measured at the adjacent property line.

**Mitigation Measure #3.1.2b:** The light source for externally lighted signs shall be hidden or screened from view from adjoining properties and rights-of-way. Internally illuminated signs shall use translucent individual copy letters with an opaque background so only the lettering is illuminated.

**Mitigation Measure #3.1.2c:** Structures shall use glare reducing materials to the maximum extent practicable, including non-reflective paints and building materials, to reduce the amount of glare created by the project structures.

**Effectiveness of Mitigation:** Implementation of the above mitigation measures will reduce the impact to a *less than significant* level.

## 3.2 Agricultural Resources

### 3.2.1 INTRODUCTION

This section describes the existing agricultural resources and potential environmental effects from project implementation on the project site and its surrounding area. Descriptions and analysis in this section are based on information provided by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), the United States Department of Agriculture (USDA), the Turlock General Plan Existing Conditions Report, and the Turlock General Plan.

### 3.2.2 ENVIRONMENTAL SETTING

#### *Agricultural Economy*

Agriculture is a major activity throughout Stanislaus County and the San Joaquin Valley. The City of Turlock is located in Stanislaus County, the State’s sixth largest agricultural county in terms of agricultural production. The California Department of Conservation Farmland Mapping and Monitoring Program indicated that approximately 42 percent of the County’s land area was in cultivated agricultural production in 2010. Stanislaus County has consistently maintained its position as the sixth largest agricultural economy in the State during the past 5 years for which data is available. Between 2006 and 2010, the production value of Stanislaus County crops increased from \$2.1 billion to \$2.5 billion. Table 3.2-1 summarizes agricultural production in the County between 2006 and 2010.

Table 3.2-2 summarizes the top 10 agricultural commodities produced in Stanislaus County by dollar value in 2010. As shown in the table, milk is the number one commodity in Stanislaus County with a production value of \$598 million.

**Table 3.2-1  
Stanislaus County Agricultural Economy**

<b>Year</b>	<b>\$ Value (Billions)</b>	<b>Rank in State</b>
2010	2.5	6
2009	2.3	6
2008	2.4	6
2007	2.4	6
2006	2.1	6

Source: California Department of Food and Agriculture, California Agricultural Resource Directory 2007-2011

**Table 3.2-2  
Stanislaus County Agricultural Commodity Summary (2011)**

<b>Rank</b>	<b>Commodity</b>	<b>\$ Value (Millions)</b>
1	Milk, All	598
2	Almonds	390
3	Chickens, All	308
4	Cattle & Calves, All	167
5	Tomatoes, All	147
6	Walnuts	116
7	Silage, All	107
8	Deciduous Fruit & Nut Nursery	77
9	Turkeys, All	72
10	Peaches, All	54
Top Ten Total		4,038

Source: Stanislaus County Agricultural Commissioner, Agricultural Crop Report, August 2011

**Important Farmlands**

Four major classifications of farmland adopted by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) are located within the County. These classifications, as defined below, outline the fertility of soils.

“Prime Farmland” is land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods.

“Farmland of Statewide Importance” is land other than Prime Farmland which has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

“Unique Farmland” is land which does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, that has been used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

“Farmland of Local Importance” is either currently producing crops, has the capability of production, or is used for the production of confined livestock. Farmland of Local Importance is

land other than Prime Farmland, Farmland of Statewide Importance or Unique Farmland. This land may be important to the local economy due to its productivity or value. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

The State of California also prepares Important Farmland maps for agricultural counties and monitors permanent farmland conversion. The California Department of Conservation, Division of Land Resource Protection’s Farmland Mapping and Monitoring Program (FMMP) employs the above described NRCS classifications with the addition of three other categories, as follows:

“Grazing Land” is defined in Government Code §65570(b)(3) as: "...land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock." The minimum mapping unit for Grazing Land is 40 acres. Grazing Land does not include land previously designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance, and heavily brushed, timbered, excessively steep or rocky lands which restrict the access and movement of livestock.

“Urban and Built-Up Land” is used for residential, industrial, commercial, construction, institutional, public administrative purposes, railroad yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures, and other development purposes. Highways, railroads, and other transportation facilities are mapped as a part of Urban and Built-up Land if they are a part of the surrounding urban areas.

“Other Land” is all other land that does not meet the criteria of any other category.

Table 3.2-3 provides a summary amount and type of total acreage in Stanislaus County between 2002 and 2010, using the classifications of agricultural land provided by the California Department of Conservation FMMP, as set forth on the County’s Important Farmland Map. As shown in the table below, this acreage has remained relatively constant between 2002 and 2010. Between 2004 and 2010 this acreage has actually increase by 1.7 percent in total acreage.

**Table 3.2-3  
Stanislaus County Important Farmland Summary**

Classification	Acres				
	2002	2004	2006	2008	2010
Prime Farmland	260,372	262,045	256,605	256,166	253,435
Farmland of Statewide Importance	30,073	29,747	29,925	31,448	31,474
Unique Farmland	61,556	70,137	75,444	81,367	87,527
Farmland of Local Importance	29,537	35,050	33,706	31,160	31,366
<b>Important Farmland Total</b>	<b>381,538</b>	<b>396,979</b>	<b>395,680</b>	<b>400,141</b>	<b>403,802</b>
Total County Area	869,338	970,168	970,169	970,171	970,171

Notes:

(1) Total Acreage Inventoried increased by 100,830 acres in 2004 due to the availability of soil survey data in the northeastern part of the county. With this addition, Stanislaus County is now 100 percent

Source: California Department of Conservation, 2004–2010.

**Project Site**

**LAND CLASSIFICATION**

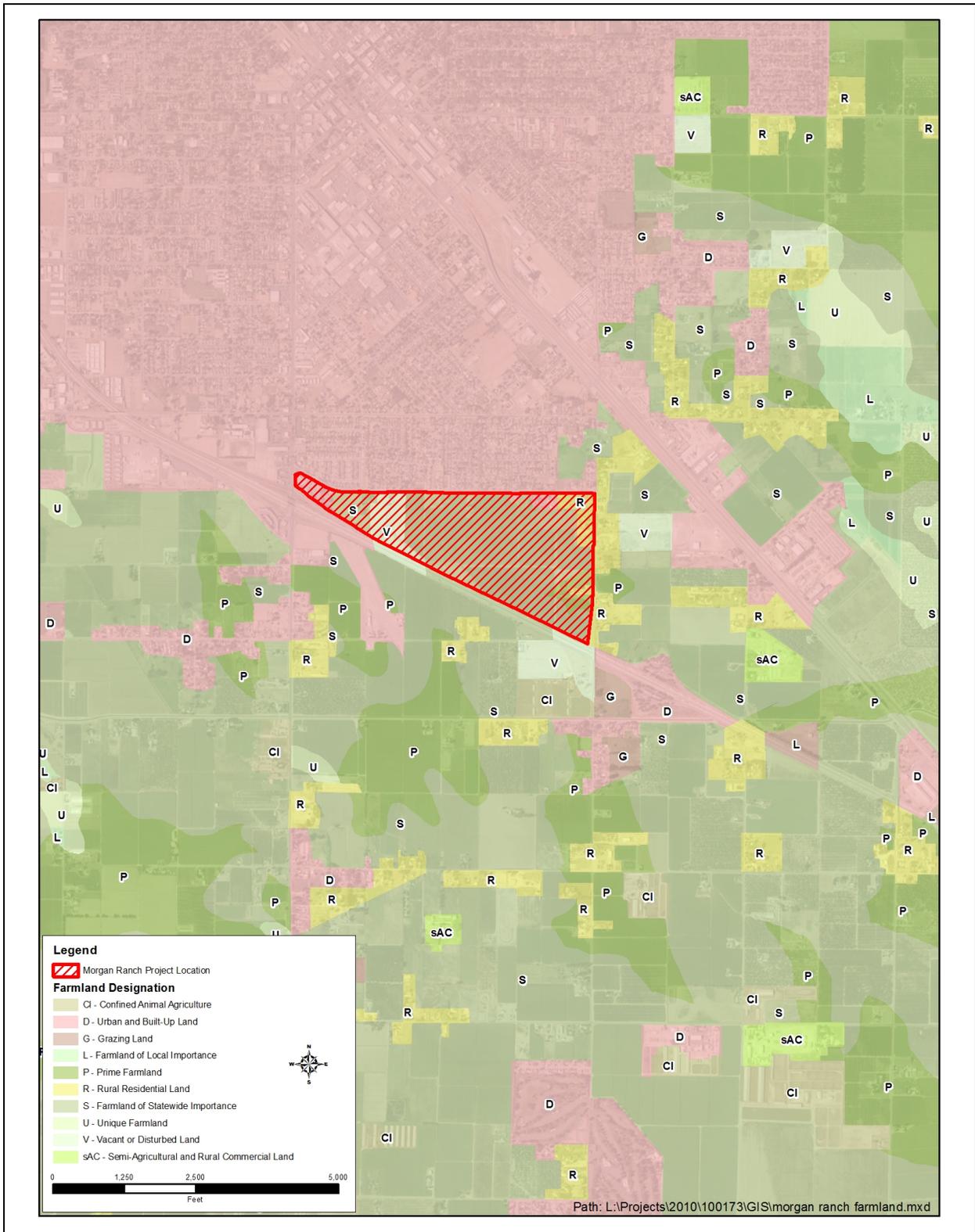
According to the FMMP (see Figure 3.2-1), the project site contains the following categories of land:

- Prime Farmland (8 acres);
- Farmland of Statewide Importance (129 acres);
- Rural Residential Land (10 acres);
- Urban and Built-Up Land (9 acres); and
- Vacant or Disturbed Land (14 acres).

**SOIL SUITABILITY**

The Land Capability Classification System is used by the USDA, NRCS to determine a soil's agricultural productivity. The Land Capability Classification indicates the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops and the way they respond to management. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receiving the highest rating (Class I). The "prime" soil classification indicates the absence of soil limitations, which if present, would require the application of management techniques (e.g., drainage, leeching, special fertilizing practices) to enhance production. Specific subclasses are also utilized to further characterize soils. A general description of soil classifications, as defined by NRCS, is provided below in Table 3.2-4.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, e, w, s, or c, to the class numeral, for example, IIe. The letter e shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; w shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); s shows that the soil is limited mainly because it is shallow, droughty, or stony; and c, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.



 Quad Knopf	<h2 style="margin: 0;">FARMLAND MAPPING AND MONITORING PROGRAM</h2>	Figure 3.2-1
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**Table 3.2-4  
Land Capability Classification**

<b>Soil Classification</b>	<b>Description</b>
I	Soils have few limitations that restrict their use.
II	Soils have moderate limitations that reduce the choice of plants, or that require special conservation practices.
III	Soils have severe limitations that reduce the choice of plants, require conservation practices, or both.
IV	Soils have very severe limitations that reduce the choice of plants, require very careful management, or both.
V	Soils are not likely to erode but have other limitations; impractical to remove soils that limit their use largely to pastures or range, woodland, or wildlife habitat.
VI	Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture, or range, woodland, or wildlife habitat.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland or wildlife habitat.
VIII	Soils and landforms have limitations that preclude their use for commercial plant production and restrict their use to recreation, wildlife habitat, or water supply, or to aesthetic purposes.

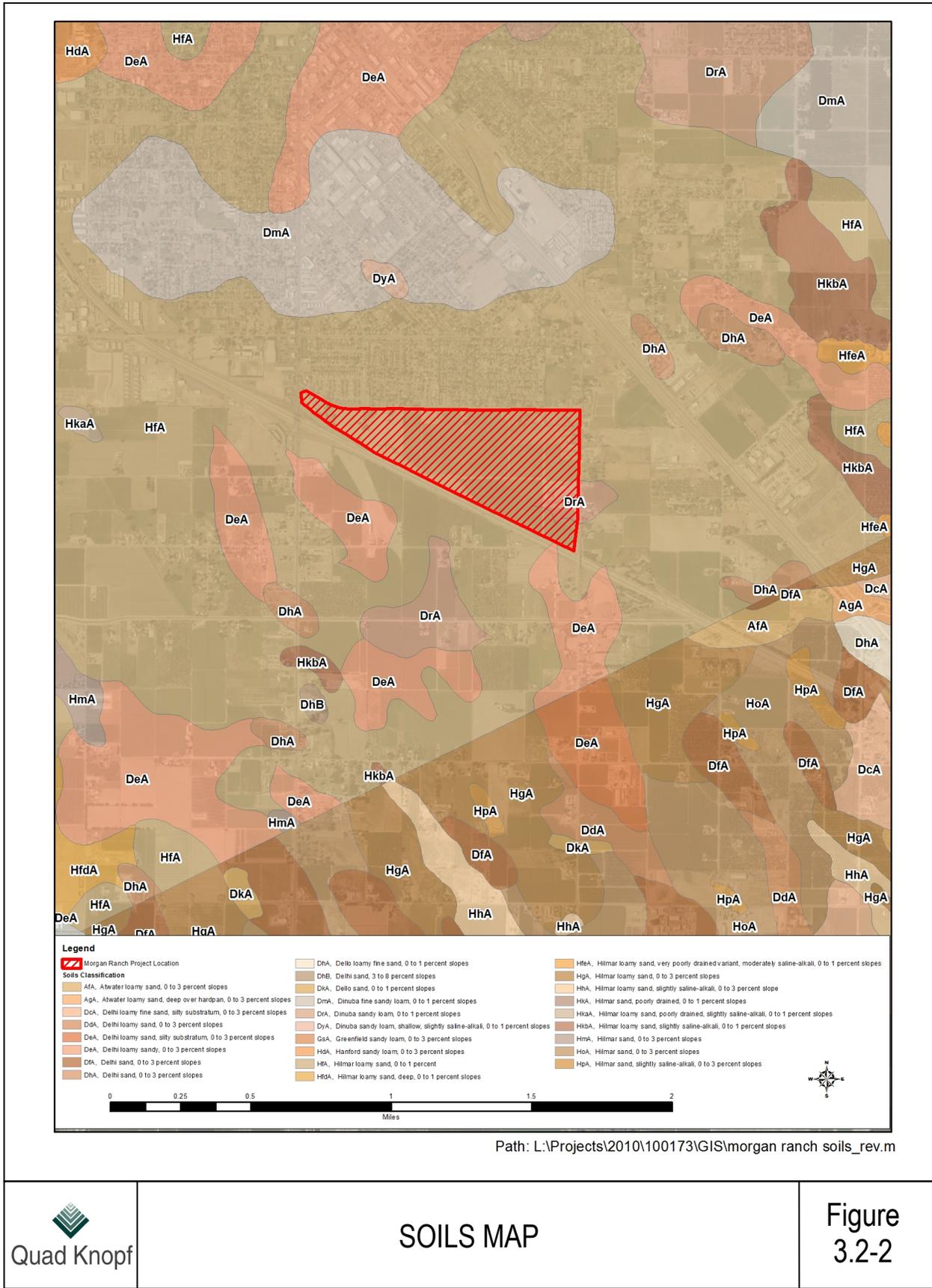
Source: USDA Natural Resources Conservation Service, Web Soil Survey, 2012

As shown in Figure 3.2-2 the project site contains mostly Hilmar Loamy Sand (HfA) (95 percent) with minor amounts of Dinuba Sandy Loam (DrA) (5 percent). Table 3.2-5 presents the soil types, their designations, capability classifications, Storie index, and the percent of the project site that they occupy.

**Table 3.2-5  
Project Site Soils**

<b>Symbol</b>	<b>Description</b>	<b>Farmland Designation</b>	<b>Soil Capability Classification</b>	<b>Storie Index Rating</b>	<b>Percent of Total Project Site</b>
DrA	Dinuba Loamy Sand, 0-1% slopes	Prime	IIw	77	5
HfA	Hilmar Sandy Loam, 0-3% slopes	Statewide Importance	IIIw	69	95

Source: USDA Natural Resources Conservation Service, 2012; Eastern Stanislaus Area, California



SOILS MAP

Figure 3.2-2

The Turlock General Plan Existing Conditions Report (Existing Conditions Report) characterizes Hilmar Loamy Sand as a soil of Statewide Importance that covers most of the south and southeast of the General Plan Planning Area. Hilmar Loamy Sand's parent material is wind modified granite-derived alluvium. It is not a hydric soil; rather, it can drain somewhat excessively. It has a low shrink swell potential. The Existing Conditions Report characterizes Dinuba Sandy Loam as a soil that constitutes Prime Farmland, if irrigated. Dinuba Sandy Loam is found covering most of the northwest, southwest, and eastern portions of the General Plan Planning Area. Dinuba Sandy Loam is moderately well drained and its parent material is granite-derived alluvium. Dinuba Sandy Loam is not a hydric soil and has low shrink swell potential.

Hilmar Loamy Sand is a Class IIIw soil (irrigated) and Class IVs (non-irrigated). Dinuba Sandy Loam is a Class IIw soil (irrigated) and Class 4s (non-irrigated).

## **STORIE INDEX**

The Storie Index is a soil rating based on soil properties that govern a soil's potential for cultivated agriculture in California. Four factors that represent the inherent characteristics and qualities of the soil are considered in the index rating: profile characteristics, texture of the surface layer, slope, and other factors (e.g., drainage, salinity). A score ranging from 0 to 100 percent is determined for each factor, and the scores are then multiplied together to derive an index rating. Storie Index ratings have been combined into six grade classes as follows: Grade 1 (excellent), 100 to 80; Grade 2 (good), 79 to 60; Grade 3 (fair), 59 to 40; Grade 4 (poor), 30 to 20; Grade 5 (very poor), 19 to 10, and Grade 6 (nonagricultural), less than 10.

All of the soils on the project site have a good Storie Index rating of 2 because the soils have a high agricultural value.

## **WILLIAMSON ACT CONTRACTS**

There are no parcels within the project site that are under Williamson Act contract. There is an approximately 30 acre parcel within 0.25 mile of the project site's southeastern boundary that is under a Williamson Act contract.

### **3.2.3 REGULATORY SETTING**

#### ***Federal***

#### **FARMLAND PROTECTION ACT**

The Farmland Protection Policy Act was passed into federal law as part of the Agriculture and Food Act of 1981 (Public Law 97-98). The Act was passed in response to the National Agricultural Land Study of 1980-1981 which found that millions of acres of farmland were being converted in the United States each year and a related report which found that much of this conversion was the result of programs funded by the federal Government. The intent of the Act is to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that – to the extent possible – federal programs are

administered to be compatible with state and local units of government and private programs and policies to protect farmland.

### **FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT**

The federal Insecticide, Fungicide, and Rodenticide Act establishes procedures for regulating the use and sale of pesticides to protect human health and the environment, and it provides federal control of pesticide distribution, sale, and use. The legislation governs the registration and labeling of pesticides and enforcement against banned and unregistered products.

#### **State**

### **FARMLAND MAPPING AND MONITORING PROGRAM (FMMP)**

In 1975, the Soil Conservation Service (since renamed Natural Resources Conservation Service [NRCS]) of the United States Department of Agriculture began farmland mapping efforts across the nation, with the goal of producing agricultural resource maps based on soil quality and land use. As part of this nationwide agricultural land use mapping effort, the NRCS developed a series of definitions known as Land Inventory Monitoring (LIM) criteria. The LIM criteria classify the land's suitability for agricultural production; suitability includes both the physical and chemical characteristics of soils and the actual land use. In the early 1980's, to continue these farmland mapping efforts in California, the Farmland Mapping and Monitoring Program (FMMP) was created within the California Department of Conservation (DOC). The FMMP carries on these mapping activities on a continuing basis and with a greater level of detail; this is accomplished by using a modified LIM criteria. These criteria utilize the NRCS and Storie Index Rating Systems, but also consider physical conditions such as a dependable water supply for agricultural production, soil temperature range, depth of the ground water table, flooding potential, rock fragment content and rooting depth. The FMMP prepares Important Farmlands maps for all counties in California, using the modified LIM criteria as well as current land use information.

The Important Farmlands maps identify four agriculture listings: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban Land, and Other Land.

### **WILLIAMSON ACT**

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Local governments may receive an annual subvention of foregone property tax revenues from the state via the Open Space Subvention Act of 1971.

## **FARMLAND SECURITY ZONE ACT**

A Farmland Security Zone (FSZ) contract is a contract between a private landowner and a county that enforceably restricts land to agricultural or open space uses. The minimum initial term is 20 years. Like a Williamson Act contract, FSZ contracts renew annually unless either party files a “notice of nonrenewal”. There are no lands under FSZ contract within the project vicinity.

## **PUBLIC RESOURCES CODE SECTION 21060.1**

Public Resource Code Section 21060.1 defines agricultural land for the purposes of assessing environmental impacts using the FMMP. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California.

## **STATE PESTICIDE AND CHEMIGATION LAWS AND REGULATIONS**

Agricultural water quality issues involving pesticides are generally handled by the Regional Water Quality Control Boards (RWQCBs) in cooperation with the California Water Resources Control Board (CWRCB), the Department of Pesticide Regulation (DPR), and County Agricultural Commissioners, as directed by the Porter-Cologne Water Quality Control Act. The California Department of Health Services (CDHS) may delegate responsibility for detecting/monitoring contaminants to county health officers when there is organic chemical contamination of public water systems. The CDHS and the DPR share information on all monitoring results which are positive for pesticide residues, in order to identify the source of contamination.

Pesticide sales and use are controlled by the California Department of Pesticide Regulation and by County Agricultural Commissioners’ in each of the State’s 58 counties.

### ***Local***

## **STANISLAUS COUNTY GENERAL PLAN AGRICULTURAL ELEMENT**

Land outside of the Turlock city limits is subject to the policies and regulations of Stanislaus County. The Agricultural Element of the Stanislaus County General Plan outlines three goals: to strengthen the agricultural sector of the county’s economy; to conserve agricultural land for agricultural uses; and to protect the natural resources that sustain agriculture in the county. Policies supporting the second goal include promoting participation in the Williamson Act, discouraging farmland conversion to urban uses, and mitigating the impacts of converting farmland. Policy 2.5 directs development away from the County’s most productive agricultural land to the greatest extent possible, and Policy 2.8 states that the agricultural land shall not be converted to residential subdivision. Policy 2.14 states that the County will assess proposed conversion of agricultural land for its potential to result in a significant adverse environmental impact, and will require preparation of an EIR where needed to fully assess impacts. Under Policy 2.15, if a project, general plan or community plan amendment results in the conversion of

agricultural land to residential uses, then County policy requires a 1:1 replacement of the land, of equal quality, elsewhere in Stanislaus County. Replacement can be in the form of purchasing agricultural conservation easements or contributing in-lieu fees, as detailed in the Farmland Mitigation Program Guidelines, Appendix B of the Stanislaus County General Plan.

The Stanislaus County General Plan’s Agriculture Element also recognizes the legitimate interests of cities to grow and prosper, and the County is committed to not oppose “reasonable requests” to expand, provided the resulting growth minimizes impacts to agricultural land, and to help manage development in Sphere of Influence (SOI) areas.

## **STANISLAUS COUNTY CODE AGRICULTURAL LAND POLICIES**

Chapter 9.32 of the Stanislaus County Code contains the County’s Agricultural Land policies. Recognizing the value of agricultural land and production, it is the County’s stated purpose to reduce the loss of its agricultural resources by limiting the conditions under which agricultural operations can be considered a nuisance. Section 9.32.030 states:

No agricultural activity, operation, or facility, or appurtenances thereof, conducted or maintained on agricultural lands for commercial purposes, and in a manner consistent with proper and accepted customs and standards as established and followed by similar agricultural operations in the same locality, shall be or become a nuisance, private or public, after the same has been in operation for more than three years if it was not a nuisance at the time it began. (Ord. CS 456 §2 (part), 1991).

## **STANISLAUS COUNTY AGRICULTURAL COMMISSIONER**

The Stanislaus County Agricultural Commissioner/Sealer, under direction of the California Department of Food and Agriculture and the California Department of Pesticide Regulation, conducts law enforcement and service functions required by state and federal laws and regulations as well as law enforcement and service functions required by measures and ordinances authorized by the Stanislaus County Board of Supervisors. The primary purposes of this department are to protect the agricultural industry, environment, and the public health, safety and welfare.

## **CITY OF TURLOCK GENERAL PLAN**

The City of Turlock General Plan includes the following relevant policies related to agricultural resources that are applicable to the proposed project:

### ***Chapter 3 – New Growth Areas and Infrastructure***

**Policy 3.2-c Urban/rural edge.** Where master plan areas meet the edge of the study area boundary (outside of which land remains in agricultural use), deep landscaped setbacks and agricultural buffers shall be used to screen the edge of urban development. Acceptable buffer types and setback requirements are found in Section 6.1.

*Chapter 6 – City Design*

- Policy 6.1-c Promote compact growth.** Maintain a compact growth pattern to avoid sprawl and preserve agricultural land and open space.
- Policy 6.1-d Minimize conflict.** Minimize conflict between urban and agricultural uses.
- Policy 6.1-f Contiguous growth.** Continue present policies of requiring growth to be contiguous to existing urban development.
- Policy 6.1-j Minimize urban-agricultural conflicts.** Continue urban expansion in a form that minimizes the potential for urban-agricultural conflicts.
- Policy 6.1-k Agricultural Buffer Design.** Implement an “agricultural-urban buffer design” to minimize the impact of urban development near active agricultural operations. Typically roadways and irrigation canals are used to demarcate boundaries between urban and agricultural uses.

*Chapter 7 – Conservation*

- Policy 7.2-a Preserve Farmland.** Promote the preservation and economic viability of agricultural land adjacent to the City of Turlock.
- Policy 7.2-b Limit Urban Expansion.** Retain Turlock’s agricultural setting by limiting urban expansion to designated areas and minimizing conflicts between agriculture and urban activities.
- Policy 7.2-e Require Compact Development.** Require development at densities higher than typical in recent years in order to limit conversion of agricultural land and minimize the urban/agricultural interface.
- Policy 7.2-f Allow Agricultural Uses to Continue.** Where agriculture exists within City limits, allow uses to continue until urban development occurs on these properties, including the establishment of community gardens serving the immediate neighborhood.
- Policy 7.2-i Support Right to Farm.** Support the implementation of Stanislaus County’s Agricultural Element and Right-to-Farm ordinance.
- Policy 7.2-j Create Buffer.** Require a permanent buffer to be established between residential and agricultural activities along the long-term urban edge of Turlock.

The project’s consistency with the General Plan policies is assessed in Chapter 3, Section 3.10 Land Use and Planning.

**CITY OF TURLOCK ZONING**

Turlock Municipal Code Section 5-24 Protection of Agricultural Operations was adopted following the General Plan Update. Applicable to agricultural lands and operations, this ordinance was enacted to protect and encourage the development and improvement of Turlock’s agricultural operations for the production of food and other agricultural products.

**3.2.4 METHODOLOGY**

Quad Knopf, Inc. evaluated the proposed project’s potential environmental impacts on agricultural resources through the use of the Land Evaluation and Site Assessment (LESA) model issued by the California Department of Conservation. The CEQA Guidelines identify the LESA model as an appropriate instrument to assess the significance of farmland conversion impacts. Information on the LESA model is provided below. The LESA model worksheets are provided in Appendix B.

**Land Evaluation and Site Assessment Model (LESA)**

The Land Evaluation and Site Assessment (LESA) model was released by the Natural Resources Conservation Service (NRCS) in 1981. It is designed to provide objective ratings of the agricultural suitability of land compared to demands for nonagricultural uses of land. The model is composed of two sets of factors. The first set, Land Evaluation (LE), includes factors that measure the inherent soil-based qualities of land as they relate to agricultural suitability. The second set, Site Assessment (SA), includes factors that are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land. The final LESA score is based on a scale of 0 to 100 with each set of factors contributing up to 50 points. Table 3.2-6 below shows the thresholds of significance established by the NRCS.

**Table 3.2-6  
California LESA Model Scoring Thresholds**

<b>Total LESA Score</b>	<b>Scoring Decision</b>
0 to 39 Points	Not Considered Significant
40 to 59 Points	Considered Significant only if LE and SA subscores are each greater than or equal to 20 points.
60 to 79 Points	Considered Significant unless either LE or SA subscore is less than 20 points.
80 to 100 Points	Considered Significant

Source: California Department of Conservation Office of Land Conservation, 1997

The California Agricultural LESA Model is composed of six different factors. Two Land Evaluation Factors are based upon measures of soil resource quality. Four Site Assessment factors provide measures of a given project size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, each of these factors is separately rated on a 100 point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project, with a maximum attainable score of 100 points. According to the LESA Model the land for the project site has a rating of 56.91 when land capability classification, Storie Index, project size, water resource

availability, and surrounding agricultural lands factors are taken into account. The LESA worksheets and scoring manual are located in Appendix B.

### 3.2.5 IMPACT EVALUATION CRITERIA

According to the *CEQA Guidelines*, a project will normally have significant adverse impacts associated with agricultural resources if the project:

- a) Converts 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 uses.
- 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 § 12220(q), timberland (as defined by Public Resources Code § 4526), or timberland zoned Timberland Production (as defined by Government Code § 51104(g))? (Refer to Chapter 7, Effects Found Not To Be Significant)
- d) Result in the loss of forest land or conversion of forest land to non-forest use? (a) (Refer to Chapter 7, Effects Found Not To Be Significant)
- 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 forest land to non-forest use?

### 3.2.6 IMPACT ANALYSIS

**Impact #3.2.1 – Conversion of 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 uses.**

According to the FMMP, approximately 81 percent of the project site is categorized as farmland and 19 percent is non-farmland. The proposed project will result in the loss of 8 acres of agricultural land designated Prime Farmland and 129 acres of Farmland of Statewide Importance. The project site is within the current City of Turlock’s city limits. There are currently agricultural, residential, and commercial uses within the project area. According to the Existing Conditions Report prepared for the General Plan Update, there are truck and berry crops and grain, hay, and field crops grown on the project site (Truck and berry crops include bush berries, tomatoes, melons, onions, peas, potatoes, spinach, flowers, asparagus, and other fruits and vegetables that are relatively perishable).

In order to determine the relative significance of this conversion, an agricultural conversion study was done using California Department of Conservation’s LESA Model and the results are summarized in Table 3.2-7. According to the LESA Model the land for the project has a rating of 58.3 when land capability classification, Storie Index, project size, water resource availability,

and surrounding agricultural lands factors are taken into account. A score from 40 to 59 points is considered significant only if the Land Evaluation (LE) and the Site Assessment (SA) subscores are each greater than or equal to 20 points. The LE subscore was 29.8 and the SA subscore was 28.5. Therefore, the LESA Model concludes that conversion of the project site to a non-agricultural use is considered significant.

**Table 3.2-7  
Land Evaluation and Site Assessment (LESA) Model Scoring Summary**

Category	Factor	Points	Factor Weigh	Weighted Points	Remarks
Land Evaluation	Land Capability Class	61.1	0.25	15.3	The project site contains a majority of Class III soils, which have some agricultural limitations.
	Storie Index	58.3	0.25	14.6	The project site has a low Storie Index because of the soil limitations.
	Subtotal		0.50	22.5	—
Site Assessment	Project Size	100	0.15	15	The project site size rating is 100. The soils are not high quality; however, the project is of sufficient size to warrant a high point value.
	Water Resources Availability	95	0.15	12	The project site is assumed to have access to well water, although economic restrictions may limit water availability during drought years.
	Surrounding Agricultural Lands	0	0.15	0	Farmland accounts for approximately 20 percent of the surrounding land uses, which translates to 0 points.
	Surrounding Protected Resource Lands	0	0.05	0.0	Protected resource lands account for five percent of surrounding acreage, which translates to zero points.
	Subtotal			0.50	28.5
Total				58.3	—

Notes: LESA scoring sheet provided in Appendix B.  
Source: Quad Knopf, Inc , 2012.

The City of Turlock General Plan designates the project site for urban uses. Current land use designations on the project site include: Heavy Commercial (HC), High Density Residential (HDR), Low and Medium Density Residential (LDR/MDR), Low Density Residential (LDR), and Park (P). The area is also designated as a Master Plan area, which requires the preparation of Master Plan that provides for growth in the City in phases. These land use designations

indicate that the City has contemplated the conversion of this agricultural land to urban uses over the planning horizon of the General Plan and, therefore, does not view the project area as a preferred location for permanent agricultural uses. The City of Turlock General Plan Environmental Impact Report (EIR) found that buildout of the General Plan would convert substantial amounts of Important Farmland to non-agricultural use and would result in a significant and unavoidable impact.

Although conversion of the project site to urban use would reflect the land use assumptions contained in the City of Turlock General Plan, farmland is an important resource to the region, and direct conversion of Important Farmland to urban land uses would be considered a significant impact under LESA methodology.

This project is consistent with the General Plan as shown in Section 3.10 of the EIR and would be developed in accordance with the policies contained in the General Plan. The General Plan reflects a policy determination to allow a certain amount of growth to occur in the Study Area, which necessitates conversion of farmland to urban uses. The General Plan includes growth management policies to prevent the premature conversion of farmland, by encouraging infill development, by requiring new development to be built at considerably higher densities than Turlock has traditionally seen, and by phasing of new master planned growth areas. These policies are intended to offset the impact to agricultural land conversion to the greatest degree possible. There are no project-specific feasible mitigation measures to reduce the impact from conversion of agricultural lands to non-agricultural use based on the following:

Courts have opined that conservation easements or agricultural impact fees do not completely mitigate agricultural impacts because they do not create additional, offsetting agricultural lands. They simply ensure the longer-term operation of existing agricultural operations and the loss of agricultural lands is not reduced.

**Conclusion:** Because prime and important agricultural lands are a non-renewable environmental resource, this impact is *significant, unavoidable, and irreversible*.

**Mitigation Measures:** None are available.

**Impact #3.2.2 - Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.**

Most of the land that lies on the fringe of existing development within the City of Turlock has been or is currently under agricultural use. Urban uses located adjacent to agricultural land typically have the potential to create conflicts with adjacent agricultural practices. These conflicts result in operational inefficiencies such as restrictions on the use of agricultural chemicals, complaints regarding noise, dust and odors, trespassing and vandalism that can cause property owners to consider converting their land to an urban use.

The Master Plan area is surrounded by residential uses to the north, commercial uses to the west and agricultural uses to the east and south. Although the land to the south and east is currently used for agriculture, it is designated for urban uses and it will eventually be developed. The

designation of urban land uses for areas surrounding the project site indicates the City has planned for the conversion of the agricultural land within the City's planning boundary. The City's General Plan includes policies to minimize conflicts with agricultural uses and to require the sequencing of growth so that minimal fragmentation of agricultural land will occur.

The proposed project is located in an area identified for future growth and is contiguous to existing development. The proposed project would be developed in accordance with General Plan policies that avoid the premature conversion of agricultural lands.

General Plan Land Use Policy 6.1-k identifies the use of buffers at the interface of urban development and farmland, such as roadways, to minimize conflict between urban and agricultural uses. In this case, the project incorporates Golf Road and SR 99 between the project site and the agricultural uses/open space. Although the General Plan contemplates the long-term conversion of the lands to south and east of the project site to non-agricultural use, the use of a buffer is a widely recognized planning technique intended to prevent the premature conversion of agricultural land to non-agricultural use. As such, the proposed project would be consistent with the General Plan's policies intended to avoid premature conversion of farmlands; therefore, the proposed project would not create additional pressures to convert this land to non-agricultural use. Impacts would be less than significant.

**Conclusion:** The proposed project would not create new development pressures or result in changes to the environment that would result in the conversion of farmland to convert this land to non-agricultural use. Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation is necessary.

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### **3.3 Air Quality**

#### **3.3.1 INTRODUCTION**

This section describes the impacts of the proposed project on local and regional air quality, based on the assessment guidelines of the San Joaquin Valley Air Pollution Control District (SJVAPCD). More specifically, the section describes existing air quality, construction-related impacts, direct and indirect emissions associated with the proposed project, the local and regional impacts of those emissions, and mitigation measures warranted to reduce or eliminate any identified significant impacts. Quad Knopf performed air quality analysis in compliance with the adopted SJVAPCD *Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI)* for the proposed project. It included construction and operational air quality modeling. The modeling output is provided in Appendix C.

#### **3.3.2 ENVIRONMENTAL SETTING**

The project is located in Turlock, which is located in the San Joaquin Valley Air Basin (Air Basin) (Figure 3.3-1). Regional and local air quality is impacted by topography, dominant airflows, atmospheric inversions, location, and season.

##### ***Regional Air Quality***

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, interact with the physical features of the landscape to determine the movement and dispersal and, consequently, their effect on air quality. The combination of topography and inversion layers generally prevents dispersion of air pollutants in the Air Basin.

##### ***Topography***

The Air Basin is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation). The mountains surrounding the Air Basin form natural horizontal barriers to the dispersion of air contaminants.

##### ***Climate and Meteorology***

The Air Basin has an “inland Mediterranean” climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight is a catalyst in the formation of some air pollutants (such as ozone), and the Air Basin averages more than 260 sunny days per year. Temperatures in the City of Turlock (period of record from 1/1/1893 to 9/30/2012) range from an average maximum high of 94.6 degrees Fahrenheit (°F) in July to an average minimum low of 38.0°F in December. The average annual rainfall in the project area as recorded between 1893 and 2012 is 11.86 inches (Western Regional Climate Center 2012).



 Quad Knopf	<b>CALIFORNIA AIR BASINS</b>	<b>Figure 3.3-1</b>
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**Dominant Airflow**

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. Marine air moves into the Air Basin from the San Joaquin River Delta. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Mojave Desert Air Basin. As the wind moves through the Air Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

**Inversions**

Inversions are also an important component of regional air quality. In general, air temperature decreases with distance from the earth’s surface, creating a gradient from warmer air near the ground to cooler air at elevation. Under normal circumstances, the air close to the earth warms as it absorbs surface heat and begins to rise. Winds occur when cooler air rushes in to take the place of the rising warm air. The wind and upward movement of air causes “mixing” in the atmosphere and can carry away or dilute pollution. Inversions occur when a layer of warm air sits over cooler air, trapping the cooler air beneath. These inversions trap pollutants from dispersing vertically, and the mountains surrounding the Air Basin trap the pollutants from dispersing horizontally. Strong temperature inversions occur throughout the Air Basin in the summer, fall, and winter. Daytime temperature inversions occur at elevations of 2,000 to 2,500 feet above the San Joaquin Valley floor during the summer and at 500 to 1,000 feet during the winter. The result is a relatively high concentration of air pollution in the valley during inversion episodes. These inversions cause haziness, which, in addition to moisture, may include suspended dust, a variety of emissions from vehicles, particulates from wood stoves, and other pollutants.

**Air Pollutant Emissions Inventory**

An emissions inventory is an account of the amount of air pollution generated by various emissions sources. To estimate the sources and quantities of pollution, the California Air Resources Board (ARB), in cooperation with local air districts, other government agencies, and industry, maintains an inventory of California emission sources. Sources are subdivided into the four major emission categories: mobile, stationary, area wide, and natural sources.

Mobile sources include on-road sources and off-road mobile sources. The on-road emissions inventory, which includes automobiles, motorcycles, and trucks, is based on an estimation of population, activity, and emissions of the on-road motor vehicles used in California. The off-road emissions inventory is based on an estimate of the population, activity, and emissions of various off-road equipment, including recreational vehicles, farm and construction equipment, lawn and garden equipment, forklifts, locomotives, commercial marine ships, and marine pleasure craft.

Stationary sources are large, fixed sources of air pollution, such as power plants, refineries, and manufacturing facilities. Stationary sources also include aggregated point sources. These include many small point sources, or facilities, that are not inventoried individually but are estimated as a group and reported as a single-source category. Examples include gas stations and dry cleaners. Each of the local air districts estimates the emissions for the majority of stationary sources within

its jurisdiction. Stationary source emissions are based on estimates made by facility operators and local air districts. Emissions from specific facilities can be identified by name and location.

Area wide sources include source categories associated with human activity that take place over a wide geographic area. Emissions from area wide sources may be either from small, individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products, and dust from unpaved roads or farming operations (such as tilling).

Natural, or non-anthropogenic, sources include source categories with naturally occurring emissions such as geogenic (e.g., petroleum seeps), wildfires, and biogenic emissions from plants.

**Stanislaus County Emissions Inventory**

Emissions inventory information is compiled by ARB and is available on its Almanac Emission Projection Data website. Table 3.3-1 summarizes Stanislaus County’s most recently available emissions inventory estimate for the main pollutants of concern in the Air Basin. Included are reactive organic gases (ROG), carbon monoxide (CO), oxides of nitrogen (NOx), and particulate matter (PM). Particulate matter is a general category that is further divided by the size of the particulates, into PM10 for particulates 10 microns or less in diameter, and PM2.5 for particulates 2.5 microns or less in diameter. The tons per year of pollutants (ROG, CO, NOx, PM10, and PM2.5) are listed by emissions classification and emissions category. More information on the general sources and health effects of these pollutants is available below under the Pollutants of Concern section.

**Table 3.3-1  
2008 Stanislaus County Emissions Inventory**

Emission Classification	Emission Category	Pollutants (tons per day)				
		ROG	CO	NOx	PM10	PM2.5
Stationary	Fuel Combustion	0.2	1.8	3.7	0.4	0.4
	Waste Disposal	0.3	0.1	0.0	0.0	0.0
	Cleaning and Surface Coatings	2.3	-	-	0.0	0.0
	Petroleum Production and Marketing	0.8	0.0	0.0	0.0	0.0
	Industrial Processes	1.3	0.0	0.4	2.0	1.0
Area -wide	Solvent Evaporation	6.8	-	-	-	-
	Miscellaneous Processes	15.1	20.7	1.6	24.6	6.8
Mobile	On-Road Motor Vehicles	9.6	81.1	28.4	1.2	1.0
	Other Mobile Sources	5.7	29.4	13.5	0.8	0.8
Natural (Non-Anthropogenic)	Natural Sources	13.1	15.7	0.5	1.6	1.4
<b>Stanislaus County Total*</b>		<b>55.2</b>	<b>148.8</b>	<b>48.1</b>	<b>30.6</b>	<b>11.4</b>

Source: California Air Resources Board, 2009.

Notes: Total based on non-rounded emissions estimates.

**ROG:** The area-wide emission classification accounts for the majority of ROG in the County, contributing approximately 39.7 tons per day to the total inventory. Of the miscellaneous processes category, 15.1 tons per day is added to the total inventory. The second largest contributor comes from the natural (non-anthropogenic) classification which generates 23.7 tons per day of the total inventory. Natural sources are the only emission within that category which contributes 13.1 tons per day of the total inventory.

**CO:** The mobile classification accounts for the majority of CO, contributing approximately 74.3 tons per day of the total inventory. On-road motor vehicles accounts for 81.1 tons per day of the total. The second largest contributor comes from the area-wide classification which generates 13.9 tons per day of the total inventory. Miscellaneous processes are the only emission within that category which contributes 20.7 tons per day to the total inventory.

**NOx:** The mobile classification contributes the majority of NOx emissions in the County at approximately 87.1 percent of the total inventory, with on-road motor vehicles contributing approximately 28.4 tons per day.

**PM10:** The area-wide classification accounts approximately 24.6 tons per day of the emissions inventory in the County. Stationary classification is the second largest contributor which the industrial processes category adds 2.0 tons per day of PM10 to the total inventory.

**PM2.5:** The area-wide classification contributes approximately 6.8 tons per day to the total 11.4 tons per day of PM2.5. The second largest contributor comes from the natural sources category, which accounts for 1.4 tons per day of PM2.5.

#### **Local Air Quality**

Existing local air quality, historical trends, and projections of air quality are best evaluated by reviewing relevant air pollutant concentrations from near the project area. The ARB and the SJVAPCD operate two air monitoring stations in Stanislaus County. The Turlock-S Minaret Street monitoring station is located 0.95 miles north of the project site, and it measures gaseous ozone, carbon monoxide, and nitrogen dioxide and particulate matter PM2.5. The Modesto-14<sup>th</sup> Street monitoring station is located approximately 14 miles northeast of the project site, and it measures gaseous ozone, carbon monoxide, particulate matter PM2.5, as well as outdoor temperature, horizontal wind speed, and barometric pressure. Air quality monitoring networks are designed to monitor areas with: high population densities, areas with high pollutant concentrations, areas impacted by major pollutant sources, and areas representative of background concentrations. Table 3.3-2 summarizes 2008 through 2011 published monitoring data from ARB's Aerometric Data Analysis and Management System for both stations.

Nearby sources of air pollution include mobile source emissions (traffic) from State Highway 99 to the south, Lander Avenue to the west, East Glenwood Avenue to the north, and Golf Road to the east, and the Turlock Airpark to the southwest of the project site. Stationary source emissions come from a variety of businesses surrounding the project site. Additional sources of air pollution include fugitive dust (PM10 and PM2.5) from tilling, windblown dust, and agricultural equipment exhaust from nearby fields under agricultural production. The project site itself has been intermittently used in agricultural production.

**Table 3.3-2  
Air Quality Monitoring Summary**

Pollutant	Turlock-S Minaret Street				Modesto-14 <sup>th</sup> Street			
	2008	2009	2010	2011	2008	2009	2010	2011
<b>Ozone</b>								
#Days > State 1-Hour Standard <sup>1</sup>	21	8	8	4	10	1	1	0
# Days > National 2008 8-Hour Standard	29	18	10	17	18	7	3	3
# Days > State 8-Hour Standard	52	34	19	34	24	14	9	7
<b>Nitrogen dioxide (NO<sub>2</sub>)<sup>a</sup></b>								
National #Days Above the Standard	0	0	0	0	*	*	*	*
California #Days Above the Standard	0	0	0	0	*	*	*	*
<b>Carbon monoxide (CO)<sup>a</sup></b>								
National #Days Above the Standard	0	0	0	0	0	0	0	0
California #Days Above the Standard	0	0	0	0	0	0	0	0
<b>Fine Particulate Matter (PM<sub>10</sub>)<sup>b</sup></b>								
Estimated Days Over the National 24-Hour PM <sub>10</sub> Standard	0	0	0	0	0	0	0	0
Estimated Days Over the State 24-Hour PM <sub>10</sub> Standard	*	72.0	23.7	*	*	36.4	6.1	*
<b>Ultra Fine Particulate Matter (PM<sub>2.5</sub>)<sup>b</sup></b>								
# Days > National 1-Hour Standard	3	1	0	0	1	0	0	0
Estimated Days Over the National 24-Hour PM <sub>2.5</sub> Standard	*	35.0	*	36.3	39.4	24.7	14.5	25.0

Source: California Air Resources Board, 2012.

Note: <sup>1</sup> The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect.

Note: <sup>2</sup> The national annual PM<sub>10</sub> standard was revoked in December 2006 and is no longer in effect.

Note: \* Insufficient data available to determine the value. Local Sources of Air Pollutants.

As shown in Table 3.3-2, ambient air pollution concentrations in the project area regularly exceeded the State 1-hour ozone standard and the federal 8-hour standard listed in Table 3.3-1 in

the last 4 years. In the same timeframe, the project area exceeded the State daily PM10 standard and the federal PM2.5 standards. However, the project area did not exceed the federal or State CO standards, nor did the project area exceed the federal PM10 standard.

#### ***Sensitive Receptors***

Certain populations, such as children, the elderly, and persons with preexisting respiratory or cardiovascular illness, are particularly sensitive to the health impacts of air pollution. For purposes of CEQA, the SJVAPCD considers a sensitive receptor to be a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. Office workers may also be considered sensitive receptors, based on their proximity to sources of toxic air contaminants and that workers may be exposed over the duration of their employment. The nearest sensitive receptors occur on the project site along East Glenwood Avenue (ten, occupied single-family residences and one occupied mobile home) and Golf Road (two occupied single-family residences). Other sensitive receptors include:

- Stanislaus Academy, approximately 0.32 miles east of the project’s south-eastern boundary;
- Cunningham Elementary School, approximately 0.25 miles northwest of the project’s western boundary; and
- Valley Oaks School, approximately 0.34 miles northwest of the project’s western boundary.

#### ***Pollutants of Concern***

For reasons described below in the Regulatory Setting section, the criteria pollutants of greatest concern for the project area are ozone, PM10, and PM2.5. Although the Air Basin is in attainment of the federal and State carbon monoxide standards, carbon monoxide is a pollutant of concern, due to the potential for localized “hotspots” to occur. Other pollutants of concern are toxic air contaminants and asbestos. The following provides a summary of the pollutants of concern for the project area.

### **OZONE**

Ozone is not emitted directly into the air but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include ROG and NOx (ozone precursors are discussed below), react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. Often, the effects of emitted ROG and NOx are felt a distance downwind of the emission sources. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials.

Ozone can irritate lung airways and cause inflammation, much like a sunburn. Other symptoms include wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities. People with respiratory problems are most vulnerable, but even healthy people who are active outdoors can be affected when ozone levels are high. Chronic ozone exposure can induce morphological (tissue) changes throughout the respiratory tract, particularly at the junction of the conducting airways and the gas exchange zone in the deep lung. Anyone who spends time outdoors in the summer is at risk, particularly children and other people who are more active outdoors. Even at very low levels, ground-level ozone triggers a variety of health problems, including aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Ozone also damages vegetation and ecosystems. It leads to reduced agricultural crop and commercial forest yields; reduced growth and survivability of tree seedlings; and increased susceptibility to diseases, pests, and other stresses such as harsh weather. In the United States alone, ozone is responsible for an estimated \$500 million in reduced crop production each year. Ozone also damages the foliage of trees and other plants, affecting the landscape of cities, national parks and forests, and recreation areas. In addition, ozone causes damage to buildings, rubber, and some plastics.

Ozone is a regional pollutant, as the reactions forming it take place over time, and it materializes downwind from the sources of the emissions. As a photochemical pollutant, ozone is formed only during daylight hours under appropriate conditions, but it is destroyed throughout the day and night. Thus, ozone concentrations vary, depending upon both the time of day and the location. Even in pristine areas, some ambient ozone forms from natural emissions that are not controllable. This is termed background ozone. The average background ozone concentrations near sea level are in the range of 0.015 to 0.035 parts per million (ppm), with a maximum of about 0.04 ppm.

### **REACTIVE ORGANIC GASES**

Reactive organic gases (ROG) are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participate in atmospheric photochemical reactions. ROG consist of nonmethane hydrocarbons and oxygenated hydrocarbons. Hydrocarbons are organic compounds that contain only hydrogen and carbon atoms. It should be noted that there are no state or federal ambient air quality standards for ROG because they are not classified as criteria pollutants. They are regulated, however, because a reduction in ROG emissions reduces certain chemical reactions that contribute to the formulation of ozone. ROG are also transformed into organic aerosols in the atmosphere, which contribute to higher PM10 levels and lower visibility.

Because ROG is an ozone precursor, the health effects associated with ROG emissions are due its role in ozone formation and, as discussed above, not due to direct effects.

## **NITROGEN OXIDES**

During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides or NO<sub>x</sub>. This occurs primarily in motor vehicle internal combustion engines, and fossil fuel-fired electric utility facilities and industrial boilers. The pollutant NO<sub>x</sub> is a concern because it is an ozone precursor, which means that it helps form ozone. When NO<sub>x</sub> and ROG are released in the atmosphere, they can chemically react with one another in the presence of sunlight and heat to form ozone. NO<sub>x</sub> can also be a precursor to PM<sub>10</sub> and PM<sub>2.5</sub>.

One of the most important health effects associated with NO<sub>x</sub> emissions is related to its role in ozone formation, as discussed above. Its role in the secondary formation of ammonium nitrate results in particulate health effects described in the next section. Nitrogen dioxide (NO<sub>2</sub>) is the largest and most important component of NO<sub>x</sub>. NO<sub>2</sub> acts mainly as an irritant affecting the mucosa of the eyes, nose, throat, and respiratory tract. Extremely high-dose exposure (as in a building fire) to NO<sub>2</sub> may result in pulmonary edema and diffuse lung injury. Continued exposure to high NO<sub>2</sub> levels can contribute to the development of acute or chronic bronchitis. Low level NO<sub>2</sub> exposure may cause increased bronchial reactivity in some asthmatics, decreased lung function in patients with chronic obstructive pulmonary disease and increased risk of respiratory infections, especially in young children.

## **PARTICULATE MATTER (PM<sub>10</sub> AND PM<sub>2.5</sub>)**

Particulate matter is the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small that they can only be detected using an electron microscope. The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers (µm) in diameter pose the greatest problems, because they can get deep into lungs and the bloodstream. The United States Environmental Protection Agency (EPA) health standards have been established for two categories of particulate matter:

- PM<sub>10</sub> – “inhalable coarse particles” with diameters larger than 2.5 micrometers and smaller than 10 micrometers; and
- PM<sub>2.5</sub> – “fine particles,” with diameters that are 2.5 micrometers and smaller. For reference, PM<sub>2.5</sub> is approximately one-thirtieth the size of the average human hair.

Although the PM<sub>10</sub> standard is intended to regulate “inhalable coarse particles” that ranged from 2.5 to 10 micrometers in diameter, PM<sub>10</sub> measurements contain both fine and coarse particles. These particles come in many sizes and shapes and can be made up of hundreds of different chemicals.

Some particles, known as primary particles, are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks, or fires. Others form in complicated reactions in the atmosphere from chemicals such as sulfur dioxides and nitrogen oxides that are emitted from power plants, industrial activity, and automobiles. These particles, known as secondary particles, make up most of the fine particle pollution in the United States.

Particle exposure can lead to a variety of health effects. For example, numerous studies link particle levels to increased hospital admissions and emergency room visits—and even to death from heart or lung diseases. Both long- and short-term particle exposures have been linked to health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function, the development of chronic bronchitis, and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and acute bronchitis, and may increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short-term exposures, although they may experience temporary minor irritation when particle levels are elevated.

## **CARBON MONOXIDE**

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. Other non-road engines and vehicles (such as construction equipment and boats) contribute about 22 percent of all CO emissions nationwide. Higher levels of CO generally occur in areas with heavy traffic congestion. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are sources of CO indoors.

Motor vehicles are the dominant source of CO emissions in most areas. CO is described as having only a local influence because it dissipates quickly. High CO levels develop primarily during winter, when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Because CO is a product of incomplete combustion, motor vehicles exhibit increased CO emission rates at low air temperatures. High CO concentrations occur in areas of limited geographic size, sometimes referred to as hot spots. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin, reducing the amount of oxygen transported in the bloodstream. The health threat from relatively low levels of CO is most serious for those who suffer from such heart-related diseases as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

## **TOXIC AIR CONTAMINANTS**

A toxic air contaminant is defined as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. Toxic air contaminants are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those toxic air contaminants that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

## **DIESEL PARTICULATE MATTER**

The ARB identified the PM emissions from diesel-fueled engines as a toxic air contaminant in August 1998 under California’s toxic air contaminant program. In California, diesel engine exhaust has been identified as a carcinogen. Most researchers believe that diesel exhaust particles contribute the majority of the risk.

DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 40 percent of the statewide total, with an additional 57 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about 3 percent of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report diesel PM emissions also include heavy construction (except highway) manufacturers of asphalt, paving materials and blocks, and electrical generation.

DPM is a subset of PM<sub>2.5</sub>—diesel particles are typically 2.5 microns and smaller. In a document published in 2002, the EPA noted that in 1998, diesel PM made up about 6 percent of the total PM<sub>2.5</sub> inventory nationwide. The complex particles and gases that make up diesel exhaust have the physical properties of organic compounds that account for 80 percent of the total particulate matter mass consisting of hydrocarbons and their derivatives and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust. The chemical composition and particle sizes of DPM vary among different engine types (heavy-duty, light-duty), engine operating conditions (idling, accelerating, decelerating), expected load, engine emission controls, fuel formulations (high/low sulfur fuel), and engine year.

Some short-term (acute) health effects of diesel exhaust exposure include eye, nose, throat, and lung irritation, and exposure can cause coughs, headaches, light-headedness, and nausea. Diesel exhaust is a major source of ambient PM pollution in urban environments. In a 2002 report from the Office of Environmental Health Hazard Assessment (OEHHA) titled “Health Effects of Diesel Exhaust Report”, it was noted that numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature

deaths among those suffering from respiratory problems. The National Toxicology Program asserted that more serious, long-term health effects of diesel exhaust have demonstrated an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure in its 2005 Report on Carcinogens, Eleventh Edition.

## **ASBESTOS**

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States.

Project construction sometimes requires the demolition of existing buildings where construction occurs. Buildings often include materials containing asbestos, this project involves the demolition of existing structures where asbestos has been identified. Asbestos is also found in a natural state, known as naturally-occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers to the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs).

The California Geological Survey (CGS) provides information on the geology of asbestos occurrences in California to a number of State, local and federal agencies, private industry, consultants and the public. The CGS, along with the United States Geological Survey, prepared the “Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California” in 2011. According to the report, At least one occurrence of asbestos is reported in 41 of California’s 58 counties. In addition, “areas of exposed ultramafic rocks or serpentinite, common host rocks for asbestos, are present in 51 of the 58 counties”.

A review of the report and accompanying map shows the presence of ultramafic rocks or serpentinite on the far west side of the County. Occurrences are greatest near and crossing over the Santa Clara County boundary with Stanislaus County (Van Gosen and Clinkenbeard 2011).

### **3.3.3 REGULATORY SETTING**

Air pollutants are regulated at the national, State, and air basin level; each agency has a different degree of control. The United States Environmental Protection Agency (EPA) regulates at the

federal level. The California Air Resources Board (ARB) regulates at the state level and SJVAPCD regulates at the air basin level.

**Federal**

**U.S. ENVIRONMENTAL PROTECTION AGENCY**

The EPA addresses global, international, national, and interstate air pollution issues, and policies. The agency also sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance in air pollution programs, and sets National Ambient Air Quality Standards, also known as federal standards. There are federal standards for six common air pollutants, called criteria air pollutants, which were identified resulting from provisions of the Clean Air Act of 1970. The six criteria pollutants are:

- Ozone;
- Particulate matter (PM10 and PM2.5);
- Nitrogen dioxide;
- Carbon monoxide (CO);
- Lead; and
- Sulfur dioxide.

The federal standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants.

**State**

**CALIFORNIA AIR RESOURCES BOARD**

The State Implementation Plan for the State of California is administered by the California Air Resources Board (ARB), which has overall responsibility for statewide air quality maintenance and air pollution prevention. A State Implementation Plan is prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain National Ambient Air Quality Standards. The State Implementation Plan incorporates individual federal attainment plans for regional air districts. Federal attainment plans prepared by each air district are sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring) control measures and strategies and enforcement mechanisms.

Additionally, the ARB also administers California Ambient Air Quality Standards for the 10 air pollutants designated in the California Clean Air Act. The 10 state air pollutants are the six criteria pollutants listed above, as well as visibility-reducing particulates such as hydrogen sulfide, sulfates, and vinyl chloride. Visibility-reducing particles are suspended particulate matter. Visibility is the distance through the air that an object can be seen without the use of instrumental assistance. Vinyl chloride is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. Visibility-reducing particles and vinyl chloride are not assessed in this analysis because the project would not be exposed to or generate those pollutants.

Federal and State ambient air quality standards are summarized in Table 3.3-3.

**Table 3.3-3  
Federal and State Ambient Air Quality Standards**

<b>Pollutant</b>	<b>Average Time</b>	<b>California Standards<sup>1</sup> Concentration<sup>3</sup></b>	<b>Federal Standards<sup>2</sup> Primary<sup>3, 4</sup></b>
Ozone (O <sub>3</sub> )	1 hour	0.09 ppm (180 µg/m <sup>3</sup> )	-
	8 hour	0.07 ppm (137 µg/m <sup>3</sup> )	0.075 ppm (147 µg/m <sup>3</sup> )
Respirable Particulate Matter (PM10)	24 hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
	Annual arithmetic mean	20 µg/m <sup>3</sup>	-
Fine Particulate Matter (PM2.5)	24 hour	-	35 µg/m <sup>3</sup>
	Annual arithmetic mean	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>
Carbon Monoxide (CO)	8 hour	9.0 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )
	1 hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )
Nitrogen Dioxide (NO <sub>2</sub> ) <sup>5</sup>	Annual arithmetic mean	0.030 ppm (57 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )
	1 hour	0.18 ppm (339 µg/m <sup>3</sup> )	100 ppb (188 µg/m <sup>3</sup> )
Sulfur Dioxide (SO <sub>2</sub> ) <sup>6</sup>	24 hour	0.04 ppm (105 µg/m <sup>3</sup> )	0.14 ppm
	1 hour	0.25 ppm (655 µg/m <sup>3</sup> )	75 ppb (196 µg/m <sup>3</sup> )
Lead (Pb) <sup>7, 8</sup>	30-day average	1.5 µg/m <sup>3</sup>	—
	Calendar quarter	—	1.5 µg/m <sup>3</sup>
	Rolling 3-month average <sup>h</sup>	—	0.15 µg/m <sup>3</sup>
Visibility Reducing Particles <sup>9</sup>	8 hour	see footnote 9	No Federal Standards
Sulfates	24 hour	25 µg/m <sup>3</sup>	
Hydrogen Sulfide	1 hour	0.03 ppm (42 µg/m <sup>3</sup> )	
Vinyl Chloride <sup>g</sup>	24 hour	0.010 ppm (26 µg/m <sup>3</sup> )	

Source: California Air Resources Board, June 4, 2012.

Notes: ppm = Parts Per Million, µg/m<sup>3</sup> = micrograms per cubic meter, and mg/m<sup>3</sup> = milligrams per cubic meter.

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended 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 averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration 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 of 150 µg/m<sup>3</sup> is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98% of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact US EPA for further clarification and current federal policies.

3. Concentrations expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on 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 of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

5. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA 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

6. On June 2, 2010, the US EPA established a new 1-hour SO<sub>2</sub> standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM have adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO<sub>2</sub> standard of 0.14 ppm and the annual primary standard of 0.030 ppm, effective August 23, 2010. The secondary SO<sub>2</sub> standard was not revised at that time; however, the secondary standard is undergoing separate review by EPA. Note that the new standard is in units of ppb California standards are in units of ppm. To directly compare the new primary 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.

7. 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.

8. National lead standard, rolling 3-month average: final rule signed October 15, 2008.

9. Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.

## **TOXIC AIR CONTAMINANT REGULATION**

ARB’s toxic air contaminant program traces its beginning to the criteria pollutant program in the 1960s. For many years, the criteria pollutant control program has been effective at reducing toxic air contaminants, since many volatile organic compounds and PM constituents are also toxic air contaminants. During the 1980s, the public’s concern over toxic chemicals heightened. As a result, citizens demanded protection and control over the release of toxic chemicals into the air. In response to public concerns, the California legislature enacted the Toxic Air Contaminant Identification and Control Act governing the release of toxic air contaminants into the air. This law charges ARB with the responsibility for identifying substances as toxic air contaminants, setting priorities for control, adopting control strategies, and promoting alternative processes. ARB has designated almost 200 compounds as toxic air contaminants. Additionally, ARB has implemented control strategies for a number of compounds that pose high health risk and show potential for effective control.

In 2005, ARB approved an Air Toxics Control Measure (ATCM) to limit diesel-fueled commercial motor vehicle idling to reduce emissions of toxics and criteria pollutants. The driver of any vehicle subject to this section (1) shall not idle the vehicle’s primary diesel engine for greater than 5 minutes at any location and (2) shall not idle a diesel-fueled auxiliary power system for more than 5 minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if it has a sleeper berth and the truck is located within 100 feet of a restricted area (homes and schools).

## **NATURALLY OCCURRING ASBESTOS REGULATION**

The ARB has an ATCM for construction, grading, quarrying, and surface mining operations requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. This ATCM applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas, such as the project site, are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units, or if the Air Pollution Control Officer or owner/operator has knowledge of

the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The ATCM also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity.

## **CALIFORNIA AIR RESOURCES BOARD LAND USE HANDBOOK**

The ARB adopted the *Air Quality and Land Use Handbook: A Community Health Perspective (Land Use Handbook)* in 2005. The Land Use Handbook provides information and guidance on siting sensitive receptors in relation to sources of toxic air contaminants. The sources of toxic air contaminants identified in the Land Use Handbook are high-traffic freeways and roads, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and large gasoline dispensing facilities. The proposed project does not fall within the sources identified in the Handbook. If the project involves siting a sensitive receptor or source of toxic air contaminant discussed in the Land Use Handbook, siting mitigation may be added to avoid potential land use conflicts, thereby reducing the potential for health impacts to the sensitive receptors.

### ***Regional***

## **SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT**

The air pollution control agency for the Air Basin is the SJVAPCD. The SJVAPCD is responsible for regulating emissions primarily from stationary sources, certain area-wide sources, and indirect sources. The SJVAPCD maintains air quality monitoring stations throughout the Air Basin. The SJVAPCD, in coordination with eight countywide transportation agencies, is also responsible for developing, updating, and implementing the Air Quality Plans (AQPs) for the Air Basin. In addition, the SJVAPCD has prepared the GAMAQI (2002), which sets forth recommended thresholds of significance, analysis methodologies, and provides guidance on mitigating significant impacts.

## **ATTAINMENT STATUS**

There are three terms used to determine whether an air basin meets federal and State standards which include attainment, nonattainment, and unclassified. Air basins are assessed for each applicable pollutant and receive a designation for each standard based on that assessment. Each standard has a different definition, or “form” of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual PM<sub>2.5</sub> standard is met if the 3-year average of the annual average PM<sub>2.5</sub> concentration is less than or equal to the standard.

Areas are designated attainment or nonattainment on a per-pollutant basis. If an air basin exceeds the “form” of a federal or State standard, then it is designated as “nonattainment” for that air pollutant. An air basin is designated as “attainment” if all the standards for an air pollutant are met. If there is inadequate or inconclusive data to make a definitive attainment designation for a

pollutant, the air basin is identified as “unclassified”. The current attainment designations for the Air Basin are shown in Table 3.3-4.

**Table 3.3-4  
Current Attainment Designations**

Pollutant	Designation Status	
	Federal <sup>1</sup>	State <sup>2</sup>
Ozone – 1 Hour	No Federal Standard <sup>3</sup>	Nonattainment/Severe
Ozone – 8 Hour	Nonattainment/Extreme <sup>4</sup>	Nonattainment
PM10	Attainment <sup>5</sup>	Nonattainment
PM2.5	Nonattainment <sup>6</sup>	Nonattainment
Carbon monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen dioxide	Unclassified/Unclassified	Attainment
Sulfur dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen sulfide	No Federal Standard	Unclassified
Visibility-reducing particles	No Federal Standard	Unclassified

Source: San Joaquin Valley Air District, 2012.

Notes:

1. See 40 CFR Part 81

2. See CCR Title 17 Sections 60200-60210

3. 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.

4. 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).

5. 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.

6. 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).

Federal nonattainment areas are further divided into classifications—severe, serious, or moderate—as a function of deviation from standards. As of June 15, 2005, the EPA revoked the 1-hour ozone standard in all areas except the 8-hour ozone nonattainment Early Action Compact Areas. Therefore, the federal 1-hour ozone standard is only applicable to certain areas. The SJVAPCD is not listed as an Early Action Compact area; therefore, the federal 1-hour ozone standard does not apply to the project area. However, the SJVAPCD is still subject to anti-backsliding requirements such as continuation of 1-hour ozone control strategies.

As described above under federal and State regulatory agencies, a State Implementation Plan is a federal requirement; each state prepares a plan to describe existing air quality conditions and measures that will be followed to attain and maintain the National Ambient Air Quality Standards. In addition, state ozone standards have planning requirements. However, state PM10 standards have no attainment planning requirements, but air districts must demonstrate that all measures feasible for the area have been adopted.

**Current Air Quality Plans**

**OZONE PLANS**

The Air Basin is designated nonattainment of State and federal health-based air quality standards for ozone. To meet CAA requirements for the one-hour ozone standard, the SJVAPCD adopted an Extreme Ozone Attainment Demonstration Plan in 2004, with an attainment date of 2010. EPA revoked the federal 1-hour ozone standard and replaced it with an 8-hour standard. Although EPA revoked the 1-hour ozone standard effective June 15, 2005, the requirement to submit a plan for that standard remained in effect for the San Joaquin Valley. On June 30, 2009, EPA proposed approval and partial disapproval of San Joaquin Valley’s 2004 Extreme Ozone Attainment Plan for 1-hour ozone. EPA proposed to approve the plan revisions for the San Joaquin Valley as meeting applicable Clean Air Act requirements, except for the provision addressing the reasonably available control technology requirements that the State withdrew. On December 11, 2009, the final approval of the San Joaquin Valley’s 2004 Extreme Ozone Attainment Demonstration Plan was signed by EPA. The plan, prepared by the SJVAPCD, showed that the area would have in place the controls necessary to meet the 1-hour ozone standard by the area’s Clean Air Act deadline of 2010; however, the District was unable to show attainment by the 2010 deadline. As a result, pursuant to Section 185 of the Clean Air Act, the SJVAPCD Governing Board approved amendments to Rule 3170 to provide for a \$12 per vehicle fee to all motor vehicles registered in the Air Basin to achieve surplus emissions reductions to remediate air pollution problems caused by motor vehicles. The vehicle fee will sunset upon attainment of the one-hour ozone standard. An anticipated attainment date has not been provided by the SJVAPCD.

The Air Basin is classified as serious nonattainment for the federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the SJVAPCD’s Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be unfeasible. The 2007 Ozone Plan details the plan for achieving attainment on schedule with an “extreme nonattainment” deadline of 2026. At its adoption of the 2007 Ozone Plan, the SJVAPCD also requested a reclassification to extreme nonattainment. The ARB approved the plan in June 2007.

In December 2008, the SJVAPCD adopted the “Amendment to the 2007 Ozone Plan to Extend the Rule Adoption Schedule for Organic Waste Operations”. This amendment revised a table of the 2007 plan to extend the completion date for the Composting Green Waste control measure to the fourth quarter of 2010. This extension allows time for further study before rule adoption, and this rule extension does not impact reasonable further progress or the attainment demonstration. EPA proposed approval of the 2007 Ozone Plan in October 2011.

State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible.

**PARTICULATE MATTER PLANS**

The Air Basin was designated nonattainment of State and federal health-based air quality standards for PM10. To meet Clean Air Act requirements for the PM10 standard, the SJVAPCD

adopted a PM10 Attainment Demonstration Plan (Amended 2003 PM10 Plan and 2006 PM10 Plan), which has an attainment date of 2010.

The SJVAPCD adopted the 2007 PM10 Maintenance Plan and Request for Redesignation (2007 PM10 Plan) on September 20, 2007. The 2007 PM10 Plan contains modeling demonstrations that show the Air Basin will not exceed the federal PM10 standard for 10 years after the expected EPA redesignation, monitoring, and verification measures, and a contingency plan. Even though EPA revoked the federal annual PM10 standard, the 2007 PM10 Maintenance Plan addresses both the annual and 24-hour standards because both standards were included in the EPA-approved State Implementation Plan. EPA finalized the determination that the Air Basin attained the PM10 standards on October 17, 2007, effective October 30, 2007. On September 25, 2008, EPA redesignated the Air Basin as attainment for the federal PM10 standard and approved the PM10 Maintenance Plan.

State PM10 standards have no attainment planning requirements, but air districts must demonstrate that all measures feasible for the area have been adopted.

The Air Basin is designated nonattainment for federal PM2.5 standards. EPA set their first PM2.5 standards in 1997, and they strengthened the 24-hour standard in 2006. Building upon the strategy used in the 2007 Ozone Plan, the SJVAPCD agreed to additional control measures to reduce directly produced PM2.5. The SJVAPCD's Governing Board adopted the 2008 PM2.5 Plan on April 30, 2008. The plan estimates that the SJVAB will reach the PM2.5 standard by 2014. The ARB approved the Plan on May 22, 2008. EPA approved most provisions of the 2008 PM2.5 Plan effective January 9, 2012. The SJVAPCD's plan addressing EPA's 2006 revised PM2.5 standard was due to EPA in December 2012.

## **RULES APPLICABLE TO THE PROJECT**

The SJVAPCD rules and regulations that apply to this project include but are not limited to the following:

SJVAPCD Rule 2201 – New and Modified Stationary Source Review;

SJVAPCD Rule 3180 – Administrative Fees for Indirect Source Review (ISR). The purpose of this rule is to recover the SJVAPCD's costs for administering the requirements of Rule 9510 (Indirect Source Review);

SJVAPCD Rule 4002 - National Emissions Standards for Hazardous Air Pollutants. The purpose of the rule is to incorporate the National Emission Standards for Hazardous Air Pollutants from Part 61, Chapter I, Subchapter C, Title 40, Code of Federal Regulations and the National Emission Standards for Hazardous Air Pollutants for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, Code of Federal Regulations to protect the health and safety of the public from hazardous air pollutants, such as asbestos;

SJVAPCD Rule 4102 – Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials;

SJVAPCD Rule 4601 – Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling;

SJVAPCD Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641;

SJVAPCD Rule 4901 - Wood Burning Fireplaces and Wood Burning Heaters. This rule would apply to the residential component of the project;

SJVAPCD Regulation VIII – Fugitive PM10 Prohibitions. Rule 8011-8081 are designed to reduce PM10 emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc.;

SJVAPCD Rule 9410 – Employer Based Trip Reduction. The purpose of this rule is reduce vehicle miles traveled (VMT) from private vehicles used by employees to commute to and from their worksites to reduce emissions of NO<sub>x</sub>, VOC and PM. The rule would require larger employers (those with 100 or more eligible employees) to establish employee trip reduction programs to reduce VMT, reducing emissions associated with work commutes. The rule uses a menu-based Employer Trip Reduction Implementation Plan and periodic reporting requirements to evaluate performance on a phased-in compliance schedule; and

SJVAPCD Rule 9510 – Indirect Source Review. This rule reduces the impact of NO<sub>x</sub> and PM10 emissions from growth on the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through onsite mitigation, offsite SJVAPCD-administered projects, or a combination of the two. This rule applies to new developments seeking a final discretionary approval that are over a certain threshold size. Any of the following projects require an application to be submitted unless the projects have mitigated emissions of less than two tons per year each of NO<sub>x</sub> and PM10. Projects that are at least:

- 50 residential units;
- 2,000 square feet of commercial space;
- 9,000 square feet of educational space;
- 10,000 square feet of government space;
- 20,000 square feet of medical or recreational space;
- 25,000 square feet of light industrial space;
- 39,000 square feet of general office space;
- 100,000 square feet of heavy industrial space; and

- Or, 9,000 square feet of any land use not identified above.

Compliance with SJVAPCD Rule 9510 reduces the emissions impact of the project through incorporation of onsite measures as well as payment of an offsite fee that funds emission reduction projects in the Air Basin. The emissions analysis for Rule 9510 is highly detailed and is dependent on the exact project design that is expected to be constructed or installed. Compliance with Rule 9510 is separate from the CEQA process, though the control measures used to comply with Rule 9510 may be used to mitigate CEQA impacts. Minor changes to project components between the CEQA analysis and project construction often occur. An example of such a change is a change in construction year, operational year, etc. The amounts of emission reductions required by Rule 9510 are:

Construction Exhaust:           20 percent of the total NOx emissions; and  
  45 percent of the total PM10 emissions.

Operational Emissions:        33 percent of NOx emissions over the first 10 years; and  
  50 percent of the PM10 emissions over the first 10 years.

Rule 9510 requires the submission of an Air Impact Assessment application to the SJVAPCD no later than applying for the final discretionary permit. The proposed project will comply with this requirement at the time final discretionary permits are sought.

## **STANISLAUS COUNCIL OF GOVERNMENTS/REGIONAL TRANSPORTATION PLAN**

Stanislaus Council of Governments (StanCOG) is the Metropolitan Planning Organization (MPO) for the Stanislaus Region, as designated by the federal government, and the Regional Transportation Planning Agency (RTPA) as designated by the State of California. A MPO/RTPA is a public organization that works with local governments and citizens in its region by dealing with issues and needs that cross city and county boundaries.

StanCOG is a council of city and county governments comprised of the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford, and the County of Stanislaus, that was established in 1971 by a Joint Powers Agreement to address regional transportation issues. It is responsible for developing and updating a variety of transportation plans and for allocating the federal and State funds to implement them. While regional transportation planning is its primary role, StanCOG is also involved in other issues that affect the entire region, such as air quality.

### **2011 REGIONAL TRANSPORTATION PLAN**

The 2011 Regional Transportation Plan (RTP) is the blueprint used to address the many challenges facing the transportation system. This long range plan contains an integrated set of goals, objectives, and actions to maintain, manage, and improve the transportation system in Stanislaus County through the year 2035.

The plan’s strategy is to accommodate growth of the region by improving the movement of goods and people while maximizing the benefit of each dollar spent on the transportation system. At the core of the 2011 RTP are five goals:

- **Mobility:** Improve the opportunity and ability of people to travel between jobs, schools, and homes; and to efficiently move goods;
- **Safety and System Preservation:** Operate and maintain the transportation system to ensure public safety and to protect the region’s transportation investment;
- **Environmental Quality:** Consider the environmental impacts when making transportation investments, and minimize direct and indirect impacts on the environment for cleaner air and natural resources;
- **Economic/Community Vitality:** Foster job creation and business attraction, retention and expansion by improving the movement of goods, services and our local workforce while revitalizing our communities; and
- **Social Equity:** Promote and provide equitable opportunities to access transportation services for the full spectrum of the population. Ensure that economically, physically, and socially disadvantaged groups have access to transportation services and share in benefits of transportation improvements.

Conformity with air quality is performed by StanCOG on all regionally significant, non-exempt transportation projects to ensure those projects conform to the Environmental Protection Agency (EPA) regulations.

### **DRAFT STANCOG NON-MOTORIZED TRANSPORTATION MASTER PLAN (2013)**

The Draft 2013 StanCOG Non-Motorized Transportation Master Plan will replace the 2008 StanCOG Non-Motorized Transportation Master Plan. In order to improve the bicycle and pedestrian network, StanCOG along with other governments and agencies, and the communities of Stanislaus County worked together in development of the plan. “The Plan provides both a countywide understanding of existing conditions and countywide priority bicycle and pedestrian network as well as existing conditions analysis and recommended network for the unincorporated County and each of the nine Stanislaus County cities. The document structure reflects this: Each jurisdiction has a specific stand-alone chapter, which can then be adopted by local agencies”.

Chapter 11 of the plan was created for the city of Turlock. The plan provides an overview of the current bicycle and pedestrian network, recommendations for improvements, and funding strategies. The following recommended policies are included in Section 11.6 of the plan:

- **Enforce bicycle parking ordinance and consider provision of long-term parking and support facilities;**

- Consider adoption of a “Complete Streets” policy or “Routine Accommodation” type of policy to encourage accommodation of bicyclists and pedestrians of all ages and experiences levels with new construction or improvements to the public right-of-way;
- Develop, adopt, and implement ADA Implementation Plan to guide inventory accessibility needs and to guide future improvements; and
- When completing traffic analysis, collect bicycle and pedestrian volumes at each study location to address safety and circulation issues for those modes.

Education and encouragement programs include recommendations to schools on how to implement and enforce rules for safety measures.

### **SAN JOAQUIN VALLEY REGIONAL BLUEPRINT**

In early 2006 the eight Councils of Governments in the San Joaquin Valley came together in an unprecedented effort to develop a coordinated valley vision – the San Joaquin Valley Regional Blueprint. This eight-county venture is being conducted in each county, and has recently been integrated to form a preferred vision for future development throughout the Valley to the year 2050.

On April 1, 2009 the San Joaquin Valley (SJV) Regional Policy Council reviewed the Valley COGs’ collaborative work on the Blueprint and took the following actions:

- Adopted a list of Smart Growth Principles to be used as the basis of Blueprint planning in the San Joaquin Valley; and
- Adopted Scenario B+ as the Preferred Blueprint Growth Scenario for the San Joaquin Valley to the year 2050. This preferred scenario will serve as guidance for the Valley’s local jurisdictions with land use authority as they update their general plans.

#### ***Local***

### **CITY OF TURLOCK**

#### ***Turlock General Plan***

The City of Turlock is the local government with the authority over land-use decisions for this project. The project is subject to the Turlock General Plan.

On September of 2012, the City of Turlock adopted its new General Plan. The 2030 Turlock General Plan includes policies for addressing air quality and greenhouse gas emissions in “Chapter 8 Air Quality and Greenhouse Gases” of the plan. The proposed project is required to follow the City of Turlock’s rules and regulations pertaining to air quality, as well as those of the SJVAPCD, ARB, and EPA. Mitigation measures previously developed and adopted as part of the General Plan’s EIR, are automatically applied to Chapter 8.

In response to Assembly Bill (AB) 170, the City adopted the Air Quality and Greenhouse Gases Element of the General Plan, which provides data on air quality attainment and standards for criteria air pollutants. The plan also includes local, regional, State, and federal programs and regulations as well as a comprehensive set of guiding and implementing policies. The following General Plan policies are applicable to the project:

### **Air Quality and Greenhouse Gases Policies**

#### ***Guiding Policies***

- Policy 8.1-a**     **Prioritize Air Quality in Local Planning.** Continue efforts to improve air quality in Turlock by integrating air quality analysis and mitigation in land use and transportation planning, environmental review, public facilities and operations, and special programs.
- Policy 8.1-b**     **Participate in Regional Efforts.** Cooperate with the San Joaquin Valley Air Pollution Control District and Stanislaus Council of Governments in developing and implementing air quality regulations and incentives.

#### ***Implementing Policies***

##### *Coordination*

- Policy 8.1-c**     **Coordination with Other Agencies.** Work with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.

##### *Transportation and Land Use*

- Policy 8.1-d**     **Transportation and Residential Density.** Designate residential land uses to be higher density than in the past in order to meet population demand and reduce total vehicle miles travelled.
- Policy 8.1-e**     **Establish Land Use Pattern That Supports Trip Reduction.** Establish land use pattern that enables alternatives to automobile use and reduces trip lengths, including transit oriented, mixed use development and neighborhood commercial areas.
- Policy 8.1-f**     **Plant and Maintain Trees in Streets and Parks.** Adopt a comprehensive tree-planting and maintenance program that recognizes the effect of air pollutants on trees and the role trees can play in removing particulate matter and gaseous pollutants. Provide a viable financing program, particularly in older neighborhoods that are not in a landscape and lighting assessment district.

See also policies in Sections 5.2: Roadway Network, Standards and Improvements and 6.3: Street Design and Connectivity relating to street trees. Studies have shown that immediately adjacent to arterial streets, the lead content

of air can be about 15 times as high as “normal.” Hardy trees, or those adapted to such conditions, are likely to do much better over time with less care than trees that are unsuited. Rows of trees planted close together and selected and spaced to provide a buffer between the streets and the surrounding areas (such as by a combination of low and high branching trees planted in alternate rows) can be effective in filtering fumes and particulate matter.

The update of the street tree ordinance should also consider reducing existing spacing standards between trees. Spacing standards vary from 40 to 60 feet for all streets on the list; in older areas, such as along Sycamore Street, tall trees are planted as close as 20 feet apart. Shade trees also reduce radiation heating (the “heat island effect,”) helping to cool the urban environment and reduce peak energy use, and consequently reduce both ozone formation and greenhouse gas production.

**Policy 8.1-g Reduce Roadway Dust.** Improve City roads to reduce dust to the greatest extent feasible by planting shoulders and medians. Dust from roadways contributes to PM10 pollution

**Policy 8.1-h Protect Sensitive Receptors from Toxic Air Emissions.** For all new development, maintain a minimum 300-foot overlay zone on either side of Highway 99 within the Study Area to protect sensitive receptors from toxic air emissions, with the goal of providing a 500-foot buffer. Within this overlay, avoid approval of new sensitive land uses, and for those projects permitted, require site-specific project design improvements (such as higher-performance windows and HVAC systems) in order to reduce public health risks associated with poor air quality in these locations.

Sensitive receptors are those segments of the population most susceptible to poor air quality, such as children, the elderly, and those with pre-existing serious health problems affected by air quality. Land uses where sensitive receptors are most likely to spend time include, but are not limited to, hospitals and other medical facilities, schools and school yards, senior centers, child care centers, parks and playgrounds, and residential communities. In traffic related studies, additional non-cancer health risk attributable to proximity was seen within 1,000 feet and was strongest within 300 feet. California freeway studies show about a 70 percent drop-off in particulate pollution levels at 500 feet.

Note: California Environmental Protection Agency, California Air Resources Board, “Air Quality and Land Use Handbook: A Community Health Perspective” April 2005).

**Policy 8.1-i Protect Residential Uses from Noxious Odors.** Continue the present policy of not permitting any residential uses within a one-half mile radius of the Turlock Regional Water Quality Control Facility. Require that any new potential odor source locating within project screening trigger levels of sensitive receptors, as established by the SJVAPCD, undertake a detailed odor analysis.

*Development Review and Environmental Assessment*

**Policy 8.1-j Support Indirect Source Review Program.** Support the San Joaquin Valley Air Pollution Control District in implementing its indirect source review program to reduce emissions of NO<sub>x</sub> and PM<sub>10</sub> from new development projects. Under ISR, projects will be required to estimate off-site emissions and to pay a fee to the District to mitigate these emissions. Other General Plan policies encourage or require new development to have qualities that mitigate air quality impacts and consequently lower Indirect Source fees. These include bicycle lanes, mixed uses, cleaner construction vehicles, and superior energy efficiency.

City Staff reviews new development projects for air quality impacts and refers projects to the San Joaquin Valley Air Pollution Control District for comments.

**Policy 8.1-k Air Quality Improvement Fee.** In the Capital Facilities Fee (CFF) program, establish a fund to collect a fee to be paid by all new development to assist in the funding of local projects that contribute to the enhancement of air quality. The City of Turlock’s Air Quality Trust Fund, adopted in 1993, was applied to the Northwest Triangle Specific Plan Area; the new fund should collect fees citywide.

**Policy 8.1-l Use Air District Guidance in Environmental Review.** Continue to use the San Joaquin Valley Air Pollution Control District’s Guide for Assessing and Mitigating Air Quality Impacts for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents. Coordinate with the Air District, project applicants, and other interested parties, during pre development consultation and negotiation over CEQA preparation.

**Policy 8.1-m Minimize Roadway Dust.** Require all access roads, driveways, and parking areas serving new development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use. To balance the goals of dust reduction and water infiltration, encourage the use of permeable paving or well maintained gravel for parking spaces.

**Policy 8.1-n Construction-Related Air Emissions Impacts.** Continue to require mitigation measures as a condition of obtaining permits to minimize dust and air emissions impacts from construction. Require contractors to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to:

- Site watering or application of dust suppressants;
- Phasing or extension of grading operations;
- Covering of stockpiles;
- Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour); and

- Revegetation of graded areas.

*Public Facilities and Operations*

- Policy 8.1-o Reduce Trips by City Government.** Take the lead in implementing a trip-reduction program for City employees. The program may include carpooling and ridesharing; reimbursement of transit costs; encouragement of flexible work schedules, telecommuting, and teleconferencing.
- Policy 8.1-p Transition to Clean City Fleet.** Ensure through its long-range capital expenditure plans that the City deploys cutting-edge technologies and available incentives to minimize emissions from the City’s fleet.
- Policy 8.1-q Institute Green Contracting.** Using the Air District’s model ordinance as a guide, establish and follow a “green contracting” rule, awarding points in the bidding process to companies that use low-emission vehicles and equipment.

*Special Programs*

- Policy 8.1-r Promote Public Awareness.** Support the Air District’s efforts to promote public awareness about air pollution and its relationship to land use and transportation.
- Policy 8.1-s Expand Spare-the-Air Efforts.** Be an active partner with the Air District in its “Spare The Air” program. Encourage businesses and residents to avoid pollution-producing activities such as the use of fireplaces and wood stoves, charcoal lighter fluid, pesticides, aerosol products, oil-based paints, and automobiles and other gasoline engines on days when high ozone levels are expected, and promote low-emission vehicles and alternatives to driving.
- Policy 8.1-t Implement REMOVE II Program.** Support the Air District in implementing its REMOVE II incentive program to reduce mobile source emissions. Seek funding for City projects, publicize the availability of incentive funding, and identify potentially eligible projects. As defined by the Air District, the following projects may be eligible:
- Public transportation and commuter vanpool passenger subsidies;
  - Telecommunications, including videoconferencing, distance learning, and internet based business transactions;
  - Bike path construction; and
  - Alternative-fuel mechanic training.
- Policy 8.1-u Support Employer-Based Trip Reduction.** Support the Air District’s requirement that companies and organizations with 100 or more employees establish ride-sharing programs, and provide incentives to companies with 25 to 100 employees that do the same. Ridesharing programs may include market-based incentives such as cash for ridesharing, preferential parking for carpools, transit subsidies, cash allowances in lieu of parking spaces, telecommuting and flexible work schedules.

### 3.3.4 METHODOLOGY

The methodology follows the GAMAQI, which sets forth recommended thresholds of significance, analysis methodologies, and provides guidance on mitigating significant impacts. Detailed methodology is described in each of the impact sections below.

This analysis was prepared using a variety of data sources and air quality models. The California Emissions Estimator Model (CalEEMod) was used to quantify project-related construction and operational emissions. The model is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The model incorporates Pavley standards and Low Carbon Fuel standards into the mobile source emission factors. Further, the model identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user.

#### **Construction Assumptions**

Construction of the Morgan Ranch Master Plan project would result in the generation of air pollutant emissions. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from onsite and offsite activities. Onsite emissions principally consist of exhaust emissions (NO<sub>x</sub>, SO<sub>x</sub>, CO, ROG, PM<sub>10</sub>, and PM<sub>2.5</sub>) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM<sub>10</sub>) from disturbed soil. Additionally, paving operations and application of architectural coatings would release ROG emissions. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM<sub>10</sub> and PM<sub>2.5</sub>).

The construction emissions were derived using the California Emissions Estimator Model (CalEEMod). There are no current development proposals included as part of the project; therefore, a precise phasing plan is not available. In order to provide a program-level analysis of environmental impacts, phasing assumptions were developed to provide a worst-case scenario to portray maximum emissions on an annual basis during the various construction activities as described. Table 3.3-5 provides a summary of the project buildout.

**Table 3.3-5  
Summary of Project Buildout**

<b>Land Use Designation</b>	<b>2014</b>	<b>2016</b>	<b>2018</b>	<b>2020</b>	<b>Total Acres</b>	<b>Total Dwelling Units (du)</b>
Medium Density Residential	30.05 acres 218 du	30.05 acres 218 du	30.05 acres 218 du	30.05 acres 219 du	120.2	1,322
High Density Residential	7.5 acres 225 du	7.5 acres 225 du	-	-	15.0	338
Community Commercial	-	4.45 acres 48,461 KSF	4.45 acres 48,460 KSF	-	8.9	-
Office	-	1.5 acres 16,335 KSF			1.5	-
Park	-	4.35 acres	4.35 acres	-	8.7	-
Detention Basin	4.4 acres				4.4	-
Public (School)	11.1 acres	-	-	-	11.1	-

Source: City of Turlock, 2013.

Notes: DU = dwelling units, KSF = 1,000 square feet, FAR = Floor Area Ratio.

Significance of construction emissions is on a tons per year basis. Therefore, to present a worst-case scenario, it is assumed that heavy construction would occur within one to two years per phase. More specific phasing information will occur during the approval process of precise development proposals, including tentative maps, site plans, and improvement plans, which will serve as the final discretionary approval and require compliance with Rule 9510. The analysis herein takes into account an aggressive development schedule that in some cases may overstate project impacts. This methodology was undertaken so as to not understate potential project impacts. Assumptions were based on the estimated number of dwelling units and commercial square footage for operational years included in the traffic analysis and represents the majority of project emissions. Construction phasing assumptions are shown in Table 3.3-6.

**Table 3.3-6  
Construction Phasing Assumptions for Morgan Ranch Master Plan Project**

<b>Phase</b>	<b>Year</b>	<b>Phase Duration</b>	<b>Construction Phase Assumptions</b>
Phase 1 (Refer to Section 2.2.2)	2014	30 days	Site Preparation of 53.5 acres (grubbing and land clearing) Equipment: Bulldozer (9) Tractors/Loaders/Backhoes (12)
	2014	60 days	Site Grading of 53.5 acres. Equipment: Excavators (5) Graders (3) Rubber Tired Dozers (4) Scrapers (2) Tractors/Loaders/Backhoes (11)

Phase	Year	Phase Duration	Construction Phase Assumptions
Phase 2	2014/2015	300 days	Construct 331 medium residential homes and 169 high density residential homes, a 4.4 acre detention basin, and a 11.1 acre school. Equipment: Cranes (4) Forklifts (12) Generator Sets (4) Tractors/Loaders/Backhoes (12) Welders (4)
	2015	60 days	Asphalt Paving Equipment: Pavers (7) Paving Equipment (8) Rollers (8)
	2015	60 days	Paint Buildings Equipment: Air Compressors (5)
	2016	30 days	Site Preparation of 47.85 acres (grubbing and land clearing) Equipment: Bulldozer (13) Tractors/Loaders/Backhoes (17)
	2016	60 days	Site Grading of 47.85 acres Equipment: Excavators (5) Graders (5) Rubber Tired Dozers (11) Scrapers (2) Tractors/Loaders/Backhoes (5)
	2016/2017	300 days	Construct 331 medium residential homes and 169 high density residential homes, 48,461 sq. ft. of community commercial uses, 16,335 sq. ft. office uses, and a 4.35 acre park. Equipment: Cranes (6) Forklifts (13) Generator Sets (5) Tractors/Loaders/Backhoes (10) Welders (7)
	2017	60 days	Asphalt Paving Equipment: Pavers (7) Paving Equipment (9) Rollers (9)
	2017	60 days	Paint Buildings Equipment: Air Compressors (4)

Phase	Year	Phase Duration	Construction Phase Assumptions
Phase 3	2018	30 days	Site Preparation of 38.85 acres (grubbing and land clearing) Equipment: Bulldozer (9) Tractors/Loaders/Backhoes (12)
	2018	60 days	Site Grading of 38.85 acres Equipment: Excavators (4) Graders (3) Rubber Tired Dozers (3) Scrapers (2) Tractors/Loaders/Backhoes (8)
	2018/2019	300 days	Construct 330 medium density residential homes, a 48,460 sq. ft. community commercial uses, and a 4.35 acre park. Equipment: Cranes (3) Forklifts (9) Generator Sets (3) Tractors/Loaders/Backhoes (9) Welders (3)
	2019	60 days	Asphalt Paving Equipment: Pavers (4) Paving Equipment (6) Rollers (6)
	2019	60 days	Paint Buildings Equipment: Air Compressors (4)
Phase 4	2020	20 days	Site Preparation of 30.05 acres (grubbing and land clearing) Equipment: Bulldozer (3) Tractors/Loaders/Backhoes (4)
	2020	30 days	Site Grading of 30.05 acres Equipment: Excavators (2) Graders (1) Rubber Tired Dozers (1) Scrapers (2) Tractors/Loaders/Backhoes (2)
	2020	151 days	Construct 330 single medium density residential homes. Equipment: Cranes (1) Forklifts (3) Generator Sets (1) Tractors/Loaders/Backhoes (3) Welders (1)

Phase	Year	Phase Duration	Construction Phase Assumptions
	2020	30 days	Asphalt Paving Equipment: Pavers (2) Paving Equipment (2) Rollers (2)
	2020	30 days	Paint Buildings Equipment: Air Compressors (2)

Source: City of Turlock, 2013.

Note: California Emissions Estimator Model defaults.

### **Operational Assumptions**

Operational, or long-term, emissions occur over the life of the project and would begin once the uses are in operation. Operational emissions include mobile and area source emissions. Area source emissions are from consumer products, heaters that consume natural gas, gasoline-powered landscape equipment, and architectural coatings (painting). Mobile emissions from motor vehicles are the largest single long-term source of air pollutants from the project.

### **3.3.5 IMPACT EVALUATION CRITERIA**

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, air quality impacts resulting from the implementation of the proposed project would be considered significant if the project would:

- a) Conflict with or obstruct implementation of the applicable air quality plan.
- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- c) 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors).
- d) Expose sensitive receptors to substantial pollutant concentrations.
- e) Create objectionable odors affecting a substantial number of people.

While the final determination of whether or not a project is significant is within the purview of the lead agency pursuant to CEQA Guidelines Section 15064(b), the SJVAPCD recommends that its quantitative and qualitative air pollution thresholds be used to determine the significance of project emissions. These thresholds are discussed under each impact section.

### 3.3.6 IMPACT ANALYSIS

#### **Impact #3.3.1 – Conflict with or obstruct implementation of any applicable air quality plan. [Evaluation Criteria (a)]**

Due to the region's non-attainment status for ozone, PM<sub>2.5</sub>, and PM<sub>10</sub>, if the project generated significant emissions of either of the ozone precursor pollutants (i.e., ROG and NO<sub>x</sub>), PM<sub>10</sub>, or PM<sub>2.5</sub> would exceed the SJVAPCD's significance thresholds, then the project would be considered to conflict with the attainment plans. In addition, if the project would result in a change in land use and corresponding increases in vehicle miles traveled, they may result in an increase in vehicle miles traveled that is unaccounted for in regional emissions inventories contained in regional air quality control plans.

As discussed in Impact 3.3.1, predicted construction and operational emissions would exceed the SJVAPCD significance thresholds for ROG, NO<sub>x</sub>, and PM<sub>10</sub>. As a result, the project may conflict with emissions inventories contained in regional air quality attainment plans and result in a significant contribution to the region's air quality non-attainment status.

The SJVAPCD adopted the 2003 PM<sub>10</sub> Plan on June 19, 2003 and first amended it on December 15, 2003 to comply with federal Clean Air Act requirements. The EPA approved the amended 2003 PM<sub>10</sub> Plan effective June 25, 2004. The Air Basin is currently in attainment of the national standards for PM<sub>10</sub>.

The SJVAPCD Governing Board adopted the 2008 PM<sub>2.5</sub> Plan following a public hearing on April 30, 2008. This plan will assure that the Valley will attain all the PM<sub>2.5</sub> standards - the 1997 federal standards, the 2006 federal standards, and the state standard - as soon as possible. The CARB submitted the 2008 PM<sub>2.5</sub> Plan to the EPA on June 30, 2008. The 2008 PM<sub>2.5</sub> Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Valley into attainment of the 1997 national standards for PM<sub>2.5</sub>. The EPA has identified NO<sub>x</sub> and sulfur dioxide as precursors that must be addressed in air quality plans for the 1997 PM<sub>2.5</sub> standards. The 2008 PM<sub>2.5</sub> Plan is a continuation of the SJVAPCD's strategy to improve the air quality in the San Joaquin Valley.

As an extreme nonattainment area for the 1-hour ozone national standard, the SJVAPCD adopted the Extreme Ozone Attainment Demonstration Plan in 2004. On March 8, 2010, the EPA approved the Plan for 1-hour ozone. Although effective June 15, 2005, the EPA revoked the 1-hour standard; the control requirements remain in effect to ensure progress toward meeting the new more stringent 8-hour ozone standard that has replaced the 1-hour standard. The Plan contains commitments to reduce a precursor of ozone, NO<sub>x</sub>, including NO<sub>x</sub> reductions from indirect sources.

The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Air Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75-percent reduction of NO<sub>x</sub> and 25-percent reduction of ROG. The SJVAPCD Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The plan, with

innovative measures and a “dual path” strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Air Basin residents. The ARB approved the plan on June 14, 2007.

In December 2005, the SJVAPCD adopted the ISR and the accompanying administrative fee rule (Rule 3180). The ISR requires certain development projects within the San Joaquin Valley Air Basin to reduce emissions by specified amounts either through on-site measures or through the payment of air quality impact fees to the SJVAPCD to obtain emission reductions off-site. The emission reduction requirements are designed to reduce PM10 and NOx by amounts needed to meet the commitments of the 2003 PM10 Plan necessary to achieve attainment on schedule. Emission reduction projects envisioned by the ISR include retrofitting heavy-duty engines, replacing agricultural machinery and pumps, paving unpaved roads and road shoulders, trading out combustion-based lawn and agricultural equipment for electrical and other equipment, as well as a host of other projects that result in quantifiable emission reductions of PM10 and NOx. Compliance with Rule 9510 is incorporated into Mitigation Measure 3.31k.

Compliance with the ISR, however, does not achieve full and complete mitigation of a project’s air quality impacts on nonattainment pollutants. This is because the rule requires projects to reduce their construction emissions by 20 percent for NOx and 45 percent for PM10 and operational emissions by 33 percent for NOx and 50 percent for PM10. Mitigation Measures #3.3.1o and #3.3.1p would require the project applicant to consult with the SJVAPCD to develop and implement a Feasible Implementation Plan with the goal of reducing operational emissions to below annual thresholds of ROG, NOx, and PM10.

**Consistency with the City of Turlock’s General Plan Air Quality Element**

The City of Turlock General Plan Air Quality and Greenhouse Gases Element includes several policies with the objective of improving air quality and assisting with the attainment or maintenance of air quality standards. Table 3.3-7 analyzes the project’s consistency with applicable air quality-related policies of the Turlock General Plan.

**Table 3.3-7  
Turlock Air Quality Element Policies**

<b>Chapter/ Element</b>	<b>Policy No.</b>	<b>Policy Text</b>	<b>Consistency Determination</b>
Chapter 8. Air Quality and Greenhouse Gases	Policy 8.1-a	Prioritize Air Quality in Local Planning. Continue efforts to improve air quality in Turlock by integrating air quality analysis and mitigation in land use and transportation planning, environmental review, public facilities and operations, and special programs.	Consistent. The proposed project would mitigate its air quality impacts, although not to less than significant and assist in the implementation of the Air District air quality attainment plans.
	Policy 8.1-b	Participate in Regional Efforts. Cooperate with the San Joaquin Valley Air Pollution Control District and Stanislaus Council of Governments in developing and implementing	Consistent. The Air District will be able to review and comment on the Draft EIR and will

Chapter/ Element	Policy No.	Policy Text	Consistency Determination
		air quality regulations and incentives.	work with the City to develop a Feasible Implementation Plan.
	Policy 8.1-c	Coordination with Other Agencies. Work with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.	Consistent. The City of Turlock collaborated and worked with StanCOG, the SJVAPCD, and other neighboring jurisdictions during the initial phases of the project. These agencies will be able to review and comment on the Draft EIR.
	Policy 8.1-d	Transportation and Residential Density. Designate residential land uses to be higher density than in the past in order to meet population demand and reduce total vehicle miles travelled.	Consistent. The proposed project includes medium and high density residential units that will help to meet the growing needs that are addressed in the newly adopted general plan.
	Policy 8.1-e	Establish Land Use Pattern That Supports Trip Reduction. Establish land use pattern that enables alternatives to automobile use and reduces trip lengths, including transit oriented, mixed use development and neighborhood commercial areas.	Consistent. The project will incorporate pedestrian and bicycle infrastructure as outlined in Mitigation Measure #3.3.1j.
	Policy 8.1-f	Plant and Maintain Trees in Streets and Parks. Adopt a comprehensive tree-planting and maintenance program that recognizes the effect of air pollutants on trees and the role trees can play in removing particulate matter and gaseous pollutants. Provide a viable financing program, particularly in older neighborhoods that are not in a landscape and lighting assessment district.	Consistent. The proposed project includes landscaping and shade canopy requirements to reduce the urban heat island as outlined in Mitigation Measures #3.3.1k and #3.3.1l. Tree planting will comply with the City of Turlock’s Design Guidelines for planting trees, as well as the City’s general plan and zoning ordinance requirements.
		<i>See also policies in Sections 5.2: Roadway Network, Standards and Improvements and 6.3: Street Design and Connectivity relating to street trees. Studies have shown that immediately adjacent to arterial streets, the lead content of air can be about 15 times as high as “normal.” Hardy trees, or those adapted to such conditions, are likely to do much better over time with less care than trees that are unsuited. Rows of trees planted close together and selected and spaced to provide a buffer between the streets and the surrounding</i>	

Chapter/ Element	Policy No.	Policy Text	Consistency Determination
		<p><i>areas (such as by a combination of low and high branching trees planted in alternate rows) can be effective in filtering fumes and particulate matter.</i></p>	
		<p><i>The update of the street tree ordinance should also consider reducing existing spacing standards between trees. Spacing standards vary from 40 to 60 feet for all streets on the list; in older areas, such as along Sycamore Street, tall trees are planted as close as 20 feet apart. Shade trees also reduce radiation heating (the “heat island effect,”) helping to cool the urban environment and reduce peak energy use, and consequently reduce both ozone formation and greenhouse gas production.</i></p>	
	Policy 8.1-g	<p>Reduce Roadway Dust. Improve City roads to reduce dust to the greatest extent feasible by planting shoulders and medians. Dust from roadways contributes to PM10 pollution.</p>	<p>Consistent: The Air District will be able to review and comment on the Draft EIR and will work with the City to develop a Feasible Implementation Plan.</p>
	Policy 8.1-h	<p>Protect Sensitive Receptors from Toxic Air Emissions. For all new development, maintain a minimum 300-foot overlay zone on either side of Highway 99 within the Study Area to protect sensitive receptors from toxic air emissions, with the goal of providing a 500-foot buffer. Within this overlay, avoid approval of new sensitive land uses, and for those projects permitted, require site-specific project design improvements (such as higher-performance windows and HVAC systems) in order to reduce public health risks associated with poor air quality in these locations.</p>	<p>Consistent: All future development will adhere and comply with the City of Turlock’s set back along State Highway 99. In addition, the Air District will be able to review and comment on the Draft EIR and will work with the City to develop a Feasible Implementation Plan.</p>
		<p><i>Sensitive receptors are those segments of the population most susceptible to poor air quality, such as children, the elderly, and those with pre-existing serious health problems affected by air quality. Land uses where sensitive receptors are most likely to spend time include, but are not limited to, hospitals and other medical facilities, schools and school yards, senior centers, child care centers, parks and playgrounds, and residential communities. In traffic related studies, additional non-cancer health risk attributable to proximity was seen within 1,000</i></p>	

Chapter/ Element	Policy No.	Policy Text	Consistency Determination
		<p><i>feet and was strongest within 300 feet. California freeway studies show about a 70 percent drop-off in particulate pollution levels at 500 feet.</i></p> <p>Note: California Environmental Protection Agency, California Air Resources Board, “Air Quality and Land Use Handbook: A Community Health Perspective” April 2005).</p>	
	Policy 8.1-i	<p>Protect Residential Uses from Noxious Odors. Continue the present policy of not permitting any residential uses within a one-half mile radius of the Turlock Regional Water Quality Control Facility. Require that any new potential odor source locating within project screening trigger levels of sensitive receptors, as established by the SJVAPCD, undertake a detailed odor analysis.</p>	<p>Consistent: The project site is not within a one-half mile radius of a Turlock Regional Water Quality Control Facility. All new development will be required to comply with the City of Turlock’s and the SJVAPCD’s Rules and regulation for odor.</p>
	Policy 8.1-j	<p>Support Indirect Source Review Program. Support the San Joaquin Valley Air Pollution Control District in implementing its indirect source review program to reduce emissions of NOx and PM10 from new development projects. Under ISR, projects will be required to estimate off-site emissions and to pay a fee to the District to mitigate these emissions. Other General Plan policies encourage or require new development to have qualities that mitigate air quality impacts and consequently lower Indirect Source fees. These include bicycle lanes, mixed uses, cleaner construction vehicles, and superior energy efficiency.</p> <p><i>City Staff reviews new development projects for air quality impacts and refers projects to the San Joaquin Valley Air Pollution Control District for comments.</i></p>	<p>Consistent. The proposed project will offset its air quality impacts through compliance with Rule 9510 and implementation of a Voluntary Emission Reduction Agreement, which may target older, higher-polluting vehicles for removal from service.</p>
	Policy 8.1-k	<p>Air Quality Improvement Fee. In the Capital Facilities Fee (CFF) program, establish a fund to collect a fee to be paid by all new development to assist in the funding of local projects that contribute to the enhancement of air quality.</p> <p><i>The City of Turlock’s Air Quality Trust Fund, adopted in 1993, was applied to the Northwest Triangle Specific Plan Area; the new fund should collect fees citywide.</i></p>	<p>Consistent: The proposed project will comply with all applicable rules and regulations as required by the City of Turlock.</p>

Chapter/ Element	Policy No.	Policy Text	Consistency Determination
	Policy 8.1-l	Use Air District Guidance in Environmental Review. Continue to use the San Joaquin Valley Air Pollution Control District’s Guide for Assessing and Mitigating Air Quality Impacts for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents. Coordinate with the Air District, project applicants, and other interested parties, during pre development consultation and negotiation over CEQA preparation.	Consistent: The methodology used for this project came from the SJVAPCD’s Guide for Assessing and Mitigating Air Quality Impacts which set forth the recommended thresholds of significance, analysis methodologies, and provides guidance on mitigating significant impacts.
	Policy 8.1m	Minimize Roadway Dust. Require all access roads, driveways, and parking areas serving new development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use. To balance the goals of dust reduction and water infiltration, encourage the use of permeable paving or well maintained gravel for parking spaces.	<p>Consistent: The City has conducted an air quality analysis of the project’s potential air quality impacts and has incorporated mitigation measures to reduce the impacts. All future development will be required to comply with rules and regulation that governs construction related air emission impacts.</p> <p>SJVAPCD will be able to review and comment on the Draft EIR and will work with the City to develop a Feasible Implementation Plan.</p>
	Policy 8.1-n	<p>Construction-Related Air Emissions Impacts. Continue to require mitigation measures as a condition of obtaining permits to minimize dust and air emissions impacts from construction. Require contractors to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>▪ Site watering or application of dust suppressants;</li> <li>▪ Phasing or extension of grading operations;</li> <li>▪ Covering of stockpiles;</li> </ul>	Consistent: The City has conducted an air quality analysis of the project’s potential air quality impacts and has incorporated mitigation measures to reduce the impacts. All future development will be required to comply with rules and regulation that governs construction related air emission impacts.

Chapter/ Element	Policy No.	Policy Text	Consistency Determination
		<ul style="list-style-type: none"> <li>▪ Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour); and</li> <li>▪ Revegetation of graded areas.</li> </ul>	SJVAPCD will be able to review and comment on the Draft EIR and will work with the City to develop a Feasible Implementation Plan.
	Policy 8.1-o	Reduce Trips by City Government. Take the lead in implementing a trip-reduction program for City employees. The program may include carpooling and ridesharing; reimbursement of transit costs; encouragement of flexible work schedules, telecommuting, and teleconferencing.	Not Applicable: This is a City function and is not applicable to project-specific development.
	Policy 8.1-p	Transition to Clean City Fleet. Ensure through its long-range capital expenditure plans that the City deploys cutting-edge technologies and available incentives to minimize emissions from the City’s fleet.	Not Applicable: This is a City function and is not applicable to project-specific development.
	Policy 8.1-q	Institute Green Contracting. Using the Air District’s model ordinance as a guide, establish and follow a “green contracting” rule, awarding points in the bidding process to companies that use low-emission vehicles and equipment.	Consistent: SJVAPCD will be able to review and comment on the Draft EIR and will work with the City to develop a Feasible Implementation Plan.
	Policy 8.1-r	Promote Public Awareness. Support the Air District’s efforts to promote public awareness about air pollution and its relationship to land use and transportation.	Not Applicable: This is a City function and is not applicable to project-specific development.
	Policy 8.1-s	Expand Spare-the-Air Efforts. Be an active partner with the Air District in its “Spare The Air” program. Encourage businesses and residents to avoid pollution-producing activities such as the use of fireplaces and wood stoves, charcoal lighter fluid, pesticides, aerosol products, oil-based paints, and automobiles and other gasoline engines on days when high ozone levels are expected, and promote low-emission vehicles and alternatives to driving.	Consistent: Neither the medium and high density residential units will include fireplaces or woodstoves.
	Policy 8.1-t	Implement REMOVE II Program. Support the Air District in implementing its REMOVE II incentive program to reduce mobile source emissions. Seek funding for City projects, publicize the availability of incentive funding, and identify potentially eligible projects. As defined by the Air District, the following	Consistent: SJVAPCD will be able to review and comment on the Draft EIR and will work with the City to develop a Feasible Implementation Plan.

Chapter/ Element	Policy No.	Policy Text	Consistency Determination
		<p>projects may be eligible:</p> <ul style="list-style-type: none"> <li>▪ Public transportation and commuter vanpool passenger subsidies;</li> <li>▪ Telecommunications, including videoconferencing, distance learning, and internet based business transactions;</li> <li>▪ Bike path construction;</li> <li>▪ Alternative-fuel mechanic training.</li> </ul>	The project will incorporate pedestrian and bicycle infrastructure as outlined in Mitigation Measure #3.3.1j.
	Policy 8.1-u	Support Employer-Based Trip Reduction. Support the Air District’s requirement that companies and organizations with 100 or more employees establish ride-sharing programs, and provide incentives to companies with 25 to 100 employees that do the same. Ridesharing programs may include market-based incentives such as cash for ridesharing, preferential parking for carpools, transit subsidies, cash allowances in lieu of parking spaces, telecommuting and flexible work schedules.	Consistent: SJVAPCD will be able to review and comment on the Draft EIR and will work with the City to develop a Feasible Implementation Plan.

Source of Policies: Turlock General Plan, 2012.

Source of Consistency Determination: Quad Knopf, Inc.

In certifying the Draft EIR (DEIR) for the Turlock General Plan, the City of Turlock adopted mitigation measures that would be applied on both a city-wide and project-level basis through the implementation of the General Plan. The project is consistency with applicable mitigation measures from the DEIR.

**Conclusion:** While the project would be consistent with applicable air quality policies of the Turlock General Plan, it would be inconsistent with certain policies of the SJVAPCD. Even with incorporation of Mitigation Measures #3.3.1a through #3.3.11, listed under Impact #3.3.2, impacts would remain *potentially significant*.

**Mitigation Measures:** Implement Mitigation Measures #3.3.1a through #3.3.11.

**Effectiveness of Mitigation:** With the implementation of the above mitigation measures, the impact remains *significant*.

**Impact #3.3.2 – Violate any air quality standard or contribute substantially to an existing or projected air quality violation. [Evaluation Criteria (b)]**

The SJVAPCD indicates that all control measures in Regulation VIII: Fugitive Dust Prohibitions are required for all construction sites by regulation. The SJVAPCD’s GAMAQI lists additional measures that may be required because of sheer project size or proximity of the project to sensitive receptors. If all appropriate “enhanced control measures” in the GAMAQI are not implemented for these very large or sensitive projects, then construction impacts would be considered significant (unless the Lead Agency provides a satisfactory detailed explanation as to

why a specific measure is unnecessary). The GAMAQI also lists additional control measures (Optional Measures) that may be implemented if further emission reductions are deemed necessary by the Lead Agency. Regulation VIII has been updated and expanded since the GAMAQI guidance was written in 2002. Regulation VIII now includes the “enhanced control measures” contained in the GAMAQI.

The GAMAQI does not require construction emission quantification; however, the SJVAPCD indicated that with the requirement to quantify construction emissions for Rule 9510 and the availability of modeling tools to quantify the emissions, the SJVAPCD now recommends construction emission quantification for all projects large enough to trigger Rule 9510 applicability (i.e., 50 residential units, 2,000 square feet of commercial space, etc.); therefore, Rule 9510 applies to the Master Plan uses. It should be noted that the Master Plan is not the final discretionary approval for the project. The Master Plan will be used to guide the review and approval process of precise development proposals, including tentative maps, site plans, and improvement plans, which will serve as the final discretionary approval and require compliance with Rule 9510.

Ozone is a secondary pollutant that can be formed miles away from the source of emissions through reactions of ROG and NO<sub>x</sub> emissions in the presence of sunlight. Therefore, ROG and NO<sub>x</sub> are termed ozone precursors. The Air Basin often exceeds the ozone standards. Therefore, if the project emits a substantial quantity of ozone precursors, the project may contribute to an exceedance of the ozone standard. The SJVAPCD established significance thresholds for ozone precursors, ROG and NO<sub>x</sub>, and has published them in its GAMAQI. For typical projects, operation-related emissions that exceed the threshold of 10 tons per year for ROG or NO<sub>x</sub>, would be considered significant. The threshold for PM<sub>10</sub> is not identified in the GAMAQI; however, pursuant to direction provided by the SJVAPCD, 15 tons per year is used as a threshold for large projects, such as the proposed project.

The GAMAQI does not have quantitative thresholds for construction emissions. However, the GAMAQI does have operational thresholds for ROG and NO<sub>x</sub> of 10 tons per year for each. Since the GAMAQI was published, the SJVAPCD has been recommending use of a PM<sub>10</sub> and PM<sub>2.5</sub> threshold of 15 tons per year. To present a worst-case evaluation, the annual thresholds are compared with the combined construction and operational emissions during the years where said emissions overlap.

The annual significance thresholds to be used for the Master Plan uses for combined operational and construction emissions are as follows:

- 10 tons per year ROG;
- 10 tons per year NO<sub>x</sub>;
- 15 tons per year PM<sub>10</sub>; and
- 15 tons per year PM<sub>2.5</sub>.

**Existing Emissions**

There are currently agricultural, residential, and commercial uses within the project area. Some of the agricultural land is fallow, some has been used for row crops, and one area has an orchard. Within the project area, there are two occupied single-family residences fronting on Golf Road. There are ten, occupied single-family residences and one occupied mobile home fronting Glenwood Avenue. The portion of the project site that has been used for agricultural purposes generates fugitive dust (PM10 and PM2.5) from tilling and windblown dust, and ROG, NOx and PM10 from agricultural equipment exhaust. The existing emissions are not estimated to provide a worst-case analysis for the project uses.

**Project Emissions**

Air pollutant emissions for the various years of construction and operation are shown in Table 3.3-8. As shown in the table, NOx emissions are exceeded every year, ROG emissions are exceeded for every year, and PM10 emissions are exceeded for every after 2020. PM2.5 emissions are not exceeded.

As indicated in Table 3.3-8, combined construction and operational emissions would exceed SJVAPCD thresholds between 2014 and 2020. Emissions of ROG and NOx exceed the ozone precursor thresholds, which means the project may contribute to a violation of the ozone standards, this is a significant impact. Emissions of PM10 exceed the SJVAPCD significance threshold, which means that the project may contribute to a violation of the PM10 standards, this is a *significant* impact.

The Air Basin is in attainment for the nitrogen dioxide ambient air quality standards. The national ambient air quality standard for 1 hour nitrogen dioxide is 0.100 ppm. As shown in Table 3.3-8, the highest 1 hour concentration of nitrogen dioxide is 0.056 ppm, which is below 0.100 ppm. As discussed previously, the project emissions exceed the ozone precursor threshold of 10 tons per year. The ozone threshold was not set to determine exceedances of the nitrogen dioxide standard. Even though project emissions of NOx are relatively high, the emissions will be distributed throughout the State and will be dispersed. Rule 9510 will also reduce NOx emissions in the Air Basin. However, to be conservative and because there is no certain way to determine this impact on a regional basis, this impact is *potentially significant* and the project could contribute to an exceedance of the nitrogen dioxide standard.

**Table 3.3-8  
Project Air Pollutant Emissions (Tons/Year)**

<b>Year</b>	<b>Phase</b>	<b>ROG</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>
2014	<b>Phase 1 - Construction</b>	3.02	21.49	1.97	1.54
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	No	<b>Yes</b>	No	No
2015	<b>Phase 1 - Construction</b>	9.19	11.78	0.92	0.80
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	No	<b>Yes</b>	No	No
2016	<b>Phase 2 - Construction</b>	3.47	24.30	2.66	1.92
	<b>Phase 1 – Operation</b>	9.06	17.46	6.13	0.88

	<b>Total</b>	12.53	41.76	8.79	2.8
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	<b>Yes</b>	<b>Yes</b>	No	No
2017	<b>Phase 2 - Construction</b>	10.25	11.11	0.86	0.72
	<b>Phase 1 - Operation</b>	9.06	17.46	6.13	0.88
	<b>Total</b>	19.31	28.57	6.99	1.6
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	<b>Yes</b>	<b>Yes</b>	No	No
2018	<b>Phase 3 - Construction</b>	1.82	12.41	0.65	0.90
	<b>Phase 1 and 2 Operation</b>	18.31	33.04	12.24	1.69
	<b>Total</b>	20.13	45.45	12.89	2.59
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	<b>Yes</b>	<b>Yes</b>	No	No
2019	<b>Phase 3 - Construction</b>	7.52	6.17	0.45	0.37
	<b>Phase 1 and 2 Operation</b>	18.31	33.04	12.24	1.69
	<b>Total</b>	25.83	39.21	12.69	2.06
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	<b>Yes</b>	<b>Yes</b>	No	No
2020	<b>Phase 4 - Construction</b>	6.06	3.20	0.33	0.21
	<b>Phase 1, 2, and 3 – Operation</b>	25.2	44.18	17.4	2.17
	<b>Total</b>	31.26	47.38	17.73	2.38
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	No
2021	Phase 1 – 4 -Operation	31.13	54.11	22.5	2.61
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	No
2025	Phases 1 -4 - Operation	26.16	37.70	21.87	1.79
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	No
2030	Phases 1 -4 - Operation	24.55	33.65	21.76	1.69
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	No

Source: City of Turlock, 2013.

Note: CalEEMod results (Appendix C).

Accordingly, mitigation is proposed to reduce project-related emissions. Mitigation Measure #3.3.1a through #3.3.1l would reduce emissions from ROG, NO<sub>x</sub>, and PM<sub>10</sub>. The potential reductions from Mitigation Measures #3.3.1a through #3.3.1l are not calculated because the mitigation would not be enough to reduce pollutants below the significance thresholds because the emissions are so high. Mitigation Measure #3.3.1k requires that each development plan comply with Rule 9510, which would reduce 20 percent of the construction-related NO<sub>x</sub> emissions and 45 percent of the construction PM<sub>10</sub> (exhaust) emissions, 33 percent of operational NO<sub>x</sub> over the first 10 years, and 50 percent of the operational PM<sub>10</sub> emissions over the first 10 years. However, ROG emissions are not reduced through the rule, and reductions would not be sufficient to reduce combined emissions to less than significance thresholds.

The SJVAPCD has recommended that large projects whose emissions exceed the thresholds of significance consult with the Air District to develop and implement a Feasible Implementation Plan (FIP) with the goal of reducing project specific impacts on air quality to a less than significant level. This recommendation has been incorporated into the project as Mitigation Measures #3.3.1l.

The project would produce minimal emissions of sulfur oxides (SO<sub>x</sub>), primarily due to increased regulations for reducing SO<sub>x</sub> from fuel. As shown in Appendix C, SO<sub>x</sub> emissions are less than one ton per year which is substantially under the state ambient air quality standard of 0.04 ppm and the federal ambient air quality standard of 0.14 ppm. The project emissions would not cause or contribute to an air quality standard violation for sulfur dioxide. This impact is *less than significant*.

Other pollutants such as visibility reducing particles, lead, hydrogen sulfide, and vinyl chloride emissions would either not be emitted or would be at low levels. The project would emit CO during construction and operation. Operational emissions of CO are discussed in Impact 3.3.2. The air basin is in attainment for CO standards. The national 1-hour CO standard is 35 ppm and the highest reported concentration of CO is well below 35 ppm. While construction emissions of CO are substantial, it is dispersed rapidly; therefore it would not contribute to an exceedance of the CO standards. This impact is *less than significant*.

#### **San Joaquin Valley Air Pollution Control District, Rule 9510**

The project applicant will be required to demonstrate compliance with all applicable requirements of San Joaquin Valley Air Pollution Control District, Rule 9510 via the submittal of a Rule 9510 Air Impact Assessment Application (AIA). The AIA will achieve a 45 percent reduction in NO<sub>x</sub> statewide average construction emissions and a 50 percent reduction in PM<sub>10</sub> statewide average construction exhaust emissions. The AIA will also achieve a 33-percent reduction in NO<sub>x</sub> and a 45-percent reduction in PM<sub>10</sub> over the first 10 years of operations through the use of onsite emissions reduction measures or through the payment of offsite mitigation fees to the SJVAPCD for purchase of emission reductions. The requirements of the approved AIA will be incorporated into proposed projects.

#### **Emissions after Mitigation**

Table 3.3-9 shows the project's estimated emissions after incorporation of mitigation measures based on the programmatic evaluation of the project (see mitigation measures following the conclusion). As noted in the mitigation measures, the project applicant will work with the SJVAPCD to refine the modeling based on actual construction and operational information that is presently unavailable because of the conceptual nature of the project at this time.

**Table 3.3-9  
Mitigated Air Pollutant Emissions (Tons/Year)**

<b>Year</b>	<b>Phase</b>	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
2014	<b>Phase 1 Construction</b>	3.02	21.49	1.97	1.54
	Rule 9510 Reductions	N/A	2.346	0.8865	N/A
	Subtotal	3.02	19.144	1.0835	0
	FIP Reductions	0	-9.154	0	0
	<b>Total</b>	<b>3.02</b>	<b>9.99</b>	<b>1.0835</b>	<b>1.54</b>
	Significance Threshold Significant?	10 No	10 No	15 No	15 No
2015	<b>Phase 1 Construction</b>	9.19	11.78	0.92	0.80
	Rule 9510 Reductions	N/A	-2.356	0	N/A

Year	Phase	ROG	NOx	PM10	PM2.5	
2016	Subtotal	9.19	9.424	0.92	0.80	
	FIP Reductions	0	0	0	0	
	<b>Total</b>	<b>9.19</b>	<b>9.424</b>	<b>0.92</b>	<b>0.80</b>	
	Significance Threshold	10	10	15	15	
	Exceed Significance Threshold?	No	No	No	No	
	<b>Phase 2 Construction</b>	3.47	24.30	2.66	1.92	
	Rule 9510 Reductions	N/A	-4.86	0	N/A	
	Subtotal	3.47	19.44	2.66	1.92	
	<b>Phase 1 Operation</b>	9.06	17.46	6.13	0.88	
	Rule 9510 Reductions	N/A	-3.492	0	N/A	
	Subtotal	9.06	13.968	6.13	0.88	
	Phase2-Construction/Phase 1-Operation	12.53	33.408	8.79	2.8	
	Subtotal					
	FIP Reductions	-2.54	-23.418	0	0	
<b>Total</b>	<b>9.99</b>	<b>9.99</b>	<b>8.79</b>	<b>2.8</b>		
Significance Threshold	10	10	15	15		
Exceed Significance Threshold?	No	No	No	No		
2017	<b>Phase 2 Construction</b>	10.25	11.11	0.86	0.72	
	Rule 9510 Reductions	N/A	-2.222	0.86	N/A	
	Subtotal	10.25	8.888	0.86	0.72	
	<b>Phase 1 Operation</b>	9.06	17.46	6.13	0.88	
	Rule 9510 Reductions	N/A	-3.492	0	N/A	
	Subtotal	9.06	13.968	6.13	0.88	
	Phase 2-Construction/Phase 1-Operation	19.31	22.856	7.04	1.6	
	Subtotal					
	FIP Reductions	-9.32	-12.866	0	0	
	<b>Total</b>	<b>9.99</b>	<b>9.99</b>	<b>7.04</b>	<b>1.6</b>	
	Significance Threshold	10	10	15	15	
	Exceed Significance Threshold?	No	No	No	No	
	2018	<b>Phase 3 Construction</b>	1.82	12.41	0.65	0.90
		Rule 9510 Reductions	N/A	-2.482	0	N/A
Subtotal		1.82	9.928	0.65	0.09	
<b>Phase 1 and 2 Operation</b>		18.31	33.04	12.24	1.69	
Rule 9510 Reductions		N/A	-6.608	-5.508	N/A	
Subtotal		18.31	26.432	6.732	1.69	
Phase 3-Construction/Phase 1 and 2-Operation		20.13	36.36	7.382	1.69	
Subtotal						
FIP Reductions		-10.14	-26.37	0	0	
<b>Total</b>		<b>9.99</b>	<b>9.99</b>	<b>7.382</b>	<b>1.69</b>	
Significance Threshold		10	10	15	15	
Exceed Significance Threshold?		No	No	No	No	
2019		<b>Phase 3 Construction</b>	7.52	6.17	0.45	0.37
		Rule 9510 Reductions	N/A	0	0	N/A
	Subtotal	7.52	6.17	0.45	0.37	
	<b>Phase 1 and 2 Operation</b>	18.31	33.04	12.24	1.69	
	Rule 9510 Reductions	N/A	-6.608	-5.508	N/A	
	Subtotal	18.31	26.432	6.732	1.69	
	Phase 3 Construction/Phase 1 and 2-Operation	25.83	32.602	7.182	2.06	
	Subtotal					
	FIP Reductions	-15.84	-22.612	0	0	
	<b>Total</b>	<b>9.99</b>	<b>9.99</b>	<b>7.182</b>	<b>8.98</b>	
	Significance Threshold	10	10	15	15	
	Exceed Significance Threshold?	No	No	No	No	

Year	Phase	ROG	NOx	PM10	PM2.5
2020	<b>Phase 4 Construction</b>	6.06	3.20	0.33	0.21
	Rule 9510 Reductions	N/A	0	0	N/A
	Subtotal	6.06	3.20	0.33	0.21
	<b>Phase 1, 2, and 3 Operation</b>	25.2	44.18	17.4	2.17
	Rule 9510 Reductions	N/A	-8.836	-7.829	N/A
	Subtotal	25.2	35.344	9.571	2.17
	Phase 4 Construction/Phase 1, 2, and 3-Operation	31.26	47.38	17.73	2.38
	Subtotal				
	FIP Reductions	-21.27	-37.39	-2.74	2.38
	<b>Total</b>	<b>9.99</b>	<b>9.99</b>	<b>14.99</b>	<b>2.73</b>
	Significance Threshold	10	10	15	15
	Exceed Significance Threshold?	No	No	No	No
2021	<b>Phases 1 and 4 Operation</b>	31.13	54.11	22.5	2.61
	Rule 9510 Reductions	N/A	-10.822	-10.125	N/A
	Subtotal	31.13	43.288	12.375	2.61
	FIP Reductions	-21.14	-33.298	0	0
	<b>Total</b>	<b>9.99</b>	<b>9.99</b>	<b>12.375</b>	<b>2.61</b>
		Significance Threshold	10	10	15
	Exceed Significance Threshold?	No	No	No	No
2025	<b>Phases 1 and 4 Operation</b>	26.16	37.70	21.87	1.79
	Rule 9510 Reductions	N/A	-7.54	-9.8415	N/A
	Subtotal	26.16	24.12	12.0285	3.09
	FIP Reductions	-16.17	-14.13	0	0
	<b>Total</b>	<b>9.99</b>	<b>9.99</b>	<b>12.0285</b>	<b>3.09</b>
		Significance Threshold	10	10	15
	Exceed Significance Threshold?	No	No	No	No
2030	<b>Phases 1 and 4 Operation</b>	24.55	33.65	21.76	1.69
	Rule 9510 Reductions	N/A	-6.73	-9.792	N/A
	Subtotal	24.55	26.92	11.968	1.69
	FIP Reductions	-14.56	-16.93	0	0
	<b>Total</b>	<b>9.99</b>	<b>9.99</b>	<b>11.968</b>	<b>1.69</b>
		Significance Threshold	10	10	15
	Exceed Significance Threshold?	No	No	No	No

Source: City of Turlock, 2013.

Note: California Emissions Estimator Model results (Appendix C).

Note: Rule 9510 and FIP reductions are only applied to reduce those emissions that exceed the air districts thresholds. Where not exceeded, the result is 0 applied.

As noted in the table, NOx will exceed the SJVAPCD's thresholds of significance during every phase, but after applying Rule 9510 and FIP reductions impacts are reduced. During construction of the second phase and operation of the first phase, ROG then exceeds the air district's thresholds, but is reduced with mitigation. Both NOx and ROG exceed thresholds in all phases after. During the 2020 phase, PM10 exceeds the SJVAPCD's thresholds and mitigation is applied.

**Conclusion:** The project would exceed the SJVAPCD's regional thresholds during construction and operation for ROG, NOx and PM10 for various years. If FIP reductions are not considered, such violations would be more frequent and quantitatively significant. Therefore, these impacts would be considered *potentially significant*.

**Mitigation Measure #3.3.1a:** Prior to issuance of grading permits for each development within the Morgan Ranch Master Plan project site, the project applicant shall provide information to the City of Turlock describing the methods by which the following measures will be complied with:

- Off-road equipment used onsite shall achieve a fleet average emissions equal to or less than the Tier II emissions standard of 4.9 grams of NO<sub>x</sub> per horsepower hour. This can be achieved through any combination of uncontrolled engines and engines complying with Tier II and above engine standards. Tier II emission standards are set forth in Section 2423 of Title 13 of the California Code of Regulations and Part 89 of Title 40 Code of Federal Regulations;
- Construction equipment shall be properly maintained at an offsite location; maintenance shall include proper tuning and timing of engines. Equipment maintenance records and data sheets of equipment design specifications shall be kept on-site during construction;
- Onsite construction equipment shall not idle for more than 5 minutes in any one hour;
- During the building phase, onsite electrical hook ups shall be provided for electric construction tools including saws, drills and compressors, to eliminate the need for diesel powered electric generators; and
- Construction workers shall be encouraged to carpool to and from the construction site. Workers shall be informed in writing and a letter shall be placed on file in the Turlock Development Services office documenting efforts to carpool.

**Mitigation Measure #3.3.1b:** Construction contracts shall include a provision that requires all architectural coatings to be zero-volatile organic compound (VOC) paints (assumes no more than 100 grams/liter of VOC) and coatings. All paints shall be applied using either high-volume low-pressure (HVLP) spray equipment or by hand application. For a list of low-VOC paints, see [www.aqmd.gov/prdas/brochures/paintguide.html](http://www.aqmd.gov/prdas/brochures/paintguide.html).

**Mitigation Measure #3.3.1c:** Prior to issuance of grading permits, the project proponent will provide the City of Turlock with a traffic control plan that describes in detail safe detours around the project construction site, provides temporary traffic control (i.e., flag person) during construction-related truck-hauling activities, and minimizes traffic flow interference from construction activities. The plan may include:

- Advance public notice of alternative routes;
- Use of public transportation and satellite parking areas with a shuttle service for construction personnel;
- Schedule operations that affect traffic for off-peak hours;
- Minimize obstruction of through-traffic lanes; and

- Provide a flag person to guide traffic properly and ensure safety at construction sites.

**Mitigation Measure #3.3.1d:** Construction staging and queuing areas shall not be located within 500 feet of sensitive receptors.

**Mitigation Measure #3.3.1e:** Construction plans shall provide for the installation of automated lighting and thermal controls in all non-residential facilities. The City of Turlock will verify compliance during review of construction plans.

**Mitigation Measure #3.3.1f:** Construction plans shall include one or more of the following roofing technologies to reduce energy consumption:

- EPA “Energy Star” approved roofing materials and
- “Green Roof” Technology.

**Mitigation Measure #3.3.1g:** Construction plans shall address passive energy conservation through building orientation, use of natural ventilation and shading in a way that does not compromise the thermal integrity of the building or the implementation of Mitigation Measure #3.3.1i. The City of Turlock will verify compliance during review of construction plans.

**Mitigation Measure #3.3.1h:** Each development project within the Morgan Ranch Master Plan project site shall be designed to achieve a minimum 20 percent energy efficiency above 2008 Title 24 standards. Prior to issuance of building permits, the project applicant shall provide a third-party verification to the City of Turlock demonstrating that the project achieves this energy efficiency goal.

**Mitigation Measure #3.3.1i:** Prior to issuance of building permits, a landscape plan shall be prepared and submitted to the City of Turlock for review and approval pursuant to the City’s normal planning process that provide shade trees and foliage to reduce building and surface lot heating/cooling needs, and conform to landscape standards established by the City of Turlock. The landscape plan shall comply with the State-mandated Water Efficient Landscape Ordinance and shall have the following components:

1. At least 50 percent of installed trees and shrubs shall be low-ozone forming potential (Low-OFP) and drought-tolerant species; and
2. The landscape plan shall be designed to shade 50 percent of paved surfaces within 10 years of buildout.

**Mitigation Measure #3.3.1j:** Prior to approval of the final site plan for the non-residential uses that would receive five or more truck deliveries per week, the project applicant shall demonstrate that the following anti-idling measures would be implemented:

- Provide available electricity hookups for trucks in the loading dock areas;

- Signs shall be posted in dock areas advising drivers that idling shall not occur for more than 3 minutes; and
- Telephone numbers of the building facilities manager and the California Air Resources Board shall be posted on signs at truck entrances to report idling violations.

**Mitigation Measure #3.3.1k:** Prior to issuance of grading permits, the project applicant will work with the SJVAPCD to determine project emissions based on a more refined construction schedule and proposed construction equipment to determine if construction emissions exceed the Air District thresholds of significance after compliance with the Indirect Source Review Rule. If construction emissions exceed the Air District thresholds of significance, the applicant shall consult with the SJVAPCD to develop and implement a Feasible Implementation Plan with a goal of reducing construction emissions to below annual thresholds of 10 tons per year of ROG, 10 tons per year of NO<sub>x</sub>, and 15 tons per year of PM<sub>10</sub>. The Feasible Implementation Plan as identified above shall identify offsite mitigation measures proposed to be implemented by the applicant and agreed upon by the SJVAPCD to be appropriate and effective to reduce emissions. Alternatively, the Feasible Implementation Plan shall identify the mitigation fee required to be paid by the applicant based on the amount of emission reductions needed to bring the project's construction impacts below the annual thresholds. The project applicant shall provide this funding prior to the start of construction to help facilitate emission offsets that are as real-time as possible. The SJVAPCD will use the funds to purchase the required emission reductions through offsite mitigation strategies. The emissions reduction agreement must be implemented in addition to the required measure to reduce construction-related diesel equipment exhaust emissions listed in Mitigation Measure #3.3.1a. Development and implementation of the emissions reduction agreement shall be fully funded by the project applicant. Preference shall be given to offsite emission reduction projects that are located in or in close proximity to Turlock. The applicant shall submit documentation to the City of Turlock verifying that this has been successfully completed.

**Mitigation Measure #3.3.1l:** Prior to issuance of building permits, the project applicant will work with the SJVAPCD to determine if the project's operational emissions exceed the Air District thresholds of significance based on the incorporation of onsite mitigation measures and detailed project information. If the operational emissions exceed the Air District's thresholds of significance, the applicant shall consult with the SJVAPCD to develop and implement a Feasible Implementation Plan with a goal of reducing operational emissions to below annual thresholds of 10 tons per year of ROG, 10 tons per year of NO<sub>x</sub>, and 15 tons per year of PM<sub>10</sub>. The Feasible Implementation Plan shall identify offsite mitigation measures proposed to be implemented by the applicant and agreed upon by the SJVAPCD to be appropriate and effective to reduce emissions. Alternatively, the Feasible Implementation Plan shall identify the mitigation fee required to be paid by the applicant based on the amount of emission reductions needed to bring the project impacts below the annual thresholds. The SJVAPCD will use the funds to purchase the required emission reductions through offsite mitigation strategies. Payment of offsite fees shall be prior to issuance of occupancy permits. The Feasible Implementation Plan requires the SJVAPCD approval and verification of payment prior to receiving final occupancy permits from the City of Turlock.

**Effectiveness of Measures:** With the implementation of the above measures, the project would still violate air quality standards and contribute substantially to existing or projected air quality violations. The impact would be *significant and unavoidable*.

**Impact #3.3.3 – Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors). [Evaluation Criteria (c)]**

The Air Basin is in nonattainment for ozone, PM10, and PM2.5, which are discussed individually. Each pollutant is addressed individually in the following analysis.

#### **Ozone**

As discussed in Impact 3.3.1, project emissions emitted within the Air Basin would exceed the significance thresholds for ROG and NOx. Therefore, project emissions could cumulatively combine with other sources in the Air Basin and could cause a future violation of the ozone standards. This impact is *potentially significant*.

The project has incorporated Mitigation Measures #3.3.1a through #3.3.1l that would reduce the project's emissions. Specifically, Mitigation Measures #3.3.1k and #3.3.1l would require the applicant to enter into a voluntary agreement with the Air District to reduce project emissions of ROG and NOx to less than the thresholds of significance. According to the Guide for Assessing and Mitigating Air Quality Impacts, the Air District based the ozone precursor thresholds' "significant contribution" definition on the California Clean Air Act's offset requirements for ROG and NOx. The ROG and NOx offset thresholds are described in SJVAPCD Rule 2201 (New and Modified Stationary Source Review). Accordingly, if the project reduces its emissions below the thresholds of significance, it would not result in cumulatively considerable net increase of ROG and NOx and would therefore have a less than significant impact. Such reduction, however, assumes the ability to fully mitigated impacts through the Feasible Implementation Plan. The impact must therefore be considered *significant*.

#### **Particulate Matter**

As discussed in Impact 3.3.1, emissions during construction and operation would exceed the PM10 significance threshold, primarily due to paved road dust from project related motor vehicles and trucks traveling throughout the State. A smaller proportion of these emissions is from the motor vehicle and truck exhaust. Much of the road dust would settle out near the road. However, some of it could extend up into the air, cumulatively combining with other sources, and cause a violation of the PM10 ambient air quality standards. This is a potentially significant impact.

The project has incorporated Mitigation Measures #3.3.1a through #3.3.1l that would reduce the project's emissions. Specifically, Mitigation Measures #3.3.1k would require the applicant to enter into a voluntary agreement with the Air District to reduce project emissions of PM10 to less than the thresholds of significance. If the project reduces its emissions below the thresholds

of significance it would not result in cumulatively considerable net increase of PM10 and would therefore have a less than significant impact. Such reduction, however, assumes the ability to fully mitigated impacts through the Feasible Implementation Plan. The impact must therefore be considered *significant*.

**Air Quality Plan**

Section 15130(b) of the CEQA Guidelines states the following:

The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. This analysis considers the current CEQA Guidelines, which includes the recent amendments approved by the Natural Resources Agency and effective on March 18, 2010. Under the amended CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The air quality attainment plans describe and evaluate the future projected emissions sources in the Air Basin and sets forth a strategy to meet both state and federal Clean Air Act planning requirements and federal ambient air quality standards. Therefore, the plans are relevant plans for a CEQA cumulative impacts analysis. As discussed in Impact 3.3.3, the project is not consistent with the air quality attainment plans. Therefore, this is a potentially significant impact. However, with the incorporation of Mitigation Measures #3.3.1a through #3.3.11, the project would be consistent with the air quality attainment plans. Such reduction, however, assumes the ability to fully mitigated impacts through the Feasible Implementation Plan. The impact must therefore be considered *significant*.

**Conclusion:** Impacts would be *significant*.

**Mitigation Measures:** Implement Mitigation Measures #3.3.1a through #3.3.11.

**Effectiveness of Mitigation:** Despite the implementation of the above mitigation measures, the impact would be *significant and unavoidable*.

**Impact #3.3.4 – Expose sensitive receptors to substantial pollutant concentrations.  
[Evaluation Criteria (d)]**

The SJVAPCD has adopted the following significance thresholds for Toxic Air Contaminants:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million; or

- Ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the MEI.

The three air quality issues of concern as they relate to sensitive receptors are toxic air contaminants, valley fever, and naturally occurring asbestos. Each issue is discussed separately.

**Construction: Toxic Air Contaminants**

Health-related risks associated with diesel exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. The estimation of cancer risk associated with exposure to toxic air contaminants is typically calculated based on a 70-year period of exposure. The use of diesel-powered construction equipment for the project, however, would be temporary (approximately 7 years in duration) and episodic and would occur over a relatively large area. For this reason, diesel-exhaust generated by construction, in and of itself, would not be expected to create conditions where the probability of contracting cancer over a 70-year lifetime of exposure is greater than 10 in 1 million for nearby receptors.

**Operation: Toxic Air Contaminants**

The ARB Air Quality and Land Use Handbook contains recommendations that will “help keep California’s children and other vulnerable populations out of harm’s way with respect to nearby sources of air pollution”, including recommendations for distances between sensitive receptors and certain land uses. These recommendations are assessed as follows:

- Heavily traveled roads: The ARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. Roads assessed in the traffic study do not exceed a volume of 100,000 vehicles per day;
- Distribution centers: The ARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. There are no distribution centers within the vicinity of the project site;
- Fueling stations: The ARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities; and
- Dry cleaning operations: The ARB recommends avoiding siting new sensitive land uses within 300 feet of any dry cleaning operation that uses perchloroethylene. For operations with two or more machines, ARB recommends a buffer of 500 feet. For operations with three or more machines, ARB recommends consultation with the local air district. (California Air Resource Board 2005)

The project would include commercial uses (approximately 96,922 square feet) that may have service and delivery vehicles that generate diesel particulate matter (DPM) or may generate polycyclic aromatic hydrocarbons (PAHs), both toxic air contaminants. It is unknown what type of commercial uses will ultimately occur within the project site; however, in order to provide an estimate of potential impacts the following assumptions were included in a health risk screening. The SJVAPCD has a screening tool to determine if project impacts exceed the SJVAPCD threshold of 10 in one million probability of contracting cancer for the Maximally Exposed Individual (MEI). The screening tool requires information on the anticipated number of heavy-heavy duty diesel trucks (HHDT) and Truck Refrigeration Units (TRUs) servicing the proposed land uses and the estimated amount of gasoline dispensed by the facility. In order to provide an estimate, the following assumptions were included in the modeling:

- 5 HHDT trips per day, 5 days per week, 52 weeks per year;
- 4 TRU trips per day, 5 days per week, 52 weeks per year;
- 2 Restaurants; and
- Idling time of five minutes (The ARB's Airborne Toxic Control Measure (ATCM) limits diesel truck idling to five minutes).

For comparative purposes, a national large big box retailer has on average two to three TRUs per day and five to six truck trips per day for projects of 200,000 square feet of regional retail uses. The proposed project would include neighborhood and community commercial uses and would be expected to have lower truck trips per day (Trip Generation, Fourth Edition, Institute of Transportation Engineers).

**Conclusion:** Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation is necessary.

**Impact #3.3.5 – Exposure of a substantial number of people to sources of objectionable odors. [Evaluation Criteria (e)]**

If the proposed project were to result in a sensitive odor receptor being located in the vicinity of an undesirable odor generator, the impact would be considered significant. The SJVAPCD regulates odor sources through its nuisance rule, Rule 4102, but has no quantitative standards for odors. The SJVAPCD presents a list of project screening trigger levels for potential odor sources in its GAMAQI, which is displayed in Table 3.3-10. If the project were to result in sensitive receptors being located closer to an odor generator in the list in Table 3.3-10 than the recommended distances, a more detailed analysis including a review of SJVAPCD odor complaint records is recommended.

Significant odor problems are defined as:

- More than one confirmed complaint per year averaged over a three year period; or
- Three unconfirmed complaints per year averaged over a three-year period.

**Table 3.3-10  
Screening Levels for Potential Odor Sources**

<b>Odor Generator</b>	<b>Distance (Miles)</b>
Wastewater Treatment Facilities	2
Sanitary Landfill	1
Transfer Station	1
Composting Facility	1
Petroleum Refinery	2
Asphalt Batch Plant	1
Chemical Manufacturing	1
Fiberglass Manufacturing	1
Painting/Coating Operations (e.g., auto body shop)	1
<b>Food Processing Facility</b>	1
<b>Feed Lot/Dairy</b>	1
Rendering Plant	1

Source: San Joaquin Valley Air Pollution Control District, 2002.

***Odors from the Project***

The project would allow for the development of residential and commercial uses within the project area. These land uses are not considered sources of objectionable odors. This impact would be ***less than significant***.

During construction, the various diesel-powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts would be ***less than significant***.

***Odors from Surrounding Land Uses***

The project site is located adjacent to the many different types of businesses which include the Clausen Meat Packing Inc. located at 19455 E Clausen Road, approximately 0.9 miles south of the project site and Foster Farms located at 500 F Street, approximately 0.7 miles south of the project site. As listed in Table 3.3-10, both of these uses are within 1 mile of the project site. Accordingly, additionally analysis was conducted to determine potential odor impacts.

A records request was submitted to the San Joaquin Valley Air Pollution Control to determine if there had been odor complaints filed against the Clausen Meat Packing Inc. and Foster Farms. According to the Air District's records there have been no complaints.

**Conclusion:** The impact will be ***less than significant***.

**Mitigation Measures:** No mitigation measures are required.

air quality standards. Therefore, the plans are relevant plans for a CEQA cumulative impacts analysis. As discussed in Impact 3.3.3, the project is not consistent with the air quality attainment plans. Therefore, this is a potentially significant impact. However, with the incorporation of Mitigation Measures #3.3.1a through #3.3.11, the project would be consistent with the air quality attainment plans. Such reduction, however, assumes the ability to fully mitigate impacts through the Feasible Implementation Plan. The impact must therefore be considered *significant*.

**Conclusion:** Impacts would be *significant*.

**Mitigation Measures:** Implement Mitigation Measures #3.3.1a through #3.3.11.

**Effectiveness of Mitigation:** Despite the implementation of the above mitigation measures, the impact would be *significant and unavoidable*.

**Impact #3.3.5 – Expose sensitive receptors to substantial pollutant concentrations.**

**[Evaluation Criteria (d)]**

The SJVAPCD has adopted the following significance thresholds for Toxic Air Contaminants:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million; or
- Ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the MEI.

The three air quality issues of concern as they relate to sensitive receptors are toxic air contaminants, valley fever, and naturally occurring asbestos. Each issue is discussed separately.

**Construction: Toxic Air Contaminants**

Health-related risks associated with diesel exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. The estimation of cancer risk associated with exposure to toxic air contaminants is typically calculated based on a 70-year period of exposure. The use of diesel-powered construction equipment for the project, however, would be temporary (approximately 7 years in duration) and episodic and would occur over a relatively large area. For this reason, diesel-exhaust generated by construction, in and of itself, would not be expected to create conditions where the probability of contracting cancer over a 70-year lifetime of exposure is greater than 10 in 1 million for nearby receptors.

**Operation: Toxic Air Contaminants**

The ARB Air Quality and Land Use Handbook contains recommendations that will “help keep California’s children and other vulnerable populations out of harm’s way with respect to nearby sources of air pollution”, including recommendations for distances between sensitive receptors and certain land uses. These recommendations are assessed as follows:

- Heavily traveled roads: The ARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. Roads assessed in the traffic study do not exceed a volume of 100,000 vehicles per day;
- Distribution centers: The ARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. There are no distribution centers within the vicinity of the project site;
- Fueling stations: The ARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities; and
- Dry cleaning operations: The ARB recommends avoiding siting new sensitive land uses within 300 feet of any dry cleaning operation that uses perchloroethylene. For operations with two or more machines, ARB recommends a buffer of 500 feet. For operations with three or more machines, ARB recommends consultation with the local air district. (California Air Resource Board 2005)

The project would include commercial uses (approximately 96,922 square feet) that may have service and delivery vehicles that generate diesel particulate matter (DPM) or may generate polycyclic aromatic hydrocarbons (PAHs), both toxic air contaminants. It is unknown what type of commercial uses will ultimately occur within the project site; however, in order to provide an estimate of potential impacts the following assumptions were included in a health risk screening. The SJVAPCD has a screening tool to determine if project impacts exceed the SJVAPCD threshold of 10 in one million probability of contracting cancer for the Maximally Exposed Individual (MEI). The screening tool requires information on the anticipated number of heavy-heavy duty diesel trucks (HHDT) and Truck Refrigeration Units (TRUs) servicing the proposed land uses and the estimated amount of gasoline dispensed by the facility. In order to provide an estimate, the following assumptions were included in the modeling:

- 5 HHDT trips per day, 5 days per week, 52 weeks per year;
- 4 TRU trips per day, 5 days per week, 52 weeks per year;
- 2 Restaurants; and
- Idling time of five minutes (The ARB's Airborne Toxic Control Measure (ATCM) limits diesel truck idling to five minutes).

For comparative purposes, a national large big box retailer has on average two to three TRUs per day and five to six truck trips per day for projects of 200,000 square feet of regional retail uses. The proposed project would include neighborhood and community commercial uses and would be expected to have lower truck trips per day (Trip Generation, Fourth Edition, Institute of Transportation Engineers).

Table 3.3-12 provides an estimate of the cancer risks to the MEI, which are the schools and residential receptors located west, north, and east of the commercial designated areas of the

Master Plan. As shown in the table, the proposed project would not exceed the SJVAPCD threshold of 10 in one million; therefore, the project would not expose sensitive receptors to substantial concentrations of DPM and TACs. Impacts would be *less than significant*.

**Table 3.3-12  
Cancer Risks During Operation**

Project Year	Locations	Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)
2016	Maximum Exposed Residential Receptor	2.1	10

Source:

Notes: See output file in Appendix C. Project impacts were analyzed using 2016 emission factors to provide a worst-case scenario of potential impacts.

**Conclusion:** Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation is necessary.

**Impact #3.3.6 – Exposure of a substantial number of people to sources of objectionable odors. [Evaluation Criteria (e)]**

If the proposed project were to result in a sensitive odor receptor being located in the vicinity of an undesirable odor generator, the impact would be considered significant. The SJVAPCD regulates odor sources through its nuisance rule, Rule 4102, but has no quantitative standards for odors. The SJVAPCD presents a list of project screening trigger levels for potential odor sources in its GAMAQI, which is displayed in Table 3.3-13. If the project were to result in sensitive receptors being located closer to an odor generator in the list in Table 3.3-13 than the recommended distances, a more detailed analysis including a review of SJVAPCD odor complaint records is recommended.

Significant odor problems are defined as:

- More than one confirmed complaint per year averaged over a three year period; or
- Three unconfirmed complaints per year averaged over a three-year period.

**Table 3.3-13  
Screening Levels for Potential Odor Sources**

<b>Odor Generator</b>	<b>Distance (Miles)</b>
Wastewater Treatment Facilities	2
Sanitary Landfill	1
Transfer Station	1
Composting Facility	1
Petroleum Refinery	2
Asphalt Batch Plant	1
Chemical Manufacturing	1
Fiberglass Manufacturing	1
Painting/Coating Operations (e.g., auto body shop)	1
<b>Food Processing Facility</b>	1
<b>Feed Lot/Dairy</b>	1
Rendering Plant	1

Source: San Joaquin Valley Air Pollution Control District, 2002.

#### ***Odors from the Project***

The project would allow for the development of residential and commercial uses within the project area. These land uses are not considered sources of objectionable odors. This impact would be ***less than significant***.

During construction, the various diesel-powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts would be ***less than significant***.

#### ***Odors from Surrounding Land Uses***

The project site is located adjacent to the many different types of businesses which include the Clausen Meat Packing Inc. located at 19455 E Clausen Road, approximately 0.9 miles south of the project site and Foster Farms located at 500 F Street, approximately 0.7 miles south of the project site. As listed in Table 3.3-13, both of these uses are within 1 mile of the project site. Accordingly, additionally analysis was conducted to determine potential odor impacts.

A records request was submitted to the San Joaquin Valley Air Pollution Control to determine if there had been odor complaints filed against the Clausen Meat Packing Inc. and Foster Farms. According to the Air District's records there have been no complaints.

**Conclusion:** The impact will be ***less than significant***.

**Mitigation Measures:** No mitigation measures are required.

## **3.4 Biological Resources**

### **3.4.1 INTRODUCTION**

This section describes the existing biological setting and evaluates potential environmental effects on these resources that may result from project implementation. Descriptions and analysis in this section are based on a biological reconnaissance-level survey performed by Quad Knopf, Inc. included in this Environmental Impact Report (EIR) as Appendix D.

### **3.4.2 ENVIRONMENTAL SETTING**

#### ***Project Site Conditions***

#### **ECOREGION**

The project site is located in the Central California Valley ecoregion (Omernik 1987). This ecoregion is characterized by flat, intensively farmed plains with long, hot dry summers and cool, wet winters. The area averages approximately 14-20 inches of precipitation per year. The Central California Valley ecoregion includes the Sacramento Valley to the north and the San Joaquin Valley to the south, and extends from the Sierra Nevada foothills to the Coastal Range foothills. This area was historically dominated by oak woodlands and grasslands that have undergone extensive agricultural conversion. Nearly half of the region is actively farmed, of which approximately 75 percent is irrigated.

#### **LOCAL HABITAT TYPES**

The project site is located along the valley floor. The valley floor is composed of a limited number of plant communities due to the long history of agricultural disturbance. The project site generally supports three habitat types. These include non-native grassland, agricultural land, and built land. Each of these habitats is described below.

#### ***Non-native Annual Grassland***

Non-native annual grassland occurs in a variety of areas in the San Joaquin Valley. These areas are typically characterized by past disturbances, such as fire, grazing, tilling, etc. Therefore, species that occur in this habitat tend to be opportunistic species that readily adapt to urban and disturbed environments. Plant species commonly found in non-native grasslands include mustards (*Brassicaceae*), filarees (*Erodium* spp.), clovers (*Trifolium* spp.), wild oats (*Avena* spp.), bromes (*Bromus* spp.), foxtail barley (*Hordeum murinum* spp.), ryegrass (*Lolium* spp.), common tarweed (*Hemizonia* spp., *Holocarpha* spp.), and fiddle-neck (*Amsinckia menziesii*) among others. Non-native annual grassland occurs throughout approximately 10 percent of the project site. It primarily occurs in the northeastern corner of the site, but is also found in the western portion of the site adjacent to an almond orchard.

### ***Agriculture***

Agricultural land occurs in large portions of the San Joaquin Valley. These areas are typically characterized by continued ground disturbances such as tilling and harvesting. Because of the regular management of agricultural land, most plants are limited to the margins of the fields, with the exception of the crop. Plants that are found along field margins are typically similar to those found in non-native grasslands. Approximately 80 percent of the site is agriculturally developed. The central, southern, and southeastern portions of the site are currently being utilized for row-crop production. A small section of the western portion of the site is currently an active almond orchard.

Wildlife species associated with agricultural lands are usually habituated to human disturbances. Representative species often include the mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), and many species of rodents. More sensitive species such as raptors or mesocarnivores can also potentially utilize agricultural lands for foraging purposes.

### ***Built***

Built areas consist of structures, roads, and parking areas. The plant diversity in this type of habitat is low and is composed of primarily of non-native grasses and other ruderal plants. Wildlife in the area is generally very limited as food sources are scarce and human activity is frequent. Wildlife that is commonly found in these areas is generally passing through rather than occupying the area. Built areas comprise approximately 10 percent of the site, and generally consist of residences and their associated barns and outbuildings. Though, a cement-lined irrigation lateral that is approximately three feet wide also traverses the south portion of the project site.

### **SPECIAL-STATUS SPECIES**

Special status species are those animal and plant species that, in the judgment of the resource agencies, trustee agencies, and certain non-governmental organizations, warrant special consideration in the California Environmental Quality Act (CEQA) process. This includes the following:

- Officially designated “threatened,” “endangered,” or “candidate” species federally listed by the United States Fish and Wildlife Service (USFWS) and protected under the Federal Endangered Species Act;
- Officially designated “rare,” “threatened,” “endangered,” or “candidate” species state-listed by the California Department of Fish and Wildlife (CDFW) and protected under the California Endangered Species Act. CDFW also maintains a list of “Fully Protected” species as well as “California Species of Special Concern” that are also generally treated as special-status species under CEQA;

- Species considered rare, threatened, or endangered under the conditions of Section 15380 of the CEQA Guidelines, such as plant species identified on lists 1A, 1B, and 2 in the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California, which may include species not found on either state or federal endangered species list; and
- Other species considered sensitive, such as birds protected under the Migratory Bird Treaty Act (MBTA), which includes most native birds. A species may also be designated as special concern at the local level.

The habitat mapping and field survey were reviewed for potential habitat for the special status species identified from literature and database searches. A species is determined to have the potential to occur on the project site if its documented geographical range from the literature and database searches includes the vicinity of the project site and if suitable habitat for the species was identified within or near the project site. The methodology for database searches is discussed more fully below.

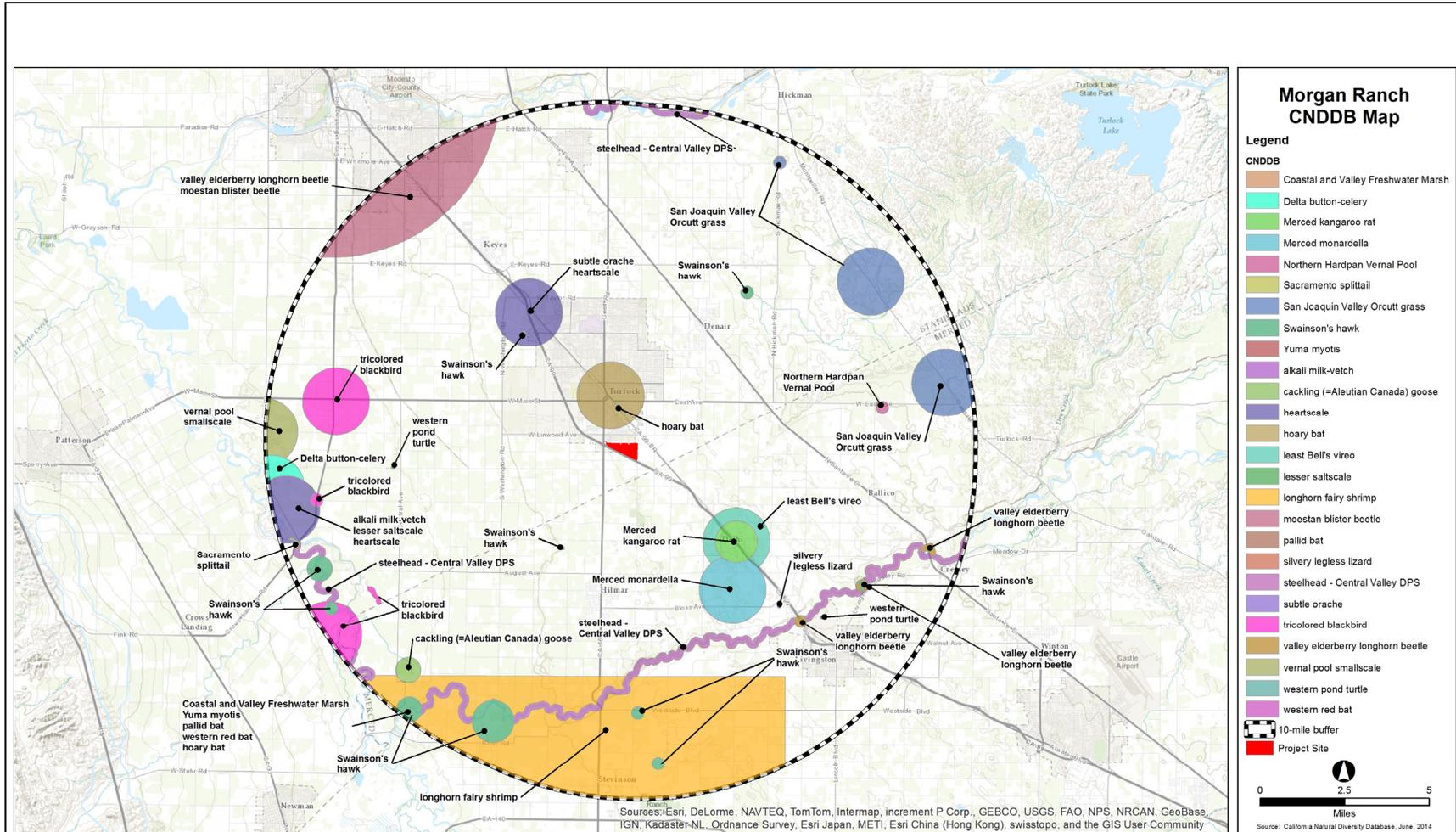
### ***Sensitive Natural Communities***

The sensitive natural communities considered for review are included in a table provided in the Biological Reconnaissance-Level Survey in Appendix D. This list was based upon query results from the California Natural Diversity Database (CNDDDB) and the CNPS online inventory, as well as a list obtained from USFWS. As shown in Figure 3.4-1, six CNDDDB-recorded occurrences of sensitive natural communities have occurred within 10 miles of the project site. However, no sensitive natural communities were observed on the project site or within a 0.25 mile radius.

### ***Special Status Plant Species***

The special status plant species considered for review in this document are included in a table provided in the Biological Reconnaissance-Level Survey in Appendix D. This list was based upon query results from the California Natural Diversity Database (CNDDDB) and the CNPS online inventory, as well as a list obtained from USFWS. As shown in Figure 3.4-1, 20 CNDDDB-recorded occurrences of special status plant species have occurred within 10 miles of the project site. However, no special status plant species were observed on the project site or within a 0.25-mile radius.

Several regionally occurring species were determined not to have potential to occur within the project site. The list of the regionally occurring plant species that were considered is set forth in the Biological Reconnaissance-Level Survey (Appendix D). This determination was based on the fact that either the range of the species does not extend into the project site or vicinity, or the habitat and/or microsite conditions (e.g., serpentine soils) required by the species are not present. Based upon results of the species review, there are no special status plant species with potential to occur within the project site.



CNDDB MAP

Figure 3.4 - 1

**Special Status Wildlife Species**

The special-status wildlife species considered for review in this document are included in a table provided in Appendix B of the Biological Reconnaissance-Level Survey; those with potential to occur on the project site are listed on Table 3.4-1. This list was compiled from the USFWS list and query results from California Natural Diversity Database (CNDDDB).

Several regionally occurring species were determined not to have potential to occur within the project site. The list of the regionally occurring wildlife species that were considered is set forth in the Biological Reconnaissance-Level Survey (Appendix D). This determination is based on the fact that either the distribution of the species does not extend into the project site vicinity, or the habitat and/or microsite conditions (e.g., caves, tall snags) required by the species are not present on the project site.

Based upon results of the species review, there are six special-status wildlife species with potential to occur within the project site. Table 3.4-1 lists these species, their regulatory status, and general habitat requirements. Recorded occurrences of special status wildlife species within 10 miles of the project site are shown in Exhibit 3.4-1.

**Table 3.4-1  
Special Status Wildlife Species**

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts
<b><u>Birds</u></b>				
<i>Agelaius tricolor</i>	tricolored blackbird	CSC	Tricolored blackbirds live near fresh water, and prefer emergent wetland vegetation with tall, dense cattails or tules, but they also are found in thickets of willow, blackberry, wild rose, and tall herbs. They forage in grassland and agricultural fields.	<b>Possible as a transient forager:</b> Marginal foraging and upland habitat is available for this species within the project vicinity. However, this habitat is limited; no nesting habitat is present within the project site. There were five CNDDDB records of this species occurring within ten miles of the project site.
<i>Buteo swainsoni</i>	Swainson's hawk	CT	Swainson's hawks occur in riparian forests and other forested areas. They roost in a variety of trees and forage widely over forests, grasslands, and shrublands. They are easily disturbed	<b>Possible as a transient forager:</b> Marginal foraging and upland habitat is available for this species within the project vicinity. However, this habitat is limited; no nesting habitat is present within the project site. There were ten CNDDDB records of this

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts
			by human activities.	species occurring within ten miles of the project site. No Swainson’s hawks were observed during surveys.
<b><u>Mammals</u></b>				
<i>Antrozous pallidus</i>	pallid bat	CSC	This bat is found in deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	<b>Possible as a transient forager.</b> Marginal foraging habitat was present on the site, but no roosting habitat as water was scarce. There was one CNDDDB record of this species occurring within ten miles of the project site.
<i>Lasiurus blossevillii</i>	western red bat	CSC	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers riparian habitat edges with walnuts, oaks, willows, cottonwoods, and sycamores where they roost, and mosaics with trees protected from above and open below with open areas for foraging.	<b>Possible as a transient forager.</b> Marginal foraging and roosting habitat was present on the site, but no riparian habitat edges. There was one CNDDDB record of this species occurring within ten miles of the project site.
<i>Taxidea taxus</i>	American Badger	CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food and open, uncultivated ground. Preys on burrowing rodents and digs burrows.	<b>Possible as a transient forager.</b> Marginal foraging habitat was present on the site. No dens or sign of this species were observed during the site survey. There were no CNDDDB records of this species occurring within ten miles of the project site.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts
<i>Vulpes macrotis mutica</i>	San Joaquin Kit fox	FE, CT	Found in annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	<b>Possible as a transient forager.</b> Marginal foraging habitat was present on the site. No dens or sign of this species were observed during the site survey. There were no CNDDDB records of this species occurring within ten miles of the project site.

Sources:

California Department of Fish and Wildlife. 2012. California Natural Diversity Data Base  
 California Native Plant Society (CNPS). 2012. Inventory of Rare and Endangered Plants, Rare Plant Scientific Advisory Committee.  
 United States Fish and Wildlife Service (USFWS). 2012. Critical Habitat Portal, Critical Habitat Map, United States Fish and Wildlife Service, Sacramento, CA.  
 United States Fish and Wildlife Service (USFWS). 2012. Federal Endangered and Threatened Species List, Sacramento Fish and Wildlife Office.

USGS 7.5 Minute Quadrangles:

Turlock, Denair, Ceres, Montpelier, Cressey, Hatch, Gustine, Stevinson, and Arena quadrangles.

Abbreviations:

FE Federal Endangered Species  
 FT Federal Threatened Species  
 MBTA Species Protected Under the Auspices of the Migratory Bird treaty Act  
 CE California Endangered Species  
 CT California Threatened Species  
 CSC California Department of Fish and Wildlife Species of Special Concern  
 1B California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere  
 1B.1 California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere; Seriously Threatened in California  
 1B.2 California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere; Fairly Threatened in California  
 2.1 California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California, but More Common Elsewhere; Seriously Threatened in California

\*Potential Occurrence Definitions:

Present: Species or sign of their presence observed on site at time of the field survey.  
 Likely: Species not observed on site, but may reasonably be expected to occur there on a regular basis. Or, species not observed on the site, exceptional habitat exists, and additional surveys needed to verify presence.  
 Possible: Species not observed on site, but could occur there from time to time. Or, species not observed on the site, suitable habitat exists, and additional surveys needed to verify presence.  
 Unlikely: Species not observed on site, and would not be expected to occur there except, perhaps, as a transient. Or, species not observed on the site, marginally suitable habitat exists, and additional surveys needed to verify presence.  
 Absent: Species or sign of their presence not observed on site, and precluded from occurring there because habitat requirements are not met.

### ***Nesting Birds***

The project site contains trees and shrubs that could potentially provide suitable nesting habitat for passerines (perching birds), raptors (birds of prey), and ground-dwelling birds. Nesting birds are protected by the Migratory Bird Treaty Act (MBTA) and under the California Fish and Wildlife Code. (Refer to the Regulatory Framework section, below.)

### ***Wetlands and Jurisdictional Features***

Quad Knopf biologists conducted a survey of the project site and vicinity for potential jurisdictional features in using methodologies approved by U.S. Army Corps of Engineers (USACE). The parameters used to determine whether wetlands existed onsite were based on the guidelines outlined in USACE 1987 Wetland Delineation Manual and the Interim Regional Supplement to the USACE Wetland Delineation Manual: Arid West Region.

The project site contains an unvegetated, cement-lined irrigation lateral approximately 600 meters in length along the southern portion of the property near State Route 99 (SR 99). This irrigation lateral is fed by Lateral No.5, which is located approximately 0.5 mile south of the project site. The lateral terminates on the western portion of the project site (Turlock Irrigation District, pers. comm.). Given the artificial nature of this later, and its lack of connectivity with traditionally navigable waters, this feature is not expected to be under the jurisdiction of the USACE.

No potential wetlands or jurisdictional features were observed during the field survey.

### ***Wildlife Corridors***

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of undisturbed areas. Maintaining the continuity of established wildlife corridors is important to sustain species with specific foraging requirements, preserve a species' distribution potential, and retain diversity among many wildlife populations.

For these reasons, resource agencies consider wildlife corridors to be a sensitive resource. Large mammals such as coyote and deer and smaller mammals such as raccoons and weasels rely on wildlife corridors for migrations necessary for their survival. Amphibians often require the ability to move between wetlands and other aquatic systems such as streams to forage and breed successfully.

These wildlife movements may occur on a seasonal or even daily basis. Corridors provide foraging opportunities and shelter during migration. In wooded areas, these corridors often occur in open meadow or riverside habitats and provide a clear route for migration in addition to supporting ample food and water sources during movement.

The project site occurs at the edge of an urbanized area, and it contains existing structures that appear to have been previously used for agricultural and rural residential uses. There are no identifiable movement corridors within or adjacent to the project site. The biological survey did not find any evidence of wildlife nursery sites on the project site, and there is no aquatic habitat to support fish species.

### **3.4.3 REGULATORY SETTING**

#### ***Federal***

#### **FEDERAL ENDANGERED SPECIES ACT**

The 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.”

Once a species is listed, it is fully protected from take unless a take permit is issued by the USFWS. *Take* is defined as “the killing, capturing, trapping, or harassing of a species.” Proposed endangered or threatened species are those species for which a proposed regulation but not a final rule has been published in the Federal Register.

#### **MIGRATORY BIRD TREATY ACT**

The MBTA is an international treaty among the United States, Canada, Mexico, Japan, and Russia for the conservation and management of bird species that may migrate through more than one country. The MBTA (50 CFR Section 10) is enforced in the United States by the USFWS and covers 972 bird species. According to the provisions of the MBTA, it is unlawful to pursue, hunt, take, capture, or kill or attempt to do the same to any species covered by the MBTA, including their nests, eggs, or young. Any disturbance that causes nest abandonment or loss of reproductive effort is considered a take and is potentially punishable by fines or imprisonment. Birds covered under this act include all waterfowl, shorebirds, gulls, wading birds, raptors, owls, hummingbirds, warblers, flycatchers, and most perching bird species.

#### **CLEAN WATER ACT**

Section 404 of the Federal Clean Water Act (CWA), which is administered by USACE, regulates the discharge of dredge and fill material into “waters of the United States.” Once Section 404 jurisdiction is established, several different types of permitting procedures cover the discharge of dredge and fill material. The first category of permits are “General Permits” (which fall into two sub-categories: nationwide and regional permits), which provide standing authority for certain specified activities, and set forth various compliance requirements necessary to obtain coverage without further USACE involvement. The second category of permits is the “Individual Permit.” Unlike the General Permit process, individual permit applications are subject to public notice and a public interest review, which involve a comprehensive analysis of a number of identified

factors to evaluate the probable impacts on the public interest of the proposed activity. These permit applications also require preparation of an alternatives analysis that evaluates whether there is a “practicable alternative” to the proposed discharge. The USACE has established a series of nationwide permits that authorize certain activities in waters of the United States, if a proposed activity can demonstrate compliance with standard conditions. Normally, the USACE requires an individual permit for an activity that would affect an area equal to or in excess of 0.5 acre of waters of the United States. Projects that result in impacts to less than 0.5 acre can normally be conducted pursuant to one of the nationwide permits, if consistent with the standard permit conditions. The USACE also has discretionary authority to require an Environmental Impact Statement for projects that result in impacts to an area between 0.1 and 0.5 acre. Use of any nationwide permit is contingent on the activities having no impacts to endangered species.

Section 401 of the CWA requires that “any applicant for a federal permit for activities that involve a discharge to waters of the State shall provide the federal permitting agency with a certification from the State, in which the discharge is proposed, that states the discharge will comply with the applicable provisions under the federal Clean Water Act.” Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification from the Regional Water Quality Control Board (RWQCB). This certification requirement applies to both General and Individual Permits.

**State**

**CALIFORNIA ENDANGERED SPECIES ACT**

The CDFW administers the CESA; its basic policy is to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA further declares that state agencies will not approve projects as proposed that would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available. CESA prohibits the “take” of listed threatened or endangered species. Unlike FESA, CESA also protects species that are identified as candidates for listing as threatened or endangered. Under CESA, “take” means to “hurt, pursue, capture or kill,” or attempt any of these acts. This definition of “take” is narrower than the “take” definition of FESA because it does not include harm to or harassment of a species. It also does not prohibit indirect harm to CESA-listed species by way of habitat modification. The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered one that is present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. If a proposed project would result in impacts to a species protected by CESA, an “incidental take” permit would be necessary, which may authorize the take so long as it is incidental to an otherwise lawful activity and would not jeopardize the continued existence of the species, and so long as certain other specified conditions are met.

## **STATE WATER RESOURCES CONTROL BOARD/CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

The SWRCB and RWQCB regulate activities in “waters of the state” (which include wetlands) through Section 401 of the CWA. If an applicant proposes to discharge dredged or fill material into any waters of any state, Section 401 of the CWA requires that, in addition to an application for a permit, the applicant must provide proof of state or intrastate water pollution control agency certification of compliance with its water quality criteria (as described more fully above).

### **PORTER-COLOGNE WATER QUALITY ACT**

The RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, within any region that could affect the water of the state” (California Water Code Section 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. “Waters of the State” are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code 13050 (e)).

### **NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)**

The CWA requires local jurisdictions to address the problem of pollutants in storm water runoff from development. The CWA provides for the control of the discharge of any pollutant into navigable waters from any point sources. To regulate point source pollution, the CWA provides that the EPA may issue national pollution discharge elimination system (NPDES) permits. NPDES permits are issued by the EPA or by the states under EPA-approved permit programs that incorporate CWA’s technological standards. California’s permit program is implemented through SWRCB and the regional water quality control boards. Section 402(p) of the CWA establishes a framework for regulating municipal and industrial storm water discharges under the NPDES program, and requires controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and systems, design and engineering methods. The regional boards implement the CWA’s municipal storm water requirements through the state’s Municipal Storm Water Permitting Program. While federal regulations allow the permitting options for storm water discharge (Individual and General Permits), the SWRCB has elected to adopt only one statewide General Permit. In September 2009, the SWRCB adopted a new NPDES General Permit for the storm water discharges associated with construction and land disturbance activities (No. 2009-0009-DWQ) that, among other things, require compliance with certain numeric effluent limitations. This General Permit will become effective on July 1, 2010. It requires development of a site-specific Storm Water Pollution Prevention Plan (SWPPP) that specifies Best Management Practices (BMPs) that will prevent construction pollutants from contacting storm water with the interest of keeping all products of erosion from moving off site to receiving waters. This General Permit is implemented and enforced by the nine RWQCBs.

### **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

As discussed above, specific federal and state statutes protect threatened and endangered species. In addition, CEQA Guidelines Section 15380 provides that a species not listed on the federal or

state lists of threatened or endangered species may be considered rare or endangered under CEQA review if the species can be shown to meet certain specified criteria.

In addition, sensitive plant species are afforded protection under CEQA through the CNPS inventory of rare, threatened, and endangered plants of California. CNPS is a California resource conservation organization that has developed an inventory of California's sensitive plant species. This inventory summarizes information on the distribution, rarity, and endangerment of California's vascular plants. The inventory is divided into four lists that are based on the rarity of the species. In addition, the CNPS provides an inventory of plant communities that are considered sensitive by state and federal resource agencies, academic institutions, and various conservation groups. Determination of the level of sensitivity is based on the number and size of remaining occurrences as well as recognized threats. See below for additional information regarding the CNPS inventory.

## **CALIFORNIA FISH AND WILDLIFE CODE**

### ***Sections 1600 through 1603***

Activities that substantially divert, obstruct or change the natural flow, or substantially modify the bed, channel, or bank of any river, stream, or lake in California are subject to the regulatory authority of the CDFW pursuant to Sections 1600 through 1603 of the Fish and Wildlife Code, requiring preparation of a Streambed Alteration Agreement. Under the Code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Included are watercourses with surface or subsurface flows that support or have supported riparian vegetation. Additionally, the CDFW has jurisdiction over altered or artificial waterways as well as dry washes that carry water ephemerally during storm events based on the biological value of these drainages to fish and wildlife.

### ***Sections 3503 and 3511***

There are particular sections of the Fish and Wildlife Code that are applicable to natural resource management. For example, Section 3503 of the Code states it is unlawful to take, possess, or destroy birds, their nests, or eggs of any bird. Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "take." All raptors, their active nests, eggs, and young are protected. Additionally, section 3511 of the Code lists fully protected bird species, such as the white-tailed kite and golden eagle that may not be taken or possessed at any time, except in certain limited circumstances.

## **CALIFORNIA NATIVE PLANT PROTECTION ACT**

The California Native Plant Protection Act is intended to preserve, protect, and enhance endangered or rare native plants in California. This Act directs CDFW to establish criteria for determining what native plants are rare or endangered. Under this Act, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare, although not threatened with immediate extinction, if it is in such small

numbers throughout its range that it may become endangered if its present environment worsens. This Act prohibits any person from importing into or taking, possessing or selling within California, except as incident to the possession or sale of the real property on which the plant is growing, any endangered or rare native plant or as otherwise excepted under the Act.

The California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or otherwise are threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to population of rare plants receive consideration under CEQA review. The CNPs ranking system applicable to the project are defined below:

- List 1A: Plants presumed extinct;
- List 1B: Plants rare, threatened or endangered in California and elsewhere;
- List 2: Plants rare, threatened or endangered in California, but more numerous elsewhere;
- List 3: Plants about which more information is needed; and
- List 4: Plants of limited distribution (a watch list).

### **CALIFORNIA OAK PROTECTION ACT**

The California Oak Protection Act, Senate Bill 1334, mandates that any county that has oak woodlands must prepare and implement an oak woodland management plan. Fresno County has not yet met this requirement. Senate Bill 1334 also requires:

- replanting of oaks at a 2:1 ratio of the same species;
- restoration of former oak woodlands (twice as many trees as the project removes);
- contribution of funds to the Oak Woodlands Conservation Fund (Section 1363 of the Fish and Wildlife Code); and
- some combination of the above.

The California State Oak Woodlands Program supports and encourages voluntary, long-term private stewardship and conservation of California oak woodlands by offering landowners financial incentives to protect and promote biologically functional oak woodlands, provides incentives to protect and encourage farming and ranching operations that are operated in a manner that protects and promotes healthy oak woodlands, provides incentives for the protection of oak trees providing superior wildlife values on private land, and encourages planning that is consistent with oak woodlands preservation.

#### **Local**

### **CITY OF TURLOCK GENERAL PLAN**

The City of Turlock General Plan includes the following relevant of policies for the protection of biological resources:

#### **Chapter 3 – New Growth Areas and Infrastructure**

**Policy 3.1-a Proactively manage growth.** Proactively manage and plan for growth in an orderly, sequential, and contiguous fashion.

**Policy 3.1-c Promote good design in new growth areas.** Design new growth and development so that it is compact; preserves natural, environmental, and economic resources; and provides the efficient and timely delivery of infrastructure, public facilities, and services to new residents and businesses.

**Policy 3.3-ade Low Impact Development (LID) and Water Quality Best Management Practices (WQBMPs).** Require implementation of LID techniques and WQBMPs in new development projects and public works projects. Examples of these are use of porous pavement and pervious concrete, water quality swales, and rain gardens.

**Policy 3.3-af Encourage Use of Less Toxic Agricultural Chemicals.** In cooperation with the Stanislaus County Agricultural Center, provide education and incentives to encourage the use of less toxic forms of pesticides, insecticides, herbicides, or other chemical substances by households and farmers.

***Chapter 7 – Conservation***

**Policy 7.2-a Preserve Farmland.** Promote the preservation and economic viability of agricultural land adjacent to the City of Turlock.

**Policy 7.2-b Limit Urban Expansion.** Retain Turlock’s agricultural setting by limiting urban expansion to designated areas and minimizing conflicts between agriculture and urban activities.

**Policy 7.2-c Protect Soil and Water.** Work to protect and restore natural resources essential for agricultural production.

**Policy 7.2-e Require Compact Development.** Require development at densities higher than typical in recent years in order to limit conversion of agricultural land and minimize the urban/agricultural interface.

**Policy 7.2-h Allow Agricultural Uses to Continue.** Where agriculture exists within City limits, allow uses to continue until urban development occurs on these properties, including the establishment of community gardens serving the immediate neighborhood.

**Policy 7.2-i Support Participation in Williamson Act Program.** Support participation in the Williamson Act program by Study Area landowners.

**Policy 7.2-j Support Right to Farm.** Support the implementation of Stanislaus County’s Agricultural Element and Right-to-Farm ordinance.

**Policy 7.2-n Minimize Soil Erosion.** Require new development to implement measures to minimize soil erosion related to construction. Identify erosion-minimizing site preparation and grading techniques in the zoning code.

- Policy 7.4-a Increase Biological Diversity.** Make efforts to enhance the diversity of Turlock’s flora and fauna, including street trees.
- Policy 7.4-b Sensitive Site Planning.** Protect mature trees and natural vegetation and features wherever feasible in new development areas.
- Policy 7.4-c Urban Trees.** Protect and expand Turlock’s urban forest through public education, sensitive maintenance practices, and a long-term financial commitment adequate to protect these resources. Continue to require the planting of appropriately-spaced street trees in new development areas.
- Policy 7.4-d Special Review if New Information Becomes Available.** Establish environmental review procedures, such as site reconnaissance and certification by a biologist, as part of the project development application process if new information to support existence of a Special Status species becomes available.

#### 3.4.4 METHODOLOGY

Quad Knopf biologists prepared a Biological Reconnaissance-Level Survey in April 2012, which is provided in its entirety in Appendix D. Quad Knopf’s biologists conducted a reconnaissance-level field survey with appropriate field guides, a digital camera, and field notes to record the existing conditions of the biological resources on the project site and the surrounding area. The reconnaissance survey consisted of a general habitat assessment; identification of vegetative communities; identification of sensitive natural communities, special status plant and wildlife species; and determination of the potential presence of waters of the U.S., including the potential for wetlands, on the project site. The onsite habitat types were evaluated for their potential to support special status plant and wildlife species and any other sensitive biological resources. Any special status biological resources identified during the literature review were ground-truthed during the reconnaissance-level survey for mapping accuracy.

In addition, a literature and map review of the project site and surrounding area were conducted. The literature review provides a baseline from which to evaluate the biological resources potentially occurring on the project site, as well as in the surrounding area. A compilation of sensitive plant and wildlife species recorded in the vicinity of the project site was derived from the CNDDDB. Additional recorded occurrences of plant species found on or near the project site were obtained in the CNPS’s Electronic Inventory of Rare and Endangered Vascular Plants of California database. The CNDDDB and CNPS searches were based on the Turlock, Denair, Ceres, Montpelier, Cressey, Hatch, Gustine, Stevinson, and Arena quadrangles, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle. Federal register listings, protocols, and species data provided by the USFWS and CDFW were reviewed in conjunction with any potential federally and state-listed species occurring on the project site and in the surrounding area.

### 3.4.5 IMPACT EVALUATION CRITERIA

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, biological resources impacts resulting from the implementation of the proposed project would be considered significant if the project would:

- 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 CDFW or USFWS?
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS? (Refer to Chapter 7, Effects Found Not To Be Significant.)
- c) Have a substantial adverse effect on federally protected “wetlands” as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (Refer to Chapter 7, Effects Found Not To Be Significant.)
- 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 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 (HCP), Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (Refer to Section 7, Effects Found Not To Be Significant.)

### 3.4.6 IMPACT ANALYSIS

This section discusses potential impacts associated with the development of the project and recommends feasible mitigation measures, where appropriate.

**Impact #3.4.1 – Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in a local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.**

This impact analysis addresses potential impacts on special-status plant and wildlife species from project implementation. Each subject is discussed below.

## **SPECIAL-STATUS PLANT SPECIES**

The Biological Reconnaissance-Level Survey evaluated the potential for numerous special status plants to be on the project site and surrounding area. This list of species was based upon query results from the CNDDDB and the CNPS online inventory, as well as a list obtained from USFWS. As shown in Exhibit 3.4-1, 20 CNDDDB-recorded occurrences of special status plant species within 10 miles of the project site. However, no special status plant species were observed on the project site or surrounding area. It was also determined that none of the identified regionally-occurring plant species have the potential to occur within the project site, either because the distribution of the species does not extend to the project site vicinity, or because the microsite conditions (e.g., serpentine soils, mesic site) required by the species are not present. The project site does not contain suitable habitat to support any special status plant species. Therefore, no impacts on special status plant species would occur from implementation of the project.

## **SPECIAL-STATUS WILDLIFE SPECIES**

Twenty-seven special status wildlife species have a possibility of occurring on the project site. The majority of these regionally occurring species were determined not to have potential to occur within the project site. This determination is based on the fact that either the distribution of the species does not extend into the project site vicinity, or the habitat and/or microsite conditions (e.g., caves, tall snags) required by the species are not present on the project. Of the 27 special status wildlife species occurring on the site, only six special status wildlife species were determined to be on the site as possible transient foragers. These species include tricolored blackbird, Swainson's hawk, pallid bat, western red bat, San Joaquin kit fox, and American badger.

No special status species were observed during the reconnaissance surveys. Because of the frequent disturbance regime from agricultural activities, the conditions at the project site are considered marginal habitat for wildlife. However, there is the potential for special status wildlife to enter the project site and be subject to take. As such, project implementation has the potential to impact special status wildlife species; this would be a potentially significant impact. Standard measures for avoidance and minimization of biological impacts are required.

**Conclusion:** Impacts to special status wildlife species are *potentially significant*.

**Mitigation Measure #3.4.1a:** Pre-construction surveys shall be performed on the project site in areas where there is a potential for nesting raptors and nesting migratory birds to occur; these include all areas of the project site that contain or are within 500 feet of power poles or trees that are suitable for the establishment of nests. If mature crops are present during the breeding season of migratory birds (the nesting period is loosely defined as February 15 to August 15), a pre-construction survey shall be performed within 14 days of construction to identify active nests and mark those nests for avoidance. During the nesting period, bird nests shall be avoided by 250 feet and raptor nests should be avoided by 500 feet.

**Mitigation Measure #3.4.1b:** Because there is the potential for San Joaquin kit foxes to occur on site, the USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox

Prior to or During Ground Disturbance shall be followed. The measures that are listed below have been excerpted from those guidelines and will protect San Joaquin kit foxes from direct mortality and from destruction of active dens and natal or pupping dens. The City of Turlock shall determine the applicability of the following measures depending on specific construction activities and shall implement such measures when required. The measures below will also serve to protect American badger.

1. Pre-construction surveys shall be conducted no fewer than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, or any project activity likely to impact the San Joaquin kit fox or American badger. Exclusion zones shall be placed in accordance with USFWS Recommendations using the following:

Potential Den	50 foot radius
Known Den	100 foot radius
Natal/Pupping Den (Occupied and Unoccupied)	Contact U.S. Fish and Wildlife Service for guidance
Atypical Den	50 foot radius

2. If dens must be removed, they must be appropriately monitored and excavated by a trained wildlife biologist. Replacement dens will be required. Destruction of natal dens and other “known” kit fox dens must not occur until authorized by USFWS.
3. Project-related vehicles shall observe a 20 miles per hour speed limit in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Nighttime construction shall be avoided, unless the construction area is appropriately fenced to exclude kit foxes. The area within any such fence must be determined to be uninhabited by San Joaquin Kit foxes prior to initiation of construction. Off-road traffic outside of designated project areas shall be prohibited.
4. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under numbers 9 and 10 of this section must be followed.
5. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

6. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or project site.
7. No firearms shall be allowed on the project site.
8. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets shall be permitted on the project sites.
9. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox, or who finds a dead, injured or entrapped individual. The representative's name and telephone number shall be provided to the USFWS and CDFW.
10. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW should be contacted for advice.
11. Any contractor, employee(s), or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFW immediately in the case of a dead, injured or entrapped kit fox. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.
12. The Sacramento Fish and Wildlife Office and CDFW will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, 2800 Cottage Way, Suite W2605, Sacramento, CA 95825-1846, and (916) 414-6620. The CDFW contact is Mr. Scott Osborn at 1416 9th Street, Sacramento, CA 95814, (916) 324-3564.

**Mitigation Measure #3.4.1c:** Standard measures for the protection of burrowing owls provided in Burrowing Owl Consortium's April 1995 Burrowing Owl Survey Protocol and Mitigation Guidelines and the CDFW's October 17, 1995 Staff Report on Burrowing Owl Mitigation shall be implemented. Active burrows will be avoided by 250 feet, compensation will be provided for the displacement of burrowing owls, and habitat acquisition and the creation of artificial dens for any burrowing owls removed from construction areas will be provided.

1. Pre-construction surveys for burrowing owls shall be conducted. Pre-construction surveys of construction areas and a 500 foot buffer shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed.

2. If burrowing owls are present on the construction site (or within 500 feet of the construction site) during the breeding season (April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 500 foot buffer shall be installed between the nest site or active burrow and any earth-moving activity or other disturbance. This 500 foot buffer could be removed once it is determined by a qualified biologist that the young have fledged. Typically, the young fledge by August 31st. This date may be earlier than August 31st, or later, and would have to be determined by a qualified biologist.
3. If burrowing owls are present in the non-breeding season and must be passively relocated from the project site, passive relocation shall not commence until October 1st and must be completed by February 1st. Passive relocation may only be conducted by a qualified biologist or ornithologist and with approval by CDFW. After passive relocation, the area where owls occurred and its immediate vicinity (500 feet) will be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document that owls are not reoccupying the site.
4. Compensation for the loss of burrowing owl habitat shall be based upon the number of owls or pairs of owls located on the construction area during pre-construction surveys following the CDFW's October 17, 1995 Staff Report on Burrowing Owl Mitigation. The areas identified as land retirement areas and enhancement areas shall be used as compensation for the loss of habitat and for relocation of burrowing owls.

**Effectiveness of Mitigation Measures:** The mitigation measures listed above are standardized survey protocols and avoidance measures that have been adopted by the CDFW. With the implementation of the above mitigation measures, potential impacts to special status species would be *less than significant*.

**Impact #3.4.2 – 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 wildlife nursery sites?**

The project site is within the Pacific Flyway and migratory birds may pass through the project site during their migration. Migratory birds on the Pacific Flyway generally land in areas with abundant water and forage. The project site does not contain preferable habitat for these migratory birds, and any occurrences would be short-lived. Movement corridors generally consist of riparian, woodlands, or forested habitats that span contiguous acres of undisturbed habitat, and are important elements of resident species' home ranges. The project site occurs at the edge of an urbanized area, and it contains existing structures that appear to have been previously used for agricultural and rural residential uses. There are no identifiable movement corridors within or adjacent to the project site. The biological survey did not find any evidence of wildlife nursery sites on the project site, and there is no aquatic habitat to support fish species. Accordingly, due to the lack of suitable habitat for migratory birds on the project site and that the project site does not serve as a wildlife movement corridor, development would not impede wildlife movement. Accordingly, the proposed project would have a less than significant impact.

**Conclusion:** Implementation of the proposed project would have a *less than significant impact* on the movement of migratory fish or wildlife species or with established native resident or migratory wildlife corridors or native wildlife nursery sites.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.4.3 – Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

The proposed project would be developed in accordance with the General Plan policies. The project’s consistency with the relevant General Plan policies is provided in Table 3.4.2.

**Table 3.4-2  
General Plan Consistency Analysis – Biological Resources**

Chapter – Element	Policy No.	Policy Text	Consistency Determination
Chapter 3 – New Growth Areas and Infrastructure	3.1a	Proactively manage growth. Proactively manage and plan for growth in an orderly, sequential, and contiguous fashion.	<b>Consistent.</b> The project is contiguous to existing development and is in an area identified to be developed first as part of the General Plan implementation. The project site is designated as Master Plan development, SE-1.
	3.1-c	Promote good design in new growth areas. Design new growth and development so that it is compact; preserves natural, environmental, and economic resources; and provides the efficient and timely delivery of infrastructure, public facilities, and services to new residents and businesses.	<b>Consistent.</b> The project is the adoption of a Master Plan that will facilitate compact growth within the City’s existing footprint and will ensure that site is developed in a efficient manner that ensures adequate infrastructure and public services are in place to support new residents and businesses.
	3.3-ad	Low Impact Development (LID) and Water Quality Best Management Practices (WQBMPs). Require implementation of LID techniques and WQBMPs in new development projects and public works projects. Examples of these are use of porous pavement and pervious concrete, water quality swales, and rain gardens.	<b>Consistent.</b> During review of development projects within the Master Plan area, the City may require implementation of LID techniques and WQBMPs as conditions of approval.
	3.3-ae	Encourage Use of Less Toxic Agricultural Chemicals. In cooperation with the Stanislaus County Agricultural Center, provide education and incentives to	<b>Consistent.</b> This policy will be implemented on a city-wide basis; therefore, future development projects within the Master Plan area will be encouraged to use less toxic

Chapter – Element	Policy No.	Policy Text	Consistency Determination
		encourage the use of less toxic forms of pesticides, insecticides, herbicides, or other chemical substances by households and farmers.	chemicals.
Chapter 7 - Conservation	7.2-a	Preserve Farmland. Promote the preservation and economic viability of agricultural land adjacent to the City of Turlock.	<b>Consistent.</b> The project site is located within an area designated for urban development by the City’s General Plan. Furthermore, the project will incorporate the use of buffers via Golf Road and SR 99 to reduce conflicts between the existing agricultural land uses to the east and south.
	7.2-b	Limit Urban Expansion. Retain Turlock’s agricultural setting by limiting urban expansion to designated areas and minimizing conflicts between agriculture and urban activities.	<b>Consistent.</b> The project is located within the City limits and is in an area identified by the City of Turlock for urban development. The project incorporates the use of buffers to minimize potential conflicts with agricultural uses to the east and south of the Master Plan area.
	7.2-c	Protect Soil and Water. Work to protect and restore natural resources essential for agricultural production.	<b>Consistent.</b> This policy is being implemented on a city-wide basis, therefore future development projects within the Master Plan area will be required to implement measures, such as Storm Water Pollution Prevention Plans (SWPPPs) as part of regulatory requirements and LID techniques, and WQBMPs as the City requires in future approvals.
	7.2-e	Require Compact Development. Require development at densities higher than typical in recent years in order to limit conversion of agricultural land and minimize the urban/agricultural interface.	<b>Consistent.</b> The project is the adoption of a Master Plan, which incorporates densities higher than typical densities within the City. The project is contiguous to existing development and is in area identified for urban uses. The project incorporates the use of buffers to minimize potential conflicts between urban and agricultural uses.
	7.2-g	Allow Agricultural Uses to Continue. Where agriculture exists within City limits, allow uses to	<b>Consistent.</b> Agricultural uses would be allowed to continue consistent with City policy until

Chapter – Element	Policy No.	Policy Text	Consistency Determination
		continue until urban development occurs on these properties, including the establishment of community gardens serving the immediate neighborhood.	urban development occurs.
	7.2-h	Support Participation in Williamson Act Program. Support participation in the Williamson Act program by Study Area landowners.	<b>Consistent.</b> This measure is being implemented on a city-wide basis. The project site does not contain any Williamson Act lands nor is it located adjacent to any Williamson Act lands.
	7.2-i	Support Right to Farm. Support the implementation of Stanislaus County’s Agricultural Element and Right-to-Farm ordinance.	<b>Consistent.</b> Surrounding land to the south and to the east are designated for future urban development, however as the City requires, Right-to-Farm notices will be recorded on future tentative subdivision and parcel maps, and use permits.
	7.2-m	Minimize Soil Erosion. Require new development to implement measures to minimize soil erosion related to construction. Identify erosion-minimizing site preparation and grading techniques in the zoning code.	<b>Consistent.</b> As development projects proceed in the Master Plan area they will be required to implement SWPPPs to minimize erosion during site grading.
	7.4-a	Increase Biological Diversity. Make efforts to enhance the diversity of Turlock’s flora and fauna, including street trees.	<b>Consistent.</b> Although the project does not specifically enhance the diversity of Turlock’s flora and fauna, the site has been designated by the City’s General Plan for urban development and will incorporate parks and landscaping that will provide habitat for species. Additional, the Master Plan will incorporate mitigation measures for the protection of special status wildlife species.
	7.4-b	Sensitive Site Planning. Protect mature trees and natural vegetation and features wherever feasible in new development areas.	<b>Inconsistent.</b> As development projects are proposed for the Master Plan area, some mature trees and natural vegetation may be removed.
	7.4-c	Urban Trees. Protect and expand Turlock’s urban forest through public education, sensitive maintenance practices, and a long-term financial commitment	<b>Consistent.</b> The Master Plan includes public landscaping standards that will incorporate street trees in accordance with City standards.

Chapter – Element	Policy No.	Policy Text	Consistency Determination
		adequate to protect these resources. Continue to require the planting of appropriately-spaced street trees in new development areas.	
	7.4-d	Special Review if New Information Becomes Available. Establish environmental review procedures, such as site reconnaissance and certification by a biologist, as part of the project development application process if new information to support existence of a Special Status species becomes available.	<b>Consistent.</b> As development projects are proposed for the Master Plan area, the City will have the discretion to require additional project-specific biological reviews if new information becomes available to support the existence of special status species on the project site.

As shown in Table 3.4-2, the project would be consistent with most of the General Plan policies; however, development of future projects within the Master Plan area may require the removal of mature trees and natural vegetation. A mitigation measure has been incorporated into the project to ensure future projects consider mature trees and natural vegetation features in their site planning. The City will have the opportunity to review and evaluate a project’s site planning and require the protection of natural resources as conditions of approval.

**Conclusion:** The project has the potential to conflict with the City’s policy requiring the protection of mature trees and natural vegetation where feasible in development areas; this is a *potentially significant impact*.

**Mitigation Measure #3.4.3:** Development applications shall avoid impact to mature trees and natural vegetation to the maximum extent practicable. Impact avoidance measures shall include one or more of the following: 1) Incorporation of existing trees and natural vegetation into development proposals 2) Avoidance of trenching and compaction of the area within tree drip lines through the use of protective fencing during construction, and 3) Compensation for trees removed or otherwise impacted through the planting of replacement trees at a ratio of one to one.

**Effectiveness of Mitigation:** With implementation of the above mitigation measure, the impact would be *less than significant*.

## **3.5 Cultural Resources**

### **3.5.1 INTRODUCTION**

This section addresses potential impacts to historical, archaeological, and paleontological resources that could result from proposed project development.

### **3.5.2 ENVIRONMENTAL SETTING**

#### ***Overview***

The term “cultural resources” encompasses historic, archaeological, and paleontological resources, and burial sites. Below is a brief summary of each component:

- **Historic Resources:** Historic resources are associated with the recent past. In California, historic resources are typically associated with the Spanish, Mexican, and American periods in the State’s history and are generally less than 200 years old;
- **Archaeological Resources:** Archaeology is the study of prehistoric human activities and cultures. Archaeological resources are generally associated with indigenous cultures;
- **Paleontological Resources:** Paleontology is the study of plant and animal fossils; and
- **Burial Sites:** Burial sites are formal or informal locations where human remains, usually associated with indigenous cultures, are interred.

Paleontological resources include vertebrate, invertebrate and plant fossils. All prehistoric human related artifacts are considered “archeological” resources and all human-related artifacts from the era of the written record are considered “historical” resources. Although there can be some cross-over between archeological and historical resources, “historical” is generally applied to artifacts dating from the start of European colonization of the region.

#### ***Pre-historical Background***

Evidence indicates that the central valley of California has been occupied for at least the past 5,000 years. The people from this pre-historic period are called the Yokut Indians and are believed to have been adapted to river and wetland environments, as much of the documented archeological sites have been found on floodplains and marshlands along major rivers. These people had a tendency to occupy an area for an extended period of time, compared to other Indian groups that tended to be migratory.

Pre-historic sites that are more commonly found in the region have included cemeteries and midden deposits. Cemetery sites generally contain a variety of mortuary artifacts such as animal remains, fishing and hunting materials, food processing tools, and stones and crystals. Midden deposits generally contain the remains of several generations of occupation, such as milling and grinding stones, projectile points, body ornaments and beads, baskets, and mortuary artifacts.

### **Historical Background**

The majority of Euro-American settlement in Stanislaus County occurred after gold was first discovered along the American River in the mid 1800s. Shortly thereafter, roads and trails were constructed southward into Stanislaus County and mines and agriculture followed. The first communities were generally located near ferry river crossings. River crossings are located along the San Joaquin River, the Tuolumne River, and the Stanislaus River in Stanislaus County. The City of Turlock is not located along a major river and there is no historic river crossing in the general vicinity of the project site.

### **Known Cultural Resources**

Cultural resources in Stanislaus County could emanate from a variety of sources, including pre-historic settlements, settlement by Native Americans, Euro-American activities in the first half of the 19th century, Gold Rush settlement and activities and settlement into the twentieth century. Cultural resources include archeological and historic resources. Archeological resources include archaeological remains that may be related to the County's past, including house pits, ceremonial locations, sweatshouses and storage structures, midden sites, cemeteries, isolated burials, quarry sites, petroglyphs and pictographs, and kill and butcher sites. Historical resources sometimes include old homes, adobes, cabins, agricultural structures, mines, logging camps, and other structures that are 50 years or older.

### **3.5.3 REGULATORY SETTING**

Federal, state, and local governments have developed laws and regulations designed to protect significant cultural resources that could be affected by actions that they undertake or regulate. The National Environmental Policy Act (NEPA), the National History Preservation Act of 1966 (NHPA), the American Antiquities Act of 1906, and the California Environmental Quality Act (CEQA) are the principal federal and state laws governing preservation of historic and archaeological resources of national, regional, state, and local significance.

Paleontological resources on federal lands are protected under various laws relating to the protection of public properties; these laws are enforced through the issuance of permits by the appropriate agencies. However, paleontological resources existing on private property within California are generally unprotected under State law.

#### **Federal**

### **NATIONAL HISTORIC PRESERVATION ACT**

The National Historic Preservation Act (NHPA) is the most prominent federal law dealing with historic preservation. The NHPA established guidelines to “preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice.” The NHPA includes regulations specifically for federal land-holding agencies, but also includes regulations (Section 106) which pertain to all projects that are funded, permitted, or approved by any federal agency and which have the potential to affect cultural resources. All projects that are subject to the National

Environmental Policy Act (NEPA) are also subject to compliance with Section 106 of the NHPA. At the federal level, the Office of Historic Preservation (OHP) carries out reviews under Section 106 of the NHPA.

### **NATIONAL REGISTER OF HISTORIC PLACES**

The NHPA authorizes the Secretary of the Interior to establish a National Register of Historic Places (National Register), an inventory of districts, sites, buildings, structures, and objects significant on a national, State, or local level in American history, architecture, archeology, engineering, and culture. The National Register is maintained by the National Park Service, the Advisory Council on Historic Preservation, State Historic Preservation Office, and grants-in-aid programs.

Under 36 Code of Federal Regulations 60, a property is recommended for possible inclusion on the National Register if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events;
- It is associated with significant people in the past;
- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction; and
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties are usually excluded from consideration for listing in the National Register, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years. Resources achieving significance with less than 50 years may be considered for listing if they are of “exceptional importance,” or if they are integral parts of districts that are eligible for listing in the National Register.

### **AMERICAN INDIAN RELIGIOUS FREEDOM ACT AND NATIVE AMERICAN GRAVES AND REPATRIATION ACT**

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

## **OTHER FEDERAL LEGISLATION**

Historic preservation legislation was initiated by the Antiquities Act of 1966, which aimed to protect important historic and archaeological sites. It established a system of permits for conducting archaeological studies on federal land, as well as setting penalties for noncompliance. This permit process controls the disturbance of archaeological sites on federal land. New permits are currently issued under the Archeological Resources Protection Act (ARPA) of 1979. The purpose of ARPA is to enhance preservation and protection of archaeological resources on public and Native American lands. The Historic Sites Act of 1935 declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance."

### **State**

State historic preservation regulations affecting this project include the statutes and guidelines contained in CEQA (Public Resources Code Sections 21083.2 and 21084.1, and Sections 15064.5 and 15126.4(b) of the CEQA Guidelines). CEQA requires lead agencies to carefully consider the potential effects of a project on historical resources. Historical resource includes, but is not limited to, any object, building, structure, site, area, place, record or manuscript that is historically or archaeologically significant (Public Resources Code Section 5020.1).

Advice on procedures to identify such resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research (OPR), *CEQA and Archaeological Resources* (1994). The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities including, but not limited to, museums, historical commissions, associations and societies be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of the antiquity and provides for the sensitive treatment and disposition of those remains (California Health and Safety Code Section 7050.5, California Public Resources Code Section 5097 et seq.).

## **OFFICE OF HISTORIC PRESERVATION**

California Public Resources Code 5024 requires consultation with the State Historic Preservation Office (SHPO) when a project may impact historical resources located on State-owned land.

## **CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM**

The California Historical Resources Information System (CHRIS) is a statewide system for managing information on the full range of historical resources identified in California. CHRIS is a cooperative partnership between the citizens of California, historic preservation professionals, twelve Information Centers, and various agencies. This system bears the following responsibilities: integrate newly recorded sites and information on known resources into the California Historical Resources Inventory; furnish information on known resources and surveys to governments, institutions, and individuals who have a justifiable need to know; and supply a

list of consultants who are qualified to do work within their area. The Central California Information Center, located at CSU, Stanislaus, is the regional resource for Turlock.

**CALIFORNIA REGISTER OF HISTORICAL RESOURCES (PUBLIC RESOURCES CODE SECTION 5020 *ET SEQ*).**

The State Historic Preservation Office (SHPO) maintains the California Register of Historical Resources (CRHR). Properties listed, or formally designated as eligible for listing, on the National Register of Historic Places are automatically listed on the CRHR, as are State Landmarks and Points of Interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

For the purposes of CEQA, a historical resource is a resource listed in, or determined eligible for listing, on the CRHR. When a project will impact a site, it needs to be determined whether the site is a historical resource. The criteria are set forth in Section 15064.5(a)(3) of the CEQA Guidelines, and are defined as any resource that:

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

In addition, CEQA Guidelines Section 15064.5(a)(4) states:

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.

**CEQA GUIDELINES**

***Historic Resources***

CEQA guidelines define three ways that a property can qualify as a significant historical resource, if:

1. The resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR);

2. The resource is included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code, or is identified as significant in a historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code unless a preponderance of evidence demonstrates that it is not historically or culturally significant; or,
3. If the lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record (California Code of Regulations, Title 14, Division 6, Chapter 3, section 15064.5).

In addition to determining the significance and eligibility of any identified historical resource under CEQA and the California Register, historic properties must be evaluated under the criteria for the National Register should federal funding or permitting become involved in any undertaking subject to this document.

### ***Archeological Resources***

CEQA Guidelines Section 15126.4 states that “public agencies should, whenever feasible, seek to avoid damaging effects on any historical resources of an archeological nature.” The Guidelines further state that preservation-in-place is the preferred approach to mitigate impacts on archaeological resources. However, if data recovery through excavation is “the only feasible mitigation,” then a “data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resources, shall be prepared and adopted prior to any excavation being undertaken.” Data recovery is not required for a resource of an archaeological nature if “the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource.” The section further states that its provisions apply to those archaeological resources that also qualify as historic resources.

### **NATIVE AMERICAN HERITAGE ACT**

The Native American Heritage Act (NAHA) of 1976 established the Native American Heritage Commission (NAHC) and protects Native American religious values on state property (see California Public Resources Code 5097.9). PRC 5097.98 defines the steps that need to be taken if human remains are identified on a site, including the notification of descendants and the disposition of remains and grave goods.

### **PUBLIC NOTICE TO CALIFORNIA NATIVE AMERICAN INDIAN TRIBES**

Government Code, Section 65092 includes California Native American tribes that are on the contact list maintained by the Native American Heritage Commission in the definition of “person” to whom notice of public hearings shall be sent by local governments.

### **TRIBAL CONSULTATION GUIDELINES**

Passed in 2004, Senate Bill (SB) 18, now Government Code Section 65351 and 65352, establishes a procedure to help tribes and jurisdictions define tribal cultural resources and sacred

areas more clearly and incorporate protection of these places earlier into the General Plan and Specific Plan processes. The SB 18 process mirrors the federal 106 Review process used by archaeologists as part of the environmental review conducted under NEPA. While tribal consultation is not a component of CEQA review per se, the Lead agency is required to request consultation with responsible and trustee agencies, such as NAHC and neighboring tribes, during the initial study and EIR process.

### **DISPOSITION OF HUMAN REMAINS**

Health and Safety Code Section 7050.5 states that when an initial study identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials.

### **NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT**

Health and Safety Code Section 8010-8011 establishes a state repatriation policy intent that is consistent with and facilitates implementation of the federal Native American Graves Protection and Repatriation Act. The Act strives to ensure that all California Indian human remains and cultural items are treated with dignity and respect. It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. It also states the intent for the state to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

#### ***Local***

### **CITY OF TURLOCK GENERAL PLAN**

The City of Turlock General Plan includes the following relevant policies related to cultural resources that are applicable to the proposed project:

#### ***Chapter 7 – Conservation***

**Policy 7.5-a Protect Archeological Resources.** Protect significant archeological resources in the Study Area that may be identified during construction.

**Policy 7.5-b Preserve Historic Places.** Integrate historic preservation into planning for Downtown and other areas with historic significance

**Policy 7.5-c Evaluate Resource Discoveries.** Should archeological or human remains be discovered during construction, work shall be immediately halted within 50 meters of the find until it can be evaluated by a qualified archeologist. If it is determined to be historically or culturally significant, appropriate mitigation

measures to protect and preserve the resource shall be formulated and implemented.

#### **3.5.4 METHODOLOGY**

Quad Knopf evaluated the project's potential impacts on cultural resources through site reconnaissance, review of the City's applicable plans and policies, a review of the Master Plan materials, record searches of the Southern San Joaquin Valley Information Center and the Native American Heritage Commission (NAHC) Sacred Lands Files, and consultation with Native American contacts provided by the NAHC. (Results of the Records Search, Native American representatives list and example letters are provided in Appendix E).

Quad Knopf staff conducted a windshield survey of the project site and surrounding area on May 9, 2012 to document site conditions through photographs and notation.

On March 28, 2012, at Quad Knopf's request, staff at the Central California Information Center (CCIC) in Turlock conducted a records search (Record Search No. 8192N) to identify previously recorded historic resources within the project site and within a 0.25-mile radius beyond the project site boundaries, which is an appropriate and standard radius used in these analyses given the localized nature of cultural resources. The search included current inventories of the National Register of Historic Places, the California Register of Historic Resources, the California Inventory of Historic Resources, the California Historical Landmarks list, the California Points of Historical Interest list, the Directory of Properties in the Historic Property Data File, and the Archeological Determinations of Eligibility (Office of Historic Preservation current electronic files dated 08-15 and 08-09-2011), the Caltrans State and Local Bridge Survey, the Survey of Surveys, GLO Plats, and other pertinent historic data available at the CCIC for each specific county. Often, locally significant resources are found on the California Historical Landmarks or the California Points of Historical Interest.

The results of the records search indicated that no previous studies were conducted on the project site or within 0.25-mile radius beyond the project site. The records search also indicated no prehistoric or historic sites have been formally recorded within the project site or a 0.25-mile radius beyond the project site. Additionally, the project site is not listed on any of the aforementioned registers or databases.

The records search did indicate that the 1961 edition of the Turlock United States Geological Survey (USGS) 7.5' Quadrangle map shows numerous buildings and/or structures (including an aqueduct) that are at least 51 years in age within the proposed project area. Although there are existing structures within the project site that appear to be older than 45 years old, which is the minimum age requirement for listing on the California Register of Historic Resources, they do not appear to meet any of the four eligibility requirements (associated with a historically significant person; a historically significant place; constructed in a distinctive style; or could add significantly to the historic knowledge base) for listing on the California Register. Therefore, none of the buildings, including the residences, appears eligible for listing on the California Register or local registers.

Quad Knopf sent a letter to the NAHC on March 28, 2012 in response to a comment letter (dated February 21, 2012) on the Notice of Preparation for the Morgan Ranch Master Plan EIR from the NAHC. The March 28, 2012 letter to the NAHC requested a search of the Sacred Lands File within the project site and within 0.25-mile radius beyond the project site. To ensure that all Native American resources are adequately addressed, Quad Knopf sent letters on March 28, 2012 to each of the five Native American representatives provided by the NAHC in their February 21, 2012 letter. The letter to the Native American representatives requested information regarding the presence of any known cultural resources on the project site or within 0.25-mile radius beyond the project site.

The response from the NAHC, received on April 3, 2012, noted that the Sacred Lands File search did not indicate the presence of Native American cultural resources within a 0.25 mile radius of the project site. Included with the response was a list of 12 Native American representatives who may have knowledge of cultural resources within the project site or within 0.25-mile radius beyond the project site. The list of Native American representatives provided included seven additional contacts not included in the NAHC letter from February 21, 2012.

To ensure that all Native American resources are adequately addressed, letters to each of the seven additional representatives were sent on April 20, 2012, which requested information regarding the presence of any known cultural resources on the project site or within 0.25-mile radius beyond the project site.

As of the date of this writing, only one response from the California Valley Miwok tribe was received (see Appendix E).

### **3.5.5 IMPACT EVALUATION CRITERIA**

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, cultural resources impacts resulting from the implementation of the proposed project would be considered significant if the project would:

- a.) Cause a substantial adverse change in the significance of a historic resource as defined in §15064.5?
- b.) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?
- c.) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- d.) Disturb any human remains, including those interred outside of formal cemeteries?

### 3.5.6 IMPACT ANALYSIS

#### **Impact #3.5.1 – Cause a substantial adverse change in the significance of a historic resource as defined in §15064.5?**

The records search conducted at the Central California Information Center indicated that no recorded historic resources are documented on the project site or within 0.25-mile radius beyond the project site. The search included current inventories of the National Register of Historic Places, the California Register of Historic Resources, the California Inventory of Historic Resources, the California Historical Landmarks list, the California Points of Historical Interest list, the Directory of Properties in the Historic Property Data File, and the Archeological Determinations of Eligibility (Office of Historic Preservation current electronic files dated 08-15 and 08-09-2011), the Caltrans State and Local Bridge Survey, the Survey of Surveys, GLO Plats, and other pertinent historic data available at the CCIC for each specific county.

Although there are existing structures within the project site that are greater than 45 years in age, they do not appear to meet the eligibility requirements for listing on the California Register of Historic Resources.

Although considered unlikely since there is no indication of any historic resources on the project site, subsurface construction activities such as trenching and grading associated with the proposed project could potentially damage or destroy previously undiscovered historic resources. This is considered a potentially significant impact. Mitigation is proposed requiring implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface historic resources. With the implementation of this mitigation measure, potential impacts would be reduced to a level of less than significant.

**Conclusion:** Although there is no record evidence of archaeological sites on the 170-acre project site there is the potential during project-related excavation and construction for the discovery of cultural resources. This impact is *potentially significant*, but can be mitigated to a less than significant level as follows:

**Mitigation Measure #3.5.1:** If a potentially significant historical or archaeological resource is encountered during subsurface construction activities (i.e., trenching, grading), all construction activities within a 100-foot radius of the identified potential resource shall cease until a qualified archaeologist evaluates the item for its significance and records the item on the appropriate State Department of Parks and Recreation (DPR) forms. The archaeologist shall determine whether the item requires further study. If, after the qualified archaeologist conducts appropriate technical analyses, the item is determined to be significant under California Environmental Quality Act, the archaeologist shall recommend feasible mitigation measures, which may include avoidance, preservation in place or other appropriate measure, as outlined in Public Resources Code section 21083.2. Upon the City’s approval of the recommended mitigation measures, the project developer shall implement said measures. The developer shall fund the costs of the qualified archaeologist and required analysis, and shall include this mitigation measure in every construction contract to inform contractors of this requirement.

**Effectiveness of Mitigation:** Potential impact to cultural resources would be *less than significant* with implementation of the above mitigation measure.

**Impact #3.5.2 – Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?**

Impacts on paleontological resources can result either directly or indirectly from pre-construction activities and construction of a proposed project. Direct impacts are those which result from the immediate disturbance of resources by vegetation removal, vehicle travel over the surface, earthmoving activities, excavation, or alteration of the setting of a resource. Indirect impacts are those which result from increased erosion due to project site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource materials which could occur due to improved accessibility. Damage or destruction to paleontological resources that are encountered on the project site during future construction is a *potentially significant* impact.

**Conclusion:** Although there is no record evidence of archaeological sites on the 170-acre project site there is the potential during project-related excavation and construction for the discovery of cultural resources. This impact is *potentially significant*, but can be mitigated to a less than significant level as follows:

**Mitigation Measures:** Implementation of Mitigation Measure #3.5.1 will reduce this impact to a *less than significant* level. No additional mitigation measures are required.

**Effectiveness of Mitigation:** Potential impact to paleontological resources would be *less than significant* with implementation of the above mitigation measure.

**Impact #3.5.3 – Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

There are no unique geological features or known fossil-bearing sediments in the vicinity of the project site. However, there remains the possibility for previously unknown, buried paleontological resources or unique geological sites to be uncovered during subsurface construction activities. Such resources may include but are not limited to fossils from mammoths, saber-toothed cats, camels, rodents, reptiles, and birds. Therefore, this would be a potentially significant impact. Mitigation is proposed requiring standard inadvertent discovery procedures to be implemented to reduce this impact to a level of less than significant.

**Conclusion:** Although there is no record evidence of paleontological resources on the 170-acre project site there is the potential during project-related excavation and construction for the discovery of such. This impact is *potentially significant*, but can be mitigated to a less than significant level as follows:

**Mitigation Measure #3.5.3:** In the event a fossil or fossil formations are discovered during any subsurface construction activities for the proposed project (i.e., trenching, grading), all excavations within 100 feet of the find shall be temporarily halted until the find is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The

paleontologist shall notify the appropriate representative at the City of Turlock, who shall coordinate with the paleontologist as to any necessary investigation of the find. If the find is determined to be significant under CEQA, the City shall require, based on the recommended mitigation measures of the paleontologist, the developer to implement those measures, which may include avoidance, preservation in place, or other appropriate measures, as outlined in Public Resources Code section 21083.2. The developer shall fund the costs of the qualified paleontologist and any required analysis. No additional mitigation measures are required.

**Effectiveness of Mitigation:** Potential impact to paleontological resources would be *less than significant* with implementation of the above mitigation measure.

**Impact #3.5.4 – Disturb any human remains, including those interred outside of formal cemeteries?**

Although unlikely since the records research did not indicate the presence of such resources, subsurface construction activities associated with the proposed project could potentially disturb previously undiscovered human burial sites. Accordingly, this is a potentially significant impact.

The California Health and Safety Code Section 7050.5 states that if human remains are discovered on-site, no further disturbance shall occur until the County Coroner has made a determination of origin and disposition. If the Coroner determines that the remains are not subject to his or her authority and if the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the NAHC. The NAHC shall identify the person or persons it believes to be the “most likely descendant” (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resource Code Section 5097.98.

**Conclusion:** Compliance with regulations would reduce this potentially significant impact to *less than significant*.

**Mitigation Measures:** None are required.

## **3.6 Geology and Soils**

### **3.6.1 INTRODUCTION**

This section describes the regulatory framework and existing conditions related to geologic and soils hazards in and around the project site, and potential geotechnical and soils impacts that could result from proposed project development. Information was provided by the City of Turlock General Plan, the United States Department of Agriculture (USDA) – Natural Resources Conservation Service (NRCS) web soil survey, the California Geologic Survey (CGS), and the United States Geological Survey (USGS).

### **3.6.2 ENVIRONMENTAL SETTING**

#### ***Regional Geology***

The City of Turlock is located in the northern part of the San Joaquin Valley. The San Joaquin Valley is the southern section of the Great Central Valley of California; the Sacramento Valley is the northern section. The Great Central Valley is a sedimentary basin, with the Coast Range to the west and the Sierra Nevada to the east. Almost all of the sediments that fill the Great Central Valley eroded from the Sierra Nevada. The oldest of these sediments are full of fragments of volcanic rocks eroded from ancient volcanoes. As erosion stripped the cover of volcanic rocks from the granites of the Sierra Nevada, their detritus of pale quartz and feldspar sand began to wash into the Great Central Valley.

Drainage into the San Joaquin Valley is mainly from the Sierra Nevada. The sediments on the valley floor were deposited within the past one to two-million years, some within the past few thousand years.

#### ***Seismicity***

The term seismicity refers to the location, frequency, magnitude and other characteristics of earthquakes. To understand the implications of seismic events, a discussion of faulting and seismic hazards is provided below.

### **FAULTING**

Faults form in rocks when stresses overcome the internal strength of the rock, resulting in a fracture. Large faults develop in response to large regional stresses operating over a long time, such as those stresses caused by the relative displacement between tectonic plates. According to the elastic rebound theory, these stresses build up in the earth's crust until enough stress has built up to exceed the strength along a fault and cause a brittle failure. The rapid slip between the two stuck plates or coherent blocks generates an earthquake. Following an earthquake, stress will build once again until the occurrence of another earthquake. The magnitude of slip is related to the maximum allowable stress that can be built up along a particular fault segment. The greatest buildup in stress due to the largest relative motion between tectonic plates or fault blocks over the longest period will generally produce the largest earthquakes. The distribution of these

earthquakes is a study of much interest for both hazard prediction and the study of active deformation of the earth’s crust. Deformation is a complex process and strain caused by tectonic forces is not only accommodated through faulting, but also by folding, uplift, and subsidence, which can be gradual or in direct response to earthquakes.

Faults are mapped to determine earthquake hazards, since they occur where earthquakes tend to recur. A historic plane of weakness is more likely to fail under stress than a previously unbroken block of crust. Faults are, therefore, a prime indicator of past seismic activity, and faults with recent activity are presumed to be the best candidates for future earthquakes. However, since slip is not always accommodated by faults that intersect the surface along traces, and since the orientation of stress and strain in the crust can shift, predicting the location of future earthquakes is complicated. Earthquakes sometimes occur in areas with previously undetected faults or along faults previously thought inactive.

According to the Turlock General Plan, there are no known active faults in the Turlock Study Area (includes the project site) or in the valley portion of Stanislaus County. The nearest faults are the Bear Mountain and Melones faults in the eastern part of Stanislaus County, which have been inactive for the last 150 million years and the Tesla Ortigalita fault in the Diablo Range. Two potentially active faults have been identified in the San Joaquin Valley: the San Joaquin Fault and the Vernalis Fault. Other nearby faults include the Calaveras, Hayward and Concord-Green Valley faults. The active and potentially active faults nearest to Turlock are summarized in Table 3.6-1.

**Table 3.6-1  
Fault Summary**

<b>Fault</b>	<b>Distance from Turlock (miles/direction)</b>	<b>Fault Classification</b>
Bear Mountain	30 miles northeast	Active
Calaveras	45 miles southwest	Active
Concord-Green Valley	70 miles northwest	Active
Hayward	60 miles west	Active
Melones	35 miles northeast	Active
San Joaquin	18 miles west	Potentially Active
Tesla Ortigalita	30 miles southeast	Active
Vernalis	20 miles northwest	Potentially Active

Source: City of Turlock General Plan and City of Turlock General Plan DEIR, 2012

**SEISMIC HAZARDS**

Seismic hazards pose a substantial danger to property and human safety and are present because of the risk of naturally occurring geologic events and processes affecting human development. Therefore, the hazard risk is equally influenced by the condition and location of human development as by the frequency and distribution of major geologic events. Seismic hazards present in California include ground rupture along faults, strong seismic shaking, liquefaction, ground failure, and slope failure.

### ***Fault Rupture***

Fault rupture is a seismic hazard that affects structures sited above an active fault. The hazard from fault rupture is the movement of the ground surface along a fault during an earthquake. Typically, this movement takes place during the short time of an earthquake, but it also can occur slowly over many years in a process known as creep. Most structures and underground utilities cannot accommodate the surface displacements of several inches to several feet commonly associated with fault rupture or creep.

### ***Ground Shaking***

The severity of ground shaking depends on several variables such as earthquake magnitude, epicenter distance, local geology, thickness, and seismic wave-propagation properties of unconsolidated materials, groundwater conditions, and topographic setting. Ground shaking hazards are most pronounced in areas near faults or with unconsolidated alluvium.

The most common type of damage from ground shaking is structural damage to buildings, which can range from cosmetic cracks to total collapse. The overall level of structural damage from a nearby large earthquake would likely be moderate to heavy, depending on the characteristics of the earthquake, the type of ground, and the condition of the building. Besides damage to buildings, strong ground shaking can cause severe damage from falling objects or broken utility lines. Fire and explosions are also hazards associated with strong ground shaking.

While Richter magnitude provides a useful measure of comparison between earthquakes, the moment magnitude is more widely used for scientific comparison, since it accounts for the actual energy released by the earthquake. Actual damage is due to the propagation of seismic or ground waves as a result of the earthquake, and the intensity of shaking is related to earthquake magnitude and distance as well as to the condition of underlying materials. Loose and soft materials tend to amplify long period vibrations, while hard rock can quickly attenuate them, causing little damage to overlying structures. For this reason, the Modified Mercalli Intensity (MMI) Scale provides a useful qualitative assessment of ground shaking. The MMI Scale is a 12-point scale of earthquake intensity that is based on local effects experienced by people, structures, and earth materials. Each succeeding step on the scale describes a progressively greater amount of damage at a given point of observation. The MMI Scale is shown in Table 3.6-2, along with average peak acceleration.

### ***Ground Failure***

Ground failure includes liquefaction and the liquefaction-induced phenomena of lateral spreading and lurching.

**Table 3.6-2  
Modified Mercalli Intensity Scale**

<b>Richter Magnitude</b>	<b>Modified Mercalli Intensity</b>	<b>Effects</b>	<b>Average Peak Acceleration</b>
0.1–0.9	I	Not felt. Marginal and long-period effects of large earthquakes	0.0017 g
1.0–2.9	II	Felt by only a few persons at rest, especially on upper floors of building. Delicately suspended objects may swing.	< 0.014 g
3.0–3.9	III	Felt quite noticeably in doors, especially on upper floors of building, but many people do not recognize it as an earthquake. Standing cars may rock slightly. Vibration like passing a truck. Duration estimated.	< 0.014g
4.0–4.5	IV	During the day, felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensations like heavy truck striking building. Standing cars rocked noticeably.	0.014 – 0.039 g
4.6–4.9	V	Felt by nearly everyone, many awakened. Some dishes, windows, broken; cracked plaster in a few places; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.	0.039 – 0.092 g
5.0–5.5	VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of falling plaster and damaged chimneys. Damage slight.	0.092 – 0.18 g
5.6–6.4	VII	Everyone runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well built, ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving cars.	0.18 – 0.34 g
6.5–6.9	VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monument walls, and heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving in cars disturbed.	0.34 – 0.65 g
7.0–7.4	IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	0.65 – 1.24 g
7.5–7.9	X	Some well-built structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Railway lines bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed, slopped over banks.	> 1.24 g

Richter Magnitude	Modified Mercalli Intensity	Effects	Average Peak Acceleration
8.0–8.4	XI	Few, if any masonry structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 1.24 g
≥ 8.5	XII	Total damage. Waves seen on ground. Lines of sight and level distorted. Objects thrown into the air.	> 1.24 g

Notes: g (gravity) = 980 centimeters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

Source: USGS, CGS

Liquefaction is a process by which sediments below the water table temporarily lose strength during an earthquake and behave as a viscous liquid rather than a solid. Liquefaction is restricted to certain geologic and hydrologic environments, primarily recently deposited sand and silt in areas with high groundwater levels. The process of liquefaction involves seismic waves passing through saturated granular layers, distorting the granular structure and causing the particles to collapse. This causes the granular layer to behave temporarily as a viscous liquid rather than a solid, resulting in liquefaction.

Liquefaction can cause the soil beneath a structure to lose strength, which may result in the loss of foundation-bearing capacity, which could cause a structure to settle or tip. Liquefaction can also result in the settlement of large areas due to the densification of the liquefied deposit. Where structures are located within liquefied deposits, the liquefaction can result in the structure to rise as a result of buoyancy.

No specific liquefaction hazard areas have been identified in Turlock. The potential for liquefaction is recognized throughout the San Joaquin Valley where unconsolidated sediments and high water tables coincide.

Lateral spreading is lateral ground movement, with some vertical component, as a result of liquefaction. In effect, the soil rides on top of the liquefied layer. Lateral spreading can occur on relatively flat sites with slopes less than 2 percent, under certain circumstances, and can cause ground cracking and settlement.

Lurching is the movement of the ground surface toward an open face when the soil liquefies. An open face could be a graded slope, stream bank, canal face, gully, or other similar feature.

***Landslides and Slope Failure***

Landslides and other slope failures form in response to the long-term geologic cycle of uplift, mass wasting, and slope disturbance. Mass wasting refers to a variety of erosional processes from gradual downhill soil creep to mudslides, debris flows, landslides, and rock fall. These processes are commonly triggered by intense precipitation. Seismic activity can also trigger landslides and rockfalls.

Often, various forms of mass wasting are grouped together as landslides, which are generally used to describe the downhill movement of rock and soil. Geologists classify landslides into several different types that reflect differences in the type of material and type of movement. The four most common types of landslides are translational, rotational, earth flow, and rock fall. Debris flows and earth flows are another type of landslide that are characterized by soil and rock particles in suspension with water and which often move with considerable speed. Debris flows often refer to flows that contain coarser soil and rock materials while earth flows frequently refer to slides that are predominantly finer materials. Mudslide is a term that appears in non-technical literature to describe a variety of shallow, rapidly moving earth flows.

The Turlock area is relatively flat; therefore, the risk of slope failure and earthquake-induced landslides is considered low.

**Project Site Conditions**

**SOILS**

The United States Department of Agriculture Natural Resources Conservation Service indicates that Hilmar loamy sand (HfA) and Dinuba sandy loam (DrA) underlie the project site. Hilmar loamy sand makes up the majority of the soils on the site with 161 acres and Dinuba sandy loam makes up nine acres. The soil properties are summarized in Table 3.6-3.

**Table 3.6-3  
Soil Properties Summary**

Soil Name	Acres	Drainage Class	K-Factor	pH	Percent Clay	Linear Extensibility (Percent)
Hilmar loamy sand (HfA)	161	Moderately well drained	0.24	8.4	8.7	0.4
Dinuba sandy loam (DrA)	9	Somewhat excessively drained	0.43	7.7	13.5	1.0

Notes: K-Factor = Measurement of soil erodibility: values less than 0.25 indicate low erosion potential; values of 0.25 to 0.40 indicate moderate erosion potential; values ranging from 0.40 to 0.69 indicate high erosion potential. Linear Extensibility = Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Source: USDA NRCS

**GROUNDWATER**

The depth to groundwater in most of the Turlock Basin ranges from less than 6 feet to over 100 feet below the ground surface (bgs). According to the Turlock Groundwater Basin Groundwater Management Plan, the average static groundwater levels over the last twenty years have declined 14 feet in Turlock wells; however, the current levels still remain 8 feet above the record low of 75 feet below ground surface, encountered during the 1988-1989 drought year. The Department

of Water Resources' Water Data Library indicated that wells in the vicinity of the project site had depth to groundwater levels of 20 feet or less.

### **3.6.3 REGULATORY SETTING**

#### ***Federal***

#### **UNIFORM BUILDING CODE**

The Uniform Building Code includes development standards for projects to comply with appropriate seismic design criteria in the Uniform Building Code, adequate drainage facility design, and preconstruction soils and grading studies. Seismic design standards have been established to reduce many of the structural problems occurring because of major earthquakes. In 1998, the code was revised as follows:

- Upgrade the level of ground motion used in the seismic design of buildings;
- Add site amplification factors based on local soils conditions; and
- Improve the way ground motion is applied in detailed design.

#### **CLEAN WATER ACT (EROSION CONTROL)**

The Clean Water Act (CWA) (33 USC 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain nonpoint source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). Projects that disturb one or more acres of land are required to obtain NPDES coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activity (General Permit), Order No. 99-08-DWQ. The General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which includes Best Management Practices (BMPs) to protect stormwater runoff, including measures to prevent soil erosion.

#### ***State***

#### **ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT**

The Alquist-Priolo Earthquake Fault Zoning Act (CPRC Division 2, Chapter 7.5) was passed in 1972 in an effort to reduce the potential human safety risks associated with surface faults by preventing the construction of buildings used for human occupancy on the surface trace of active faults. The law only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. The act requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones.

## **SEISMIC HAZARDS MAPPING ACT**

The Seismic Hazards Mapping Act (SHMA) of 1990 addresses earthquake hazards other than fault rupture, including liquefaction and seismically induced landslides. Seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The SHMA states that, “It is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety.” Section 2697(a) of the SHMA additionally requires that, “Cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard.” Fresno County has not been mapped under the SHMA yet since the State has targeted higher risk areas, such as the San Francisco Bay Area and the Los Angeles/Riverside areas. However, as discussed below, the project site has a relatively low risk of seismic hazards.

## **CALIFORNIA BUILDING CODE**

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2010 CBC was published on July 4, 2010 and became effective on January 1, 2011. It contained necessary California amendments which are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

**Local**

**STANISLAUS COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN**

The City of Turlock participates in the preparation of the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) is a countywide plan that identifies risks posed by disasters, and identifies ways to minimize damage from those disasters. The plan is a comprehensive resource document that serves many purposes, including: enhancing public awareness and understanding, creating a decision tool for management, promoting compliance with State and Federal program requirements, enhancing local policies for hazard mitigation capability, and providing inter-jurisdictional coordination.

The current MJHMP was approved by the Federal Emergency Management Agency (FEMA) and adopted in 2006. The plan must be reviewed, updated, and submitted to FEMA for approval at least once every five years. An update to the plan was prepared and submitted to FEMA in 2010. FEMA issued their approval of the plan in July 2011.

**CITY OF TURLOCK GENERAL PLAN**

The City of Turlock includes the following relevant policies related to geology, geologic and seismic hazards:

**Chapter 6 – City Design**

**Policy 6.4-d Minimize site disturbance.** In design and construction, preserve existing natural resources such as soil, noninvasive trees, native plants, and permeable surfaces.

**Policy 6.7-g Safety through design.** Ensure that new development is designed in such a way that public safety is preserved and enhanced.

**Chapter 7 – Conservation**

**Policy 7.2-n Minimize Soil Erosion.** Require new development to implement measures to minimize soil erosion related to construction. Identify erosion-minimizing site preparation and grading techniques in the zoning code.

**Chapter 10 – Safety**

**Policy 10.2-a Minimize Geologic and Seismic Risk.** Continue to use building codes as the primary tool for reducing seismic risk in structures.

**Policy 10.2-b Meet Most Current Seismic Standards.** Continue to require all new buildings in the City to be built under seismic requirements of the latest adopted California Building Code.

**Policy 10.2-e Require Geotechnical Investigations for Proposed Critical Structures.**

Require that geotechnical investigations be prepared for all proposed critical structures before construction or approval of building permits, if deemed necessary. Critical structures include police stations, fire stations, emergency equipment storage buildings, water towers, wastewater lift stations, electrical substations, fuel storage facilities, large public assembly buildings, designated emergency shelters, buildings three or more stories high, and any others deemed at the time of application. The investigation shall include estimation of the maximum credible earthquake, maximum ground acceleration, duration, and the potential for ground failure because of liquefaction or differential settling.

**Policy 10.2-f Require Investigations for ALL Development on Sites Where Soils Pose Risk.**

Require soils reports for new development projects where soils pose a potential geologic risk, and use the information to determine appropriate permitting requirements, if deemed necessary.

**Policy 10.2-g Require erosion control plans.** Require new development to include grading and erosion control plans prepared by a qualified engineer or land surveyor.

**Policy 10.4-aa Maintain Evacuation Routes.** Ensure that major access and evacuation corridors are available and unobstructed in case of major emergency or disaster.

The project's consistency with the General Plan policies is assessed in Chapter 3, Section 3.10 Land Use and Planning.

## **CITY OF TURLOCK MUNICIPAL CODE**

The City of Turlock Municipal Code, Chapter 7-4, Article 1 Grading, Erosion and Sediment Control provides for the conservation of natural resources and the protection of public health and safety, through the reduction or elimination of undue settlement, erosion, siltation and flooding by minimizing the adverse effects of grading, cut and fill operations, water runoff and soil erosion.

### **3.6.4 METHODOLOGY**

This evaluation of geologic and seismic hazard conditions was completed using information collected from the United States Geological Survey and the California Geological Survey (CGS). In order to reduce or mitigate potential hazards from earthquakes or other local geologic hazards, the City ensures that development within the Master Plan area will be completed in compliance with local and State regulations. The regulations include the California Building Code, the Uniform Building Code, the Alquist-Priolo Earthquake Fault Zoning Act, and the Seismic Hazard Mapping Act.

### 3.6.5 IMPACT EVALUATION CRITERIA

According to the CEQA Guidelines, a project will normally have significant adverse impacts associated with geology and soils if the project would:

- a) Expose people or structures to 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 geological 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 risks to life or property.
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. (See Chapter 7 – Effects Found Not To Be Significant).

### 3.6.6 IMPACT ANALYSIS

**Impact #3.6.1 – Exposure of people and structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, ground failure, or landslides.**

This impact analysis evaluates the proposed project’s potential to expose persons or structures to seismic hazards (fault rupture, ground shaking, ground failure, and landsliding). Each of these hazards and their potential environmental impacts are discussed below.

**Fault Rupture**

The project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone. There are no known major or active faults crossing the site or in close proximity to the site. The nearest known active regional faults are the Bear Mountain Fault and the Tesla Ortigalita Fault located approximately 30 miles northeast and southeast of the project site, respectively. The San Joaquin Fault is the closest potentially active fault to project site and is located 18 miles west of the site. Since no known surface expression of active faults is believed to cross the site, fault rupture through the site is not anticipated. No impacts would occur.

**Strong Ground Shaking**

The California Geological Survey maintains a web-based computer model that estimates probabilistic seismic ground motions for any location with California. The computer model estimates the “Design Basis Earthquake” ground motion, which is defined as the peak horizontal ground acceleration with a 10-percent chance of exceedance in 50 years (475-year return period). For an alluvium soil type, the project site’s estimated peak ground acceleration is approximately 0.239g or 0.239 times the acceleration of gravity.

Although the City of Turlock is located in an area of low seismic activity, the faults and fault systems that lie east and west of the City, have the potential to produce groundshaking hazards. The City of Turlock is located on alluvial deposits, which tend to experience greater ground shaking intensities than areas located on hard rock. However, the distance to the faults that are the expected sources of the shaking would be sufficiently great that the effects should be minimal.

Mitigation Measure #3.6-1 requires the applicant to prepare and submit a design-level geotechnical study that complies with all applicable seismic design standards of the California Building Standards Code. Seismic design standards account for peak ground acceleration, soil profile, and other site conditions and they establish corresponding design standards intended to protect public safety and minimize property damage. This measure would reduce potential ground shaking impacts to a level of less than significant.

**Seismic Related Ground Failure (including Liquefaction)**

No specific liquefaction hazards have been identified within the City of Turlock; however, the potential for liquefaction is a recognized hazard throughout the San Joaquin Valley. The project site has a high groundwater level (20 feet or less); however, the soils are well drained and unlikely to become saturated. Additionally, the intensity of ground shaking from a large, distant earthquake is expected to be relatively low on the project site and, therefore, would not be severe enough to induce liquefaction onsite. These characteristics indicate that the project site has a low susceptibility to liquefaction and liquefaction-related phenomena. Regardless, Mitigation Measure #3.6-1 requires the applicant to prepare and submit a design-level geotechnical study that complies with all seismic design standards of the California Building Standards Code. This measure provides certainty that the proposed project would not be at risk of ground failure hazard.

### **Landsliding**

There are no substantial slopes on or near the project site. Therefore, the opportunity for slope failure in response to the long-term geologic cycle of uplift, mass wasting, and difference of slopes is unlikely. However, the project does propose to construct a 4.4 acre detention basin that would alter the geomorphology of the project site and create a potential landslide hazard. This would be a potentially significant impact. Mitigation Measure #3.6.1 requires the applicant to prepare and submit a design-level geotechnical study that complies with all applicable seismic design standards of the California Building Standards Code; this would ensure that design features such as the proposed detention basin would not present a geological hazard. With implementation of this measure, impacts would be reduced to a less than significant level.

Prior to issuance of grading permits for future development within the Morgan Ranch Master Plan area, all applicants are required to submit a design-level geotechnical study and building plans to the City of Turlock for review and approval. The building plans must demonstrate that they incorporate all applicable recommendations of the design-level geotechnical study and comply with all requirements of the most recent California Building Standards Code. A licensed professional engineer is required to prepare the plans, including those that pertain to soil engineering and structural foundations. All onsite soil engineering activities must be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.

**Conclusion:** The potential seismic-related impacts as a result of the project are *less than significant* as a result of standard City building requirements described above.

**Mitigation Measures:** No mitigation measures are required.

### **Impact #3.6.2 – Result in substantial soil erosion or the loss of topsoil.**

Construction activities associated with the proposed project would involve vegetation removal, grading, and significant excavation activities that could expose barren soils to sources of wind or water, resulting in the potential for erosion and sedimentation on and off the project site. Soil erosion or loss of topsoil may occur in areas where soil is disturbed. The majority of soils consist of Hilmar loamy sand, which has a low soil erosion potential. Approximately, nine acres of the project site is underlined with Dinuba sandy loam, which has a high soil erosion potential.

The City of Turlock grading and erosion control ordinance (Turlock Municipal Code Chapter 7-4, Article 1 Grading, Erosion, and Sediment Control) stipulates that approved parcel maps shall be conditioned on compliance with the requirements for grading and erosion control, including the prevention of sedimentation or damage to off-site property.

The National Pollutant Discharge Elimination System (NPDES) stormwater permitting programs regulate stormwater quality from construction sites, which includes erosion and sedimentation. Under the NPDES permitting program, the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) are required for construction activities that would disturb an area of 1 acre or more. The SWPPP must identify potential sources of erosion or sedimentation that may be reasonably expected to affect the quality of stormwater discharges as well as identify

and implement Best Management Practices (BMPs) that ensure the reduction of these pollutants during stormwater discharges. Typical BMPs intended to control erosion include sand bags, detention basins, silt fencing, storm drain inlet protection, street sweeping, stabilizing stockpiled soils, post-construction stabilization or revegetation, and monitoring of water bodies.

Given the significant amount of earthwork on the project site, the impacts from erosion are potentially significant, however, compliance with the City of Turlock's grading and erosion control ordinance as well as the implementation of an SWPPP for NPDES compliance would reduce this impact to a *less than significant* level.

**Conclusion:** Development of the proposed project will not create substantial soil erosion or loss of topsoil; therefore the potential impact will be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

### **Impact #3.6.3 – Result in potential hazards due to construction on unstable soils.**

As part of the proposed project, the project site would be graded and the area underlying the buildings, parks and detention basin would be soil engineered in accordance with the requirements of the California Building Standards Code and the City of Turlock requirement for a preliminary soil management report that characterizes soil properties in the development area. This process could involve the removal of unsuitable soils, the placement of engineered fill, and compaction to ensure that the proposed structures are adequately supported. These practices would ensure that the proposed project is located on stable soils and geologic units and would not be susceptible to settlement or ground failure. Therefore, the impact is less than significant.

**Conclusion:** Potential hazards associated with unstable soils would be mitigated by standard building requirements. The impact is *less than significant*.

**Mitigation Measures:** None required.

### **Impact #3.6.4 – Result in potential hazards due to construction on expansive soils.**

As required by the City of Turlock Municipal Code, building permit applications must be accompanied by a preliminary soil management report that characterizes soil properties in the development area. If the preliminary soils report indicates the presence of expansive soils, settlement, and potential for subsidence, the City will make recommendations for necessary adjustments to project plans that offset potential soil problems. According to the City of Turlock General Plan Safety Element (Figure 10-3, Erosion and Flooding Hazards), expansive soils are not present in the project vicinity and there is no evidence to suggest that soils located within the project site are subject to lateral spreading. The soils on the project site have low clay content (less than 20 percent) and their linear extensibility is less than three percent. The shrink-swell potential of soil is considered low if the soil has a linear extensibility of less than three percent. This condition precludes the possibility of persons or structures being exposed to hazards associated with expansive soils. Impacts would be less than significant.

**Conclusion:** The proposed project will not be located on expansive soils, therefore, the potential impact will be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

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## **3.7 Greenhouse Gas Emissions**

### **3.7.1 INTRODUCTION**

Gases that trap heat in the atmosphere are greenhouse gases (GHGs). The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the earth's temperature. Without the natural heat trapping effect of GHG, the earth's surface would be about 34°C cooler (Climate Action Team 2006). 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, leading to a trend of unnatural changes to the earth's natural climate, known as global warming or climate change.

This section considers the GHG emission impacts of all land uses within the Morgan Ranch Master Plan and the proposed project's connection to global climate change, as well as climate change impacts on the project.

### **3.7.2 ENVIRONMENTAL SETTING**

Constituent gases of the earth's atmosphere called GHGs play a critical role in the earth's radiation budget by trapping infrared radiation emitted from the earth's surface, which would otherwise have escaped into space. This phenomenon, known as the "Greenhouse Effect," is responsible for maintaining a habitable climate.

Greenhouse gases are global pollutants, unlike ozone, carbon monoxide, particulate matter, and toxic air contaminants, which are pollutants of regional and local concern.

#### ***Potential Environmental Effects***

The United Nations Intergovernmental Panel on Climate Change (IPCC) has declared that worldwide, average temperatures are likely to increase by approximately 3°F to 7°F by the end of the 21st century. However, a global temperature increase does not translate to a uniform increase in temperature in all locations on the earth. Regional climate changes are dependent on multiple variables, such as topography. One region of the earth may experience increased temperature, increased incidents of drought, and similar warming effects, whereas another region may experience a relative cooling. According to the IPCC's Working Group II Report website, climate change impacts to North America may include diminishing snowpack, increasing evaporation, exacerbated shoreline erosion, exacerbated inundation from sea level rising, increased risk and frequency of wildfire, increased risk of insect outbreaks, increased experiences of heat waves, and rearrangement of ecosystems, as species and ecosystem zones shift northward and to higher elevations.

In California, as discussed in a report prepared by the California Climate Change Center in 2006 and a report by Moser et al (2009), climate change may result in consequences such as the following:

- A reduction in the quality and supply of water to the state from the Sierra snowpack. If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower;
- Increased risk of large wildfires. If precipitation increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are expected to increase by approximately 30 percent toward the end of the century because more winter rain will stimulate the growth of more plant “fuel” available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation;
- Reductions in the quality and quantity of certain agricultural products. Crops that are likely to be hard hit include wine grapes, fruit, nuts, and milk;
- Exacerbation of air quality problems. If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today’s conditions. This is more than twice the increase expected if temperature rises are kept in the lower warming range;
- A rise in sea levels resulting in the displacement of coastal businesses and residences. During the past century, sea levels along California’s coast have risen about 7 inches. If heat-trapping emissions continue unabated and temperatures rise into the higher warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats;
- Damage to marine ecosystems and the natural environment;
- An increase in infections, disease, asthma, heat stroke/exhaustion, heart attack, stroke, and other health-related problems; and
- A decrease in the health and productivity of California’s forests.

Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-lying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

**GREENHOUSE GAS EMISSIONS INVENTORY AND TRENDS**

In 2006, total worldwide GHG emissions were estimated by the United Nations Framework Convention on Climate Change to be 22,170 million metric tons of carbon dioxide equivalent (MMT<sub>CO2e</sub>). Emissions in the U.S. were estimated to be 7,054.4 MMT<sub>CO2e</sub>.

California is the second-largest contributor in the U.S. of GHGs and the sixteenth largest in the world. In 2009, California produced 456 MMT<sub>CO2e</sub>. The largest source of GHGs in California is transportation, contributing 38 percent of the state’s total GHG emissions. Electricity generation is the second-largest source, contributing 23 percent of the state’s GHG emissions. The inventory for California’s GHG emissions between 2003 and 2009 is presented in Table 3.7-1.

**Table 3.7-1  
California Greenhouse Gas Emissions Inventory (2003 to 2009)**

Main Sector*	Emissions MMT <sub>CO2e</sub>						
	2003	2004	2005	2006	2007	2008	2009
Agriculture	30.67	32.34	32.61	33.75	32.91	33.68	32.13
Forestry	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Commercial and Residential Fuel Use	41.32	42.67	41.04	41.66	41.92	41.54	42.95
Electricity Generation (Imports)	64.55	66.02	62.80	54.68	59.80	65.82	48.05
Electricity Generation (In State)	49.14	50.24	46.21	51.04	55.28	55.40	55.53
Industrial	91.58	93.49	92.75	92.31	89.78	87.09	81.36
Recycling and Waste	6.71	6.68	7.00	7.09	7.06	7.26	7.32
High GWP Gases	12.59	13.34	13.88	14.54	14.81	15.77	16.32
Transportation	179.39	183.18	186.07	186.64	187.08	177.97	172.92
<b>Total</b>	<b>476.14</b>	<b>488.16</b>	<b>482.54</b>	<b>481.89</b>	<b>488.83</b>	<b>484.72</b>	<b>456.77</b>

Sources: California Air Resources Board, 2010.

**GREENHOUSE GASES**

Gases that trap heat in the atmosphere are GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. 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 34°C cooler.

An individual project cannot generate enough GHG emissions to effect a discernible change in global climate. However, the proposed project may participate in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of GHGs, which when taken together constitute potential influences on global climate change. Because these changes may have serious environmental consequences, this section will evaluate the potential for the proposed project to have a significant effect upon California’s environment as a result of its potential contribution to the enhanced greenhouse effect.

The global warming potential is one type of simplified index based upon radiative properties that can be used to estimate the potential future impacts of emissions of different gases upon the climate system in a relative sense. Global warming potential is based on a number of factors, including the radiative efficiency (heat-absorbing ability) of each gas relative to that of carbon dioxide, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of carbon dioxide.

The EPA defines global warming potential as the “cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas,” the reference gas in this case being CO<sub>2</sub>.

The global warming potential of a gas is essentially a measurement of the GHG compared with the reference gas, carbon dioxide; carbon dioxide has a global warming potential of one. The GHGs of concern from the project are summarized in Table 3.7-2.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various emissions to a consistent metric. Methane’s warming potential of 21 indicates that methane has a 21 times greater warming affect than carbon dioxide on a molecule per molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its global warming potential.

### ***Water Vapor***

Water vapor (H<sub>2</sub>O) is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to hold more water when it is warmer), leading to more water vapor in the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a positive feedback loop. The extent to which this positive feedback loop will continue is unknown as there are also dynamics that hold the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth’s surface and heat it up). There are no health effects from water vapor itself; however, when some pollutants come in contact with water vapor, they can dissolve and the water vapor can then act as a pollutant-carrying agent. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves.

**Table 3.7-2  
Greenhouse Gases**

<b>Greenhouse Gas</b>	<b>Description and Physical Properties</b>	<b>Sources</b>
Water vapor	Water vapor is the most abundant, important, and variable greenhouse gas. In the atmosphere, it maintains the climate necessary for life.	Sources include evaporation from the ocean and other water bodies, sublimation of ice and snow, and transpiration from plants.
Ozone (O <sub>3</sub> )	Ozone is a short-lived local greenhouse gas and photochemical pollutant. Tropospheric ozone changes contribute to radiative forcing on a global scale. Global warming potential for short-lived greenhouse gases, such as ozone and aerosols, are not defined by the IPCC.	Ozone is formed from reactions of ozone precursors (nitrogen oxides [NO <sub>x</sub> ] and volatile organic compounds [VOC]) and sunlight in the atmosphere. VOC and NO <sub>x</sub> are emitted from automobiles, solvents, and fuel combustion.
Aerosols	<p>Aerosols are particulate matter suspended in the air. They are short-lived and remain in the atmosphere for about a week. Aerosols warm the atmosphere by absorbing heat and cool the atmosphere by reflecting light, with radiative forcing cooling effects of <math>-1.2 \text{ Wm}^{-2}</math>. There is a low scientific understanding of the radiative forcing of individual aerosols, such as black carbon.</p> <p>Black carbon can cause warming from deposition on snow (<math>+0.1 \text{ Wm}^{-2}</math>) and from suspensions in air (<math>+0.2 \text{ Wm}^{-2}</math>). A global warming potential of 761 for black carbon has been identified in a journal article. Global cooling potentials for other aerosols in a metric similar to the global warming potential are not available.</p>	Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning and incomplete combustion of fossil fuels (such as diesel fuel).
Methane	Methane (CH <sub>4</sub> ) is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 21.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, decay of organic matter, and cattle.
Nitrous oxide	Nitrous oxide is also known as laughing gas and is a colorless greenhouse gas. It has a lifetime of 114 years. Its global warming potential is 310.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Carbon dioxide	Carbon dioxide (CO <sub>2</sub> ) is an odorless, colorless, natural greenhouse gas. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960. Carbon dioxide from fossil fuels contributed 81 percent of greenhouse gas emissions in 2004 in California.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.

Greenhouse Gas	Description and Physical Properties	Sources
Chloro-fluorocarbons	These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 3,800 to 8,100.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987.
Hydro-fluorocarbons	Hydrofluorocarbons are a group of greenhouse gases containing carbon, chlorine, and at least one hydrogen atom. Global warming potentials range from 140 to 11,700.	Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants.
Per-fluorocarbons	Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 6,500 to 9,200.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential, 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.

Source: California Environmental Protection Agency, 2006; Intergovernmental Panel on Climate Change, 2007.

### ***Carbon Dioxide***

Carbon dioxide (CO<sub>2</sub>) is an odorless and colorless GHG. Outdoor levels of carbon dioxide are not high enough to result in negative health effects. Carbon dioxide is emitted from natural and manmade sources. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include the burning of coal, oil, natural gas, and wood. Carbon dioxide is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks. Since the industrial revolution began in the mid-1700s, the sort of human activity that increases GHG emissions has increased dramatically in scale and distribution. Data from the past 50 years suggests a corollary increase in levels and concentrations. As an example, prior to the industrial revolution, CO concentrations were fairly stable at 280 parts per million (ppm). Today, they are around 370 ppm an increase of more than 30 percent. Left unchecked, the concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by the year 2100 as a direct result of anthropogenic emission sources.

### ***Methane***

Methane (CH<sub>4</sub>) is an extremely effective absorber of radiation, though its atmospheric concentration is less than carbon dioxide and its lifetime in the atmosphere is brief (10 to 12 years), compared with other GHGs. No health effects are known to occur from exposure to methane. Methane has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil fuel combustion and biomass burning.

### ***Nitrous Oxide***

Nitrous oxide (N<sub>2</sub>O), also known as laughing gas, is a colorless GHG. Nitrous oxide can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses, it is considered harmless. However, in some cases, heavy and extended use can cause Olney's lesions (brain damage). Concentrations of nitrous oxide also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb). Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition, to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant, for instance, in whipped cream bottles. It is also used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. Nitrous oxide can be transported into the stratosphere, be deposited on the earth's surface, and be converted to other compounds by chemical reaction.

### ***Chlorofluorocarbons***

Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C<sub>2</sub>H<sub>6</sub>) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs are no longer being used; therefore, it is not likely that health effects would be experienced. Nonetheless, in confined indoor locations, working with CFC-113 or other CFCs is thought to result in death by cardiac arrhythmia (heart frequency too high or too low) or asphyxiation. CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Because of the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

### ***Hydrofluorocarbons***

Hydrofluorocarbons (HFCs) are synthetic, man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of the three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23

(CHF<sub>3</sub>), HFC-134a (CF<sub>3</sub>CH<sub>2</sub>F), and HFC-152a (CH<sub>3</sub>CHF<sub>2</sub>). Prior to 1990, the only significant emissions were of HFC-23. The EPA estimates that concentrations of HFC-134a emissions are increasing because of its use as a refrigerant. The EPA also estimates that concentrations of HFC-23 and HFC-134a are now about 10 parts per trillion (ppt) each; and that concentrations of HFC-152a are about 1 ppt. No health effects are known to result from exposure to HFCs, which are man-made for applications such as automobile air conditioners and refrigerants.

### ***Perfluorocarbons***

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through chemical processes in the lower atmosphere. High-energy ultraviolet rays, which occur approximately 60 kilometers (37.5 miles) above Earth's surface, are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF<sub>4</sub>) and hexafluoroethane (C<sub>2</sub>F<sub>6</sub>). The EPA estimates that concentrations of CF<sub>4</sub> in the atmosphere are over 70 ppt. No health effects are known to result from exposure to PFCs. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

### ***Sulfur Hexafluoride***

Sulfur hexafluoride (SF<sub>6</sub>) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest global warming potential of any gas evaluated (23,900). The EPA indicates that concentrations in the 1990s were about 4 ppt. In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

## **3.7.3 REGULATORY SETTING**

### ***International***

Climate change is a global issue involving GHG emissions from all around the world; therefore, countries such as the ones discussed below have made an effort to reduce GHGs.

Intergovernmental Panel on Climate Change: In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations Framework Convention on Climate Change (Convention): On March 21, 1994, the United States joined a number of countries around the world in signing the Convention. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol: The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of 5 percent against 1990 levels over the five-year period 2008-2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of “common but differentiated responsibilities.”

The United States has not approved implementation of the Kyoto Protocol. Other countries have: Australia, Canada, China, the European Union (Belgium, Denmark, Germany, the Hellenic Republic, Spain, France, Ireland, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland, Sweden, Great Britain, and Northern Ireland), Japan, Mexico, and New Zealand.

#### **Federal**

The following are actions concerning the federal government, GHGs, and fuel efficiency.

Greenhouse Gas Endangerment: Massachusetts v. EPA (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four GHGs, including carbon dioxide, under Section 202(a)(1) of the Clean Air Act. In its opinion issued on April 2, 2007, the Supreme Court concluded that GHGs are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- **Endangerment Finding**: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations; and
- **Cause or Contribute Finding**: The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section “Clean Vehicles” below.

The EPA denied ten petitions for Reconsideration of the Endangerment and Cause or Contribute Findings in 2010. Some of the petitioners included the Ohio Coal Association, Peabody Energy Company, and the State of Texas.

In September 2011, the EPA Office of Inspector General evaluated the EPA's compliance with established policy and procedures in the development of the endangerment finding, including processes for ensuring information quality. The evaluation concluded that the technical support document should have had more rigorous EPA peer review.

In June 2012, a federal appeals court rejected a lawsuit by fifteen states against the EPA. The suit alleged that the EPA violated the law by relying almost exclusively on data from the United Nations Intergovernmental Panel on Climate Change rather than doing its own research or testing data according to federal standards. The states include Virginia, Texas, Alabama, Florida, Hawaii, Indiana, Kentucky, Louisiana, Mississippi, Nebraska, North Dakota, Oklahoma, South Carolina, South Dakota, and Utah. Virginia intends to petition the Supreme Court to review the case.

Clean Vehicles: Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards would cut carbon dioxide emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). The EPA and the National Highway Safety Administration are working on a second-phase joint rulemaking to establish national standards for light-duty vehicles for model years 2017 and beyond.

On October 25, 2010, the EPA and the U.S. Department of Transportation proposed the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20 percent reduction in carbon dioxide emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10 percent reduction for gasoline vehicles and 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the agencies are proposing engine and vehicle standards starting in the 2014 model year, which would achieve up to a 10 percent reduction in fuel consumption and carbon dioxide emissions by the 2018 model year.

Mandatory Reporting of Greenhouse Gases: The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements.

On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

New Source Review: The EPA issued a final rule on May 13, 2010 that establishes thresholds for GHGs that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule “tailors” the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, EPA states:

This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to GHG sources, starting with the largest GHG emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for GHG emissions until at least April 30, 2016.

EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation’s largest GHG emitters—power plants, refineries, and cement production facilities.

Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units: As required by a settlement agreement, the EPA proposed new performance standards for emissions of carbon dioxide for new affected fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatt would be required to meet an output-based standard of 1,000 pounds of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology.

Cap and Trade: Cap and trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. Successful examples in the United States include the Acid Rain Program and the NO<sub>x</sub> Budget Trading Program in the northeast. There is no federal cap and trade program currently; however, some states have joined to create initiatives to provide a mechanism for cap and trade.

The Regional Greenhouse Gas Initiative: is an effort to reduce GHGs among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that

further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008.

The Western Climate Initiative partner: jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Its cap and trade program is anticipated to be fully implemented in 2015.

#### **State**

There has been significant legislative and regulatory activity that affects climate change and GHG in California, as discussed below.

Title 24: Although not originally intended to reduce GHGs, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. The 2008 standards became effective January 1, 2010. The requirement for when the 2008 standards must be followed is dependent on when the application for the building permit is submitted. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

California Green Building Standards: On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The Code is a comprehensive and uniform regulatory code for all residential, commercial and K-14 school buildings.

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50 percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official.

The California Green Building Standards Code requires:

Water Efficiency and Conservation [Outdoor Water Use (4.304.1)]: Irrigation Controllers. Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:

1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' watering needs as weather or soil conditions change; and

2. Weather-based controllers without integral rain sensors or communication systems that account for rainfall shall have a separate wired or wireless rain sensor, which connects or communicates with the controller(s).

Construction Waste Reduction of at least 50% (4.408.1): Recycle and/or salvage for reuse a minimum of 50% of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4; OR meet a more stringent local construction and demolition waste management ordinance. Documentation is required per Section 4.408.5. Exceptions:

1. Excavated soil and land-clearing debris;
2. Alternate waste reduction methods developed by working with local enforcing agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite; and
3. The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility.

Materials pollution control (4.504.1 – 4.504.6): Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particleboard.

Installer and Special Inspector Qualifications (702.1-702.2): Mandatory special installer inspector qualifications for installation and inspection of energy systems (e.g., heat furnace, air conditioner, mechanical equipment).

Pavley Regulations: California Assembly Bill (AB) 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. The regulation was stalled by automaker lawsuits and by the EPA's denial of an implementation waiver. On January 21, 2009, the ARB requested that the EPA reconsider its previous waiver denial. On January 26, 2009, President Obama directed that the EPA assess whether the denial of the waiver was appropriate. On June 30, 2009, the EPA granted the waiver request, which begins with motor vehicles in the 2009 model year.

The standards phase in during the 2009 through 2016 model years. When fully phased in, the near term (2009-2012) standards will result in about a 22-percent reduction compared with the 2002 fleet, and the mid-term (2013-2016) standards will result in about a 30-percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than relying on fixed valve timing and lift as has historically been done; turbo charging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.

Executive Order S-3-05: California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be an aggressive, but achievable, mid-term target. The Climate Action Team's Report to the Governor in 2006 contains recommendations and strategies to help ensure the 2020 targets in Executive Order S-3-05 are met.

Low Carbon Fuel Standard - Executive Order S-01-07: The Governor signed Executive Order S-01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low-Carbon Fuel Standard and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

SB 1368: In 2006, the State Legislature adopted Senate Bill (SB) 1368, which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law will effectively prevent California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the state. Thus, SB 1368 will lead to dramatically lower GHG emissions associated with California's energy demand, as SB 1368 will effectively prohibit California utilities from purchasing power from out-of-state producers that cannot satisfy the performance standard for GHG emissions required by SB 1368.

SB 97: Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)." Section 21097 was also added to the Public Resources Code.

On April 13, 2009, OPR submitted to the Secretary for Natural Resources its recommended amendments to the State CEQA Guidelines for addressing GHG emissions, as required by SB 97. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The CEQA Amendments became effective on March 18, 2010.

Assembly Bill 32 (AB 32): The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. Assembly Bill 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. “Greenhouse gases” as defined under AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. ARB is the State agency charged with monitoring and regulating sources of GHG. AB 32 states the following:

Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 million metric tons of carbon dioxide equivalent (MMT $\text{CO}_2\text{e}$ ) on December 6, 2007 (California Air Resource Board 2007b). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 MMT $\text{CO}_2\text{e}$ . Emissions in 2020 in a “Business as Usual (BAU)” scenario are estimated to be 596 MMT $\text{CO}_2\text{e}$ .

Under AB 32, the ARB published its Final Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California (California Air Resources Board. 2007). The ARB has 44 early action measures that apply to the transportation, commercial, forestry, agriculture, cement, oil and gas, fire suppression, fuels, education, energy efficiency, electricity, and waste sectors. Of these early action measures, nine are considered discrete early action measures, as they are regulatory and enforceable as of January 1, 2010. The ARB estimates that the 44 recommendations are expected to result in reductions of at least 42 MMT $\text{CO}_2\text{e}$  by 2020, representing approximately 25 percent of the 2020 target.

The ARB approved the Climate Change Scoping Plan in December 2008 (California Air Resources Board 2008). The Scoping Plan contains measures designed to reduce the state’s emissions to 1990 levels by the year 2020. The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;

- Achieving a statewide renewable energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California’s clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State’s long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between “capped” and “uncapped” strategies. “Capped” strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and-trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. “Uncapped” strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions.

State Bill (SB) 375: SB 375 was passed by the Senate on August 30, 2008 and was signed by the Governor on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, “Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32”. SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies. Concerning CEQA, SB 375, section 21159.28 states that CEQA findings determinations for certain projects are not required to reference, describe, or discuss (1) growth inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved sustainable communities strategy or an alternative planning strategy that the ARB accepts as achieving the GHG emission reduction targets;
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies); or

3. Incorporates the mitigation measures required by an applicable prior environmental document.

Executive Order S-13-08: Executive Order S-13-08 indicates that “climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources”. Pursuant to the requirements in the order, in December 2009, the California Natural Resources Agency released its 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009). The Strategy is the “...first statewide, multi-sector, region-specific and information-based climate change adaptation strategy in the United States”. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

State Bill (SB) 1078, State Bill (SB) 107, and Executive Order S-14-08: On September 12, 2002, Governor Gray Davis signed a bill (SB 1078) requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, the Governor signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020.

CEQA Guidelines Update: As required by SB 97, the Governor’s Office of Planning and Research prepared and transmitted recommended Amendments to the CEQA Guidelines for GHG emissions to the California Natural Resources Agency on April 13, 2009. After a public comment period, the Natural Resources Agency proposed revisions to the text of the Proposed Guidelines Amendments. The Natural Resources Agency provided additional public comment time on the revised text. The Natural Resources Agency adopted the CEQA Guidelines Amendments with minor, non-substantial changes.

The Natural Resources Agency transmitted the Adopted Amendments and the entire rulemaking file to the Office of Administrative Law on December 31, 2009. The Office of Administrative Law reviewed the Adopted Amendments and the Natural Resources Agency’s rulemaking file. The Adopted Amendments were filed with the Secretary of State, and became effective March 18, 2010.

The CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

A new section, CEQA Guidelines Section 15064.4, was added to assist agencies in determining the significance of GHG emissions. The new section allows agencies the discretion to determine whether a quantitative or qualitative analysis is best for a particular project. Importantly, however, little guidance is offered on the crucial next step in this assessment process—how to determine whether the project’s estimated GHG emissions are significant or cumulatively considerable.

Also amended were CEQA Guidelines Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts respectively. Greenhouse gas mitigation measures are referenced in general terms, but no specific measures are championed. The revision to the cumulative impact discussion requirement (Section 15130) simply directs agencies to analyze GHG emissions in an EIR when a project's incremental contribution of emissions may be cumulatively considerable, however it does not answer the question of when emissions are cumulatively considerable.

Section 15183.5 permits programmatic GHG analysis and later project-specific tiering, as well as the preparation of Greenhouse Gas Reduction Plans. Compliance with such plans can support a determination that a project's cumulative effect is not cumulatively considerable, according to proposed Section 15183.5(b).

In addition, the amendments revised Appendix F of the CEQA Guidelines, which focuses on Energy Conservation, and Appendix G, which includes the sample Environmental Checklist Form. The Checklist was also amended to include GHG questions, as identified in the Threshold section of this document.

### ***Regional***

#### **SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT**

The project is within the San Joaquin Valley Air Basin, which is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD).

#### ***Climate Change Action Plan***

On August 21, 2008, the SJVAPCD Governing Board approved a proposal called the Climate Change Action Plan (CCAP), to begin a public process to bring together stakeholders, land use agencies, environmental groups, and business groups, and conduct public workshops to develop comprehensive policies for CEQA guidelines and a carbon exchange bank, and voluntary GHG emissions mitigation agreements for the Governing Board's consideration. The Climate Change Action Plan contained the following goals and actions:

#### ***Goals:***

1. Assist local land-use agencies with CEQA issues relative to projects with greenhouse gas emissions increases.
2. Assist Valley businesses in complying with mandates of AB 32 (Global Warming Solutions Act of 2006).
3. Ensure that climate protection measures do not cause increases in toxic or criteria pollutants that adversely impact public health or environmental justice communities

*Actions:*

1. Authorize the Air Pollution Control Officer to develop greenhouse gas significance threshold(s) or other mechanisms to address CEQA projects with greenhouse gas emissions increases. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in the spring of 2009.
2. Authorize the Air Pollution Control Officer to develop necessary regulations and instruments for establishment and administration of the San Joaquin Valley Carbon Exchange Bank for voluntary greenhouse gas reductions created in the Valley. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in spring 2009.
3. Authorize the Air Pollution Control Officer to enhance the District's existing criteria pollutant emissions inventory reporting system to allow businesses subject to AB 32 emission reporting requirements to submit simultaneous streamlined reports to the District and the state of California with minimal duplication.
4. Authorize the Air Pollution Control Officer to develop and administer voluntary greenhouse gas emission reduction agreements to mitigate proposed greenhouse gas increases from new projects.

Direct the Air Pollution Control Officer to support climate protection measures that reduce GHG emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

***SJVAPCD CEQA Greenhouse Gas Guidance***

On December 17, 2009, the SJVAPCD Governing Board adopted: “*Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*” and the policy: “*District Policy - Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*”. The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project-specific GHG emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, that their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project specific GHG emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources and have a certified Final CEQA document.

Best Performance Standards (BPSs) would be established according to performance-based determinations. Projects complying with any District-adopted Best Performance Standards are not to require specific quantification of GHG emissions and thus would be determined to have a less than significant cumulative impact for GHG emissions. Projects not complying with BPSs thus require quantification of GHG emissions and demonstration that GHG emissions have been reduced or mitigated by 29 percent, as targeted by ARB's AB 32 Scoping Plan to be considered to have a less-than-significant impact on climate change. Furthermore, quantification of GHG emissions are then required for all projects for which the lead agency has determined that an environmental impact report is required, regardless of whether the project incorporates Best Performance Standards.

### ***San Joaquin Valley Carbon Exchange***

The SJVAPCD initiated work on the San Joaquin Valley Carbon Exchange in November 2008. The purpose of the carbon exchange is to quantify, verify, and track voluntary GHG emissions reductions generated within the San Joaquin Valley. To investigate the various issues concerning the development of a mechanism to register GHG emission reductions, the SJVAPCD formed a technical workgroup consisting of SJVAPCD staff, land use agency representatives, industry representatives, agricultural representatives, environmental group representatives, and other interested parties. The workgroup met several times in public meetings during late 2008 and early 2009 to discuss several areas of concern regarding a GHG emission reduction registration program, including:

- The differences between the upcoming AB 32 cap-and-trade program and a GHG emission reduction registration program;
- Potential uses of registered GHG emission reductions. Registered GHG emission reductions could possibly be used to provide mitigation in the CEQA process, as a means to comply with a GHG cap-and-trade program, or other purposes;
- A review of other GHG emission reduction registration programs currently in existence, including the Chicago Climate Exchange, New York Climate Exchange, Northeast Climate Exchange, Climate Action Reserve, and South Coast Air Quality Management District's SoCal Climate Solutions Exchange;
- Required elements of a District-administered GHG emission reduction registration program, including the establishment of criteria for GHG emission reduction registration, the use of ARB protocols, and the requirement to quantify some emission reductions;
- The advantages and disadvantages of development of a GHG emission reduction registration program; and
- Alternatives to the development of a District-administered GHG emission reduction registration program were discussed; including the District's possible role in California Climate Action Reserve as an emission reduction project verifier and/or providing technical

assistance to project proponents quantify and mitigate their projects GHG emissions as part of the CEQA process.

### **Rule 2301**

While the Climate Change Action Plan indicated that the GHG emission reduction program would be called the San Joaquin Valley Carbon Exchange, the District incorporated a method to register voluntary GHG emission reductions into its existing Rule 2301- Emission Reduction Credit Banking through amendments of the rule. Amendments to the rule were adopted on January 19, 2012. The purposes of the amendments to the rule include the following:

- Provide an administrative mechanism for sources to bank voluntary greenhouse gas emission reductions for later use;
- Provide an administrative mechanism for sources to transfer banked greenhouse gas emission reductions to others for any use; and
- Define eligibility standards, quantitative procedures, and administrative practices to ensure that banked greenhouse gas emission reductions are real, permanent, quantifiable, surplus, and enforceable.

### ***Stanislaus County Council of Governments***

The Stanislaus Council of Governments (StanCOG) is the Regional Transportation Planning Agency (RTPA) for the Stanislaus County region, a designation given by the State of California. Under federal legislation, it is also designated as the Metropolitan Planning Organization (MPO).

StanCOG's primary functions are transportation planning and programming. As a state-designated RTPA and federally-designated MPO for Stanislaus County, StanCOG must comply with both designation requirements.

One of the plans that the StanCOG prepares is a Regional Transportation Plan (RTP) that looks 25 years into the future, and sets policies for a wide variety of transportation options and projects. It guides how and where people and goods will travel by identifying both existing and needed transportation facilities.

StanCOG prepares the region's Federal Transportation Improvement Program, a four-year program of financially constrained transportation projects consisting of highway, transit, bicycle, and pedestrian projects that are selected through an approved project selection process.

In addition, the StanCOG is also responsible for documenting that transportation programs, plans, and projects are consistent with, or "conform" to the state and federal plans to protect air quality. Thus, transportation planning involves not only Stanislaus County agencies, but the local Air District, the other seven counties, as well as state and federal agencies.

### **2014 Regional Transportation Plan**

The StanCOG is in the process of preparing the 2014 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS). The 2014 RTP is a planning document to be developed by StanCOG in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the California Department of Transportation (Caltrans), and other stakeholders, including transportation system users.

Following the passage of Assembly Bill 32 (AB 32) – The California Global Warming Solutions Act of 2006, which specifies that by the year 2020, GHG emissions within the state must be at 1990 levels, Senate Bill 375 (SB 375) – The Sustainable Communities and Climate Protection Act of 2008 was signed into law as the framework for achieving greenhouse gas emissions reductions from land use and transportation planning.

SB 375 includes four primary findings related to the RTP/SCS development process:

- That the ARB develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including StanCOG;
- That the StanCOG, during the next RTP update is required to prepare an SCS that specifies how the GHG emission reduction target set by ARB will be achieved. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by StanCOG;
- Streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the Stanislaus County SCS or APS (as determined by ARB) to achieve regional GHG emissions reduction target; and
- Requires that StanCOG conduct the Regional Housing Needs Assessment (RHNA) process consistent with the RTP/SCS process and that the RHNA allocations be consistent with the development pattern in the SCS.

Although the 2014 RTP/SCS specifically targets GHG emission reductions, strategies that reduce GHG emissions have the co-benefit of also reducing criteria air pollutants.

### **San Joaquin Valley Regional Blueprint**

In early 2006 the eight Councils of Governments in the San Joaquin Valley came together in an unprecedented effort to develop a coordinated valley vision – the San Joaquin Valley Regional Blueprint. This eight county venture is being conducted in each county, and has recently been integrated to form a preferred vision for future development throughout the Valley to the year 2050.

On April 1, 2009 the San Joaquin Valley (SJV) Regional Policy Council reviewed the Valley COGs' collaborative work on the Blueprint and took the following actions:

- Adopted a list of Smart Growth Principles to be used as the basis of Blueprint planning in the San Joaquin Valley; and
- Adopted Scenario B+ as the Preferred Blueprint Growth Scenario for the San Joaquin Valley to the year 2050. This preferred scenario will serve as guidance for the Valley's local jurisdictions with land use authority as they update their general plans.

**Local**

**CITY OF TURLOCK**

The City of Turlock is the local government with the authority over land-use decisions for this project. The project is subject to the City of Turlock General Plan.

***City of Turlock General Plan***

In response to AB 170 requirements, the City of Turlock amended the Air Quality and Greenhouse Gases Element of the General Plan by adopting Resolution 2009-063, in April 2009. This plan amendment adopted objectives, policies, and new mitigation measures. Many of the EIR measures are part of a city-wide program and will be imposed as mitigation measures on this project pursuant to City policy. The following General Plan greenhouse gas policies are specifically applicable to the project:

***Guiding Policies***

- Policy 8.2-a     Reduce Greenhouse Gas Emissions.** Reduce greenhouse gas emissions to support statewide GHG reduction goals under the California Global Warming Solutions Act (AB 32).
- Policy 8.2-b     Decrease Vehicle-Miles Travelled.** Promote a broad range of transportation, land use, and site design measures that result in a decrease in the number of automobile trips and vehicle-miles traveled per capital.
- Policy 8.2-c     Facilitate Energy-Efficient Buildings.** Encourage energy efficiency through good urban design and site-planning practices, as well as through building design, maintenance and retrofit.
- Policy 8.2-d     Promote Energy Conservation.** Support understanding of the relationship between energy consumption, air quality, and greenhouse gases, and promote energy-saving practices.
- Policy 8.2-e     Reduce Waste.** Reduce per capita landfill waste generation by promoting reuse, recycling, and composting.

## ***Implementing Policies***

### *Planning for Climate Change*

**Policy 8.2-f GHG Emissions Reduction Implementation.** Within three years of General Plan adoption, prepare a strategic plan for reducing greenhouse gas emissions, focusing on technically and financially feasible implementation measures that can be taken by the City. The Plan will guide the City to lower emissions from its buildings, fleet, and operations.

### *Transportation*

**Policy 8.2-g Develop Circulation System That Facilitates Alternative Transportation Modes.** Promote alternatives to automobile use by establishing a Circulation Plan and street design standards that enable safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities. Plan Elements include a citywide bike network and traffic calming street design. See Chapter 5, Circulation.

**Policy 8.2-h Establish Connective Street Network to Minimize Trip Length.** Minimize vehicle-miles travelled by establishing a connective circulation network providing multiple, direct paths. See Chapter 5, Circulation.

**Policy 8.2-i Provide Bicycle Facilities.** Require minimum bike parking for multi-family residential and commercial development, and encourage provision of additional end-of-trip facilities.

**Policy 8.2-j Minimize Parking.** Encourage the provision of minimum parking required to support uses.

**Policy 8.2-k Support Alternative Fuel Vehicles.** Provide incentives for the provision of priority parking for alternative fuel vehicles and electronic vehicle charging stations as individual project measures for new development

### *Land Use*

**Policy 8.2-l Establish Land Use Pattern That Supports Trip Reduction.** Establish a land-use pattern that enables alternatives to automobile use and reduces trip lengths, including increased residential density, transit-oriented and mixed-use development, neighborhood commercial areas, and pedestrian realm enhancements.

**Policy 8.2-m Pedestrian-Oriented Site Design.** Orient development to encourage pedestrian and transit accessibility. Strategies include locating buildings and primary entrances adjacent to public streets; placing parking at the rear of sites or in structures above retail; and providing clear and direct pedestrian paths across parking areas.

*The Land Use and Economic Development, City Design, and Circulation elements outline detailed measures pertaining to these policies.*

*Energy Efficiency and Conservation*

**Policy 8.2-n Wastewater and Water System Efficiency.** Maximize the efficiency of City-operated wastewater treatment, water treatment, pumping, and distribution equipment. This measure may be part of the GHG Emissions Reduction Plan described in 8.2-f.

**Policy 8.2-o Outdoor Lighting.** Establish outdoor lighting standards to minimize energy use while ensuring appropriate light levels. Standards could include:

- Photocells or astronomical time switches;
- Directional and shielded LED lights
- Security lights with motion detectors; and
- Prohibition against continuous all-night outdoor lighting unless required for security reasons.

*New outdoor lighting standards should apply to municipal operations, including traffic signals, as well as to new private development.*

**Policy 8.2-p Improve Energy Efficiency in Public Buildings.** Prepare and implement a plan to increase energy efficiency in public buildings, as part of the GHG Emissions Reduction Plan described in 8.2-f. Measures may include but not be limited to the following:

- Conduct energy audits for all municipal facilities;
- Retrofit municipal facilities for energy efficiency where feasible and when remodeling or replacing components, including increased insulation, installing green or reflective roofs, installing automated lighting controls, and retrofitting heating and cooling systems;
- Require that any newly constructed, purchased, or leased municipal space meet minimum standards, such as exceeding Title 24 energy efficiency by 20 percent; and
- Educate employees on energy conservation.

**Policy 8.2-q Promote Energy Conservation Programs.** Promote and support State and TID energy conservation programs for housing construction and rehabilitation, including energy audits, weatherization assistance, and energy rebates for energy-efficient appliances and lighting, ventilation, and other systems:

- For participants in the Home Rehabilitation Loan program, provide information and technical support regarding available rebate and incentive programs (through TID and PG&E) for energy efficient appliances and weatherization tools; and

- Require Energy Star electrical appliances when replacing appliances in City-funded Home Rehabilitation projects.

*A sizable portion of the residential structures in Turlock were constructed before energy efficiency standards were established, and should be improved.*

**Policy 8.2-r Encourage Greater Energy Efficiency in New Development.** For new Master Plan Areas, seek to expedite permit processing for new buildings that meet or exceed the Tier 1 optional standards in the California Green Building Standards Code.

*Achievement of at least 20 percent greater energy efficiency than the Title 24 standards is among the Best Performance Standards (BPS) for Development Projects proposed by the Air District, for credit toward the assignment of “less than significant” environmental impact.*

**Policy 8.2-s Require Energy Efficiency for Projects Receiving Public Assistance.** Require that projects receiving assistance from the City of Turlock, including but not limited to infrastructure projects and affordable housing, include energy efficiency measures beyond the minimum standards of Title 24.

#### *Clean Energy Production*

**Policy 8.2-t Encourage Solar Power Generation.** Encourage the use of passive and active solar devices such as solar collectors, solar cells, and solar heating systems into the design of buildings and parking areas by participating in existing incentive programs and considering new incentives for Turlock property owners.

**Policy 8.2-u Encourage Other Onsite Renewable Energy Systems.** Encourage the installation of other renewable energy systems in new or existing development. Renewable power generation may count toward the Air District’s proposed BPS for projects with systems capable of generating at least 2.5 percent of their energy need.

**Policy 8.2-v Methane Capture.** Produce energy through methane capture at the Regional Water Quality Control Facility. Explore opportunities to enhance waste-to-energy generation if feasible.

#### *Solid Waste*

**Policy 8.2-w Reduce Solid Waste.** Maintain the City’s long-standing commitment to innovative solutions that reduce solid waste and increase diversion rates. Waste reduction and diversion can contribute significantly to reducing greenhouse gas emissions. Waste reduction.

### 3.7.4 METHODOLOGY

#### *Modeling Parameters and Assumptions*

The California Emissions Estimator Model (CalEEMod) was used to quantify project-related construction and operational emissions. The CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The model incorporates Pavley standards and Low Carbon Fuel standards into the mobile source emission factors. Further, the model identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user. The SJVAPCD recommends the use of CalEEMod to quantify project impacts.

#### **CONSTRUCTION**

The project would emit GHGs from upstream emission sources and direct sources (combustion of fuels from worker vehicles and construction equipment).

An upstream emission source (also known as life cycle emissions) refers to emissions that were generated during the manufacture of products to be used for construction of the project. Upstream emission sources for the project include but are not limited to the following: emissions from the manufacture of cement; emissions from the manufacture of steel; and/or emissions from the transportation of building materials to the seller. The upstream emissions were not estimated because they are not within the control of the project and to do so would be speculative. Additionally, the California Air Pollution Control Officers Association White Paper on CEQA and Climate Change supports this conclusion by stating, “The full life-cycle of GHG [greenhouse gas] emissions from construction activities is not accounted for ... and the information needed to characterize [life-cycle emissions] would be speculative at the CEQA analysis level” (California Air Pollution Control Officers Association 2008). Therefore, pursuant to CEQA Guidelines Sections 15144 and 15145, upstream /life cycle emissions are speculative; no further discussion is necessary.

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from onsite and offsite activities. Onsite emissions principally consist of exhaust emissions (NO<sub>x</sub>, SO<sub>x</sub>, CO, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, VOC, PM<sub>10</sub>, and PM<sub>2.5</sub>) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM<sub>10</sub>) from disturbed soil. Additionally, paving operations and application of architectural coatings would release VOC emissions. Offsite emissions are caused by motor vehicle exhaust (NO<sub>x</sub>, SO<sub>x</sub>, CO, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, VOC, PM<sub>10</sub>, and PM<sub>2.5</sub>) from delivery vehicles, worker traffic, and road dust (PM<sub>10</sub> and PM<sub>2.5</sub>).

The project is estimated to start construction in 2014 and be complete by 2020. The estimated construction schedule and construction equipment is provided in Table 3.3-6 in Section 3.3 Air Quality of this Draft EIR.

## **OPERATION**

### ***Scenarios***

Operational emissions are those emissions that occur during operation of the project. Three scenarios of operational emissions are estimated, as follows:

- BAU: Emissions use factors for 2005 and 2006; assumes no GHG regulations were enacted on behalf of AB 32;
- 2020 Unmitigated: Emissions in 2020, which include reductions from the Pavley and Low Carbon Fuel Standard regulations (motor vehicles), Renewable Energy Standards (electricity); and
- 2020 Mitigated: Includes reductions from regulation and mitigation measures.

## **GREENHOUSE GASES EVALUATED**

This analysis is restricted to GHGs identified by AB 32, which include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The project would generate a variety of GHGs, including several defined by AB 32 such as carbon dioxide, methane, and nitrous oxide.

The project may emit GHGs that are not defined by AB 32. For example, the project may generate aerosols through emissions of diesel particulate matter from the vehicles and trucks that would access the project site. Aerosols are short-lived particles, as they remain in the atmosphere for about one week. Black carbon is a component of aerosol. Studies have indicated that black carbon has a high global warming potential; however, the Intergovernmental Panel on Climate Change states that it has a low level of scientific certainty.

Water vapor could be emitted from evaporated water used for landscaping, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities.

The project would emit nitrogen oxides and volatile organic compounds, which are ozone precursors. Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

Certain GHGs defined by AB 32 would not be emitted by the project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by

the project. Therefore, it is not anticipated that the project would emit perfluorocarbons or sulfur hexafluoride.

## **SOURCES**

### ***Motor Vehicles***

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project site. The emissions were estimated using CalEEMod emission factors.

The Traffic Impact Study for the project, prepared by Omni Means Engineers and Planners was used to obtain average daily trip generation to model operational motor vehicle emissions. The SJVAPCD approved Residential Fleet Mix was used in the modeling. The emission factors are the CalEEMod defaults, which use EMFAC2007 emission factors. For the BAU case, emission factors for 2005 were used. For the 2020 scenario, emissions for the year 2020 were used. The emission factors for 2020 take into account the Pavley and Low Carbon Fuel Standard regulations.

### ***Natural Gas***

Natural gas emissions refer to the emissions that occur when natural gas is combusted on the project site for heating water, space heating, or other uses. There was no reduction attributed to the 2020 scenario for this category. The CalEEMod defaults were used.

### ***Electricity***

The Pacific Gas & Electric (PG&E) Company would provide electricity to the project area. For the BAU case, the CalEEMod defaults for electricity emission factors for PG&E were used, which represent emission factors in 2006. Pacific Gas & Electric had 12.6 percent renewable energy in its portfolio in 2006 (California Public Utilities Commission. 2010). Therefore, to achieve a 33 percent reduction as required by California's Renewable Electricity Standard, 20.4 percent more renewable energy in the utility's portfolio is needed. In 2020, the utility will achieve 33 percent renewable energy, which would decrease the emissions associated with electricity by 20.4 percent. The CalEEMod default electricity emission factors were adjusted to reflect this reduction.

### ***Water Transport***

There would be GHG emissions generated from the electricity required to transport and treat the water to be used on the project site. For the BAU water demand estimate, historical values CalEEMod default values were used. These defaults were included in the analysis for the 2020 Scenarios.

## ***Waste***

There would be GHG emissions from the decomposing waste generated by the project. The default waste generation rate from CalEEMod was used in the analysis.

### **3.7.5 IMPACT EVALUATION CRITERIA**

Generally, the evaluation of an impact under CEQA requires measuring data from a project against a “threshold of significance”. The Office of Planning and Research’s amendments to the CEQA Guidelines state that “when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence”.

According to the CEQA Guidelines’ Appendix G Environmental Checklist, to determine whether greenhouse gas emissions impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Guideline 15064.4(a) states, “. . . A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use . . . ; or (2) Rely on a qualitative analysis or performance based standards”.

The CEQA Guidelines amendments do not identify a threshold of significance for GHG emissions, nor does it prescribe assessment methodologies or specific mitigation measures. Instead, it calls for a “good faith effort, based on available information, to describe, calculate or estimate the amount of GHG emissions resulting from a project”.

The CEQA Guidelines amendments for GHG emissions state that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

Consideration No. 1: The extent to which the project may increase or reduce GHG emissions compared with the existing environmental setting. This discussion could involve a quantification of GHG emissions to the extent feasible.

Consideration No. 2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

Consideration No. 3: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

### **CALIFORNIA AIR POLLUTION CONTROL OFFICERS ASSOCIATION**

On January 8, 2008, the California Air Pollution Control Officers Association released a paper that provides a common platform of information and tools for public agencies in addressing the climate change issue. The disclaimer states that it is not a guidance document but a resource to enable local decision makers to make the best decisions they can in the face of incomplete information during a period of change. The paper indicates that it is an interim resource and does not endorse any particular approach. It discusses three groups of potential thresholds, including a no significance threshold, a threshold of zero, and non-zero thresholds. Non-zero quantitative thresholds identified in the paper range from 900 to 50,000 metric tons per year. The paper also identified non-zero qualitative thresholds.

### **CALIFORNIA AIR RESOURCES BOARD**

On October 24, 2008, the ARB released a Preliminary Draft Staff Proposal entitled, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under California Environmental Quality Act (Draft Staff Proposal). The staff proposal is a rough framework for determining significance thresholds. The guidance provides that if certain projects meet performance standards and remain below numeric thresholds, they will be considered less than significant. In its proposal, Staff noted that non-zero thresholds can be supported by substantial evidence, but thresholds should nonetheless be sufficiently stringent to meet the State's interim (2020) and long-term (2050) emissions reduction targets. The proposal takes different approaches for different sectors: 1) industrial projects, and 2) residential and commercial projects. Although the ARB Staff proposed a numerical threshold for the GHG emissions of industrial projects, none were proposed for commercial (and residential) projects. The draft proposal was very controversial and ARB Staff no longer has any plans to move forward with any final thresholds. A key preliminary conclusion from the draft thresholds, however, was that ARB Staff, in setting a numerical threshold for industrial projects and suggesting performance standards, does not believe a "zero threshold" is mandated by CEQA". It is unknown at this time whether the ARB will finalize its draft proposal.

### **SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT**

The SJVAPCD has published guidance for how to address GHG emissions in CEQA documents for projects located within its jurisdiction (San Joaquin Air Pollution Control District 2009). In the guidance, the District states the following:

District staff concludes that existing science is inadequate to support quantification of impacts that project specific [greenhouse gas] GHG emissions have on global climatic change. This is readily understood when one considers that global climatic change is the result of the sum total of GHG emissions, both manmade and natural that occurred in the past; that is occurring now; and will occur in the future. The effects of project specific GHG emissions are cumulative, and unless reduced or mitigated, their incremental contribution to global climatic change could be considered significant. District staff concludes that this cumulative impact is best addressed by requiring all projects subject to CEQA to reduce their GHG emissions through project design elements.

Therefore, the potential project specific and cumulative impacts are addressed utilizing the SJVAPCD's guidance as shown below.

In accordance with the District's guidance for addressing GHG emission impacts for new projects under CEQA, a project would be considered to have a less than significant individual and cumulative impact on climate change if it were to do at least one of the following:

Exempt from the requirements of CEQA or comply with an approved greenhouse gas emission reduction plan or greenhouse gas mitigation program, which avoids or substantially reduces greenhouse gas emissions within the geographic area in which the project is located. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency, or

Implement approved best performance standards or quantify project greenhouse gas emissions and reduce those emissions by at least 29 percent compared to BAU. "Business as Usual" is referenced in the ARB's AB 32 Scoping Plan as emissions occurring in 2020 if the average baseline emissions during the 2002–2004 period grew to 2020 levels without additional control. Therefore, 2002–2004 emissions factors, on a unit of activity basis, multiplied by the activity expected to occur in 2020, is an appropriate representation of 2020 BAU. The reductions can be based on any combination of reduction measures, including greenhouse gas reductions achieved as a result of changes in building and appliance standards occurring since the 2002–2004 baseline period.

The project is not exempt from CEQA. The Scoping Plan prepared pursuant to AB 32 demonstrates how California would reduce GHG emissions to 1990 levels by the year 2020. However, most of the measures in the Scoping Plan are not applicable to the project. There are no approved best performance standards that would apply to the project. Therefore, the approach used in this analysis is to quantify GHG emissions and reduce the emissions by at least 29 percent compared to BAU.

**3.7.6 IMPACT ANALYSIS**

**Impact #3.7.1 – Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. [Evaluation Criteria (a)]**

As stated previously, the SJVAPCD has established a menu of performance standards, some of which depend on the existence of an adopted climate action plan or the establishment of Best Performance Standards. This analysis adopts the following alternative threshold provided by District: whether the project will reduce or mitigate GHG levels by 29 percent from business-as-usual levels. To do so, this the analysis first will quantify project-related GHG emissions under a “business-as-usual” scenario, and then compare these emissions with those emissions that would occur when all project-related design features are accounted for, and when compliance with new regulatory measures is assumed. The standard and methodology is explained in further detail, below.

**Construction**

Greenhouse gas emissions generated during construction are shown in Table 3.7-3. The SJVAPCD does not have thresholds or guidance regarding the significance of construction related emissions. However, that does not mean a significance finding should not be identified. Assembly Bill 32 requires that emissions within California are reduced to 1990 levels by the year 2020. However, it could be possible that there could be some construction within the master Plan in 2020 or later. It should be noted that the annual construction emissions would be significantly less than the 25,000 MTCO<sub>2e</sub> reporting threshold in the ARB’s cap and trade program.

Mitigation Measure #3.3.1a in Section 3.3 Air Quality would reduce construction emissions of GHGs in addition to criteria pollutants; these measures are consistent with the EPA publication, “Potential for Reducing Greenhouse Gas Emissions from Construction”. Because the construction emissions are minimal, and reduction measures will be incorporated, the impact would be *less than significant*.

**Table 3.7-3  
Construction Greenhouse Gas Estimates**

<b>Year</b>	<b>Phase</b>	<b>MTCO<sub>2e</sub> (Metric Tons)</b>
2014	Phase 1	2,456.23
2015	Phase 1	1,431.24
	Total	3,887.47
2016	Phase 2	3,219.15
2017	Phase 2	1,631.75
	Total	4,850.90
2018	Phase 3	1,977.08
2019	Phase 3	1,057.49
	Total	3,034.57
2020	Phase 4	622.62
	Total	622.62
<b>Total from all phases</b>		<b>12,395.56</b>

Source: City of Turlock, 2013.

Note: Results include CalEEMod defaults.

**Operation**

Operational or long-term emissions occur over the life of the project. The operational emissions for the project are shown in Table 3.7-4.

As listed in the table, the BAU emissions represent emissions if they would have occurred without regulations enacted pursuant to AB 32. Regulations alone would result in a 29.8 percent reduction in BAU emissions, which is a less than significant impact.

The 2020 emissions with regulations represent emissions with reductions from regulations enacted as part of AB 32, in particular the following:

- Mobile: Pavley and Low Carbon Fuel Standard regulation reductions are calculated by CalEEMod. The estimated reduction is 27.3 percent of the mobile sources GHG emissions (motor vehicle emissions); and
- Electricity: Renewable Portfolio Standards require a 33 percent renewable portfolio by the year 2020. The estimated reduction from electricity GHG emissions is 20.4 percent.

**Table 3.7-4  
2020 Operational BAU Greenhouse Gas Estimates**

Source	BAU MTCO <sub>2</sub> e	2020 (with Regulation) MTCO <sub>2</sub> e
Phase_2014		
Area	813.27	660.03
Energy	1,747.68	1,747.68
Mobile	7,781.85	5,193.91
Waste	206.68	206.68
Water	105.25	105.25
<b>Total</b>	<b>10,654.73</b>	<b>7,913.55</b>
Phase_2016		
Area	813.27	660.03
Energy	1,916.10	1,916.10
Mobile	8,210.41	5,086.76
Waste	209.36	209.36
Water	142.54	142.54
<b>Total</b>	<b>11,291.68</b>	<b>8,014.79</b>
Phase_2018		
Area	570.40	436.94
Energy	1,505.36	1,505.36
Mobile	6,065.87	3,495.08
Waste	167.08	167.08
Water	99.22	99.22
<b>Total</b>	<b>8,407.93</b>	<b>5,703.68</b>
Phase_2020		
Area	569.08	435.62
Energy	1,322.09	1,322.09
Mobile	5,462.19	3,026.68
Waste	154.60	154.60

Source	BAU MTCO <sub>2</sub> e	2020 (with Regulation) MTCO <sub>2</sub> e
Water	67.01	67.01
<b>Total</b>	<b>7,574.97</b>	<b>5,006.00</b>
<b>Total of all Phases</b>	<b>37,929.31</b>	<b>26,638.02</b>
	Reduction	29.8
	Significance Threshold	29%
	Are emissions significant after mitigation and regulation?	No

Source: City of Turlock, 2013.

Note: source of BAU emissions: CalEEMod output for the year 2005 (Appendix C).

Note: source of 2020 emissions: CalEEMod output for the year 2020 (Appendix C).

Note: Both 2005 and 2020 includes the sum of all phases from 2014 to 2020.

Additionally, the State, the San Joaquin Valley Air Pollution Control District, and the City of Turlock impose requirements that help encourage energy and water conservation and limit air pollutants such as:

- California Building Code: Electrical outlets on the exterior of homes to encourage the use of electric landscape equipment;
- SJVAPCD: Limitations on Wood Burning Fireplaces or Wood Burning Heaters in New Residential Developments:
  - No person shall install a wood burning fireplace in a new residential development with a density greater than two dwelling units per acre; and
  - No person shall install more than two EPA Phase II Certified wood burning heaters per acre in any new residential development with a density equal to or greater than three dwelling units per acre.
- City of Turlock Water Efficient Landscape Ordinance: Apply to new construction and rehabilitated landscapes for public agency projects and private development projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review. For the purpose of determining Maximum Applied Water Allowance, average irrigation efficiency is assumed to be 0.71. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 0.71; and
- City of Turlock Municipal Code, Chapter 7-7 Street Trees: The City requires the planting of street trees as a part of subdivision developments and along major streets to enhance the character of the City.

**Conclusion:** Construction emissions are minimal and incorporated emission reduction measures would primarily occur prior to 2020; therefore, they would be *less than significant*. Operational emissions would be reduced by 29.8 percent compared to BAU emissions with regulations alone. This would be consistent with the SJVAPCD quantitative threshold of a 29 percent reduction in BAU emissions. Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required

**Effectiveness of Measures:** With the implementation of the above regulations, including Mitigation Measure 3.3-1a, impacts would be *less than significant*.

**Impact #3.7.2 - Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG. [Evaluation Criteria (b)]**

The City of Turlock does not have a GHG reduction plan or climate action plan. In the absence of a local, regional, or State plan that fully satisfies the requirements of the CEQA Guidelines, this analysis will focus on the project's consistency with the overarching goals of AB 32 and the strategies of CARB's Scoping Plan.

As discussed in Impact 3.7.1, above, the project would be consistent with the SJVAPCD's recommendations in its guidance for addressing GHGs in CEQA. The SJVAPCD's guidance is based on a minimum of 29 percent reduction from Business as Usual, which is the same reduction that California would need to reduce GHG emissions to 1990 levels by the year 2020. In the absence of an applicable local or regional GHG reduction plan, the project's compliance with AB 32 is evaluated through compliance with the applicable measures in the Scoping Plan below.

**Scoping Plan**

Emission reductions in California alone would not be able to stabilize the concentration of GHGs in the earth's atmosphere. However, California's actions set an example and drive progress towards a reduction in GHGs elsewhere. If other states and countries were to follow California's emission reduction targets, this could avoid medium or higher ranges of global temperature increases. Thus, severe consequences of climate change could also be avoided.

The ARB Governing Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (California Air Resources Board 2008).

Project consistency with applicable strategies in the Scoping Plan is assessed in Table 3.7-5. As shown, the project is consistent with the applicable strategies in the Scoping Plan.

**Table 3.7-5  
Consistency with Applicable Scoping Plan Reduction Measures**

Scoping Plan Reduction Measure	Project Consistency or Reason Why Not Applicable
1. California Cap-and-Trade Program Linked to Western Climate Initiative. Implement a broad based California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap-and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater benefits for California.	Not Applicable. When this cap-and-trade system begins, products or services (such as electricity) would be covered and the cost of the cap-and-trade system would be transferred to the consumers.
2. California Light-Duty Vehicle Greenhouse Gas Standards. Implement adopted standards and planned second phase of the program. Align zero emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or lead agency. When this measure is initiated, the standards would be applicable to the light-duty vehicles that would access the project site.
3. Energy Efficiency. Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California	Consistent. This is a measure for the State to increase its energy efficiency standards. However, the project would increase its energy efficiency through mitigation measure #3.3.1i of the air quality section of this EIR (20 percent above the 2008 Title 24 Standards).
4. Renewable Portfolio Standard. Achieve 33 percent renewable energy mix statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.	Not Applicable. PG&E continues to diversify its power supply portfolio through the incorporation of solar, hydroelectric, wind, and fuel cells.
5. Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard	Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or lead agency. When this measure is initiated, the standard would be applicable to the fuel used by vehicles that would access the project site.
6. Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. This measure refers to SB 375.	Not Applicable. The project is not related to developing greenhouse gas emission reduction targets.
7. Vehicle Efficiency Measures. Implement light duty vehicle efficiency measures.	Not Applicable. When this measure is initiated, the standards would be applicable to the light-duty vehicles that would access the project site.
9. Goods Movement. Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.	Not Applicable. The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.

Scoping Plan Reduction Measure	Project Consistency or Reason Why Not Applicable
10. Million Solar Roofs Program. Install 3,000 MW of solar-electric capacity under California’s existing solar programs.	Consistent. This measure is being implemented by various agencies throughout California. The proposed project will offer homeowners the opportunity to install rooftop solar photovoltaic facilities on their homes.
11. Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures.	Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or lead agency. When this measure is initiated, the standards would be applicable to vehicles that access the project site.
12. Industrial Emissions. Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.	Not Applicable. The project is not an industrial land use.
13. High Speed Rail. Support implementation of a high-speed rail system.	Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or the City. The traffic/transportation analysis of this EIR (Section 3.14) has determined that this project neither hinders nor affects the implementation of a proposed High Speed Rail project.
14. Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California’s new and existing inventory of buildings.	Consistent. The State’s goal is to increase the use of green building practices. The project would implement green building strategies.
15. 16. High Global Warming Potential Gases. Adopt measures to reduce high global warming potential gases.	Not Applicable. When this measure is initiated, it would be applicable to those gases that have high global warming potential that would be used by the project (such as in air conditioning and refrigerators).
17. Recycling and Waste. Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	Consistent. The project would not contain a landfill. The State’s goal is to help increase waste diversion. The project would participate in the City of Visalia’s recycling program.
18. Sustainable Forests. Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.	The project site is in a vacant disturbed condition. No forested lands exist onsite.
19. Water. Continue efficiency programs and use cleaner energy sources to move and treat water.	Consistent. The project is consistent with the City of Turlock’s City of Turlock Water Efficient Landscape Ordinance.

Scoping Plan Reduction Measure	Project Consistency or Reason Why Not Applicable
20. Agriculture. In the near-term, encourage investment in manure digesters and at the five-year Scoping Plan update determine if the program should be made mandatory by 2020.	Not Applicable. No grazing or feedlot activities that generate manure occur onsite or are proposed to be implemented by the project.

Source: California Air Resources Board 2008.

Note: Source of Project Consistency or Applicability: Quad Knopf.

**General Plan Compliance**

The update of the Air Quality and Greenhouse Gases Element of the Turlock General Plan that was completed in 2012 included objectives and policies aimed at reducing GHG emissions within the city. The General Plan policies relative to GHG are contained in Table 3.7-6 below. As shown in the table, the project is consistent with the feasible and applicable policies.

The proposed project would not obstruct attainment of any of the goals established under AB 32. The project would comply with all present and future regulatory measures developed in accordance with AB 32 and CARB’s Scoping Plan.

Aside from helping to implement measures contemplated in the ARB’s Scoping Plan, the project mitigation measures in the air quality section, as well as regulatory measures, will likely help to implement measures contemplated by the SJVAPCD’s CEQA guidance document. The SJVAPCD notes that projects can reduce GHG emissions through project designs that reduce vehicle miles traveled through features that promote pedestrian and bicycle access and include mixed-use development. The project is consistent with this strategy.

**Table 3.7-6  
Consistency with General Plan Objectives and Policies**

Guiding Policies	Policy Text	Consistency Determination
Policy 8.2-a	Reduce greenhouse gas emissions to support statewide GHG reduction goals under the California Global Warming Solutions Act (AB 32).	Consistent: The project reduces GHG emissions by over 29%.
Policy 8.2-b	Decrease Vehicle-Miles Travelled. Promote a broad range of transportation, land use, and site design measures that result in a decrease in the number of automobile trips and vehicle-miles traveled per capital.	Consistent: The project reduces VMT by including commercial, office, and an elementary school within walking distance from within the project site.
Policy 8.2-c	Facilitate Energy-Efficient Buildings. Encourage energy efficiency through good urban design and site-planning practices, as well as through building design, maintenance and retrofit.	Consistent: The project will require a 20% reduction in Title 24 requirements.

Guiding Policies	Policy Text	Consistency Determination
Policy 8.2-d	Promote Energy Conservation. Support understanding of the relationship between energy consumption, air quality, and greenhouse gases, and promote energy-saving practices.	Consistent: Developers shall encourage the installation of rooftop solar photovoltaic facilities on medium and high density residential units, trees will be planted throughout the development, and electric landscaping equipment shall be promoted.
Policy 8.2-e	Reduce Waste. Reduce per capita landfill waste generation by promoting reuse, recycling, and composting.	Consistent: The project will recycle 50% of its solid waste.
<b>Implementing Policies</b>		
<i>Planning for Climate Change</i>		
Policy 8.2-f	GHG Emissions Reduction Implementation. Within three years of General Plan adoption, prepare a strategic plan for reducing greenhouse gas emissions, focusing on technically and financially feasible implementation measures that can be taken by the City. The Plan will guide the City to lower emissions from its buildings, fleet, and operations.  <i>A Stanislaus County greenhouse gas inventory will be funded by a Proposition 84 grant from the State. The next Regional Transportation Plan is due in 2013 and will include a Sustainable Communities Strategy to meet the requirements of Senate Bill 375. Data and programs from these sources will be incorporated in the GHG Emissions Reduction Plan.</i>	Not Applicable: This measure requires the City to write a plan.
<i>Transportation</i>		
Policy 8.2-g	Develop Circulation System That Facilitates Alternative Transportation Modes. Promote alternatives to automobile use by establishing a Circulation Plan and street design standards that enable safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities. Plan Elements include a citywide bike network and traffic calming street design. See Chapter 5, Circulation.	Consistent: The project includes both Class II and Class III bicycle lanes.
Policy 8.2-h	Establish Connective Street Network to Minimize Trip Length. Minimize vehicle-miles travelled by establishing a connective circulation network providing multiple, direct paths. See Chapter 5, Circulation.	Consistent: A portion of the “new” trips produced by the project are expected to begin and end entirely within the project site because the Morgan Ranch project is planned to have both residential and commercial land uses.

Guiding Policies	Policy Text	Consistency Determination
Policy 8.2-i	Provide Bicycle Facilities. Require minimum bike parking for multi-family residential and commercial development, and encourage provision of additional end-of-trip facilities.	Consistent: The project includes both Class II and Class III bicycle lanes and onsite areas for bike parking.
Policy 8.2-j	Minimize Parking. Encourage the provision of minimum parking required to support uses.	Consistent: The proposed project will comply with the Turlock General Plan for the required amount of parking spaces.
Policy 8.2-k	Support Alternative Fuel Vehicles. Provide incentives for the provision of priority parking for alternative fuel vehicles and electronic vehicle charging stations as individual project measures for new development	Consistent: Developers will be encouraged by the City to include electronic vehicle charging plug in areas.
<i>Land Use</i>		
Policy 8.2-l	Establish Land Use Pattern That Supports Trip Reduction. Establish a land-use pattern that enables alternatives to automobile use and reduces trip lengths, including increased residential density, transit-oriented and mixed-use development, neighborhood commercial areas, and pedestrian realm enhancements.	Consistent: The project included medium and high density residential units as well as commercial and office uses, and an onsite school.
Policy 8.2-m	Pedestrian-Oriented Site Design. Orient development to encourage pedestrian and transit accessibility. Strategies include locating buildings and primary entrances adjacent to public streets; placing parking at the rear of sites or in structures above retail; and providing clear and direct pedestrian paths across parking areas.	Consistent: The project will include pedestrian and bicycle pathways and lanes. Parking areas will be provided throughout the development.
<i>The Land Use and Economic Development, City Design, and Circulation elements outline detailed measures pertaining to these policies.</i>		
<i>Energy Efficiency and Conservation</i>		
Policy 8.2-n	Wastewater and Water System Efficiency. Maximize the efficiency of City-operated wastewater treatment, water treatment, pumping, and distribution equipment. This measure may be part of the GHG Emissions Reduction Plan described in 8.2-f.	Consistent: The project will be required to implement the City of Turlock’s Landscape Ordinance.
Policy 8.2-o	Outdoor Lighting. Establish outdoor lighting standards to minimize energy use while ensuring appropriate light levels. Standards could include:	Consistent: The project will comply with the City of Turlock’s requirements for lighting.
	<ul style="list-style-type: none"> <li>▪ Photocells or astronomical time switches;</li> <li>▪ Directional and shielded LED lights</li> <li>▪ Security lights with motion detectors;</li> </ul>	

Guiding Policies	Policy Text	Consistency Determination
	<ul style="list-style-type: none"> <li>▪ Prohibition against continuous all-night outdoor lighting unless required for security reasons.</li> </ul> <p><i>New outdoor lighting standards should apply to municipal operations, including traffic signals, as well as to new private development.</i></p>	
Policy 8.2-p	<p>Improve Energy Efficiency in Public Buildings. Prepare and implement a plan to increase energy efficiency in public buildings, as part of the GHG Emissions Reduction Plan described in 8.2-f. Measures may include but not be limited to the following:</p> <ul style="list-style-type: none"> <li>▪ Conduct energy audits for all municipal facilities;</li> <li>▪ Retrofit municipal facilities for energy efficiency where feasible and when remodeling or replacing components, including increased insulation, installing green or reflective roofs, installing automated lighting controls, and retrofitting heating and cooling systems.</li> <li>▪ Require that any newly constructed, purchased, or leased municipal space meet minimum standards, such as exceeding Title 24 energy efficiency by 20 percent;</li> <li>▪ Educate employees on energy conservation.</li> </ul>	Consistent: The project will require a 20% reduction in Title 24 requirements.
Policy 8.2-q	<p>Promote Energy Conservation Programs. Promote and support State and TID energy conservation programs for housing construction and rehabilitation, including energy audits, weatherization assistance, and energy rebates for energy-efficient appliances and lighting, ventilation, and other systems:</p> <ul style="list-style-type: none"> <li>▪ For participants in the Home Rehabilitation Loan program, provide information and technical support regarding available rebate and incentive programs (through TID and PG&amp;E) for energy efficient appliances and weatherization tools; and</li> <li>▪ Require Energy Star electrical appliances when replacing appliances in City-funded Home Rehabilitation projects.</li> </ul> <p><i>A sizable portion of the residential structures in Turlock were constructed before energy efficiency standards were established, and should be improved.</i></p>	
Policy 8.2-r	Encourage Greater Energy Efficiency in New Development. For new Master Plan Areas, seek to	Consistent: The project will require a 20% reduction in Title 24 requirements.

Guiding Policies	Policy Text	Consistency Determination
	<p>expedite permit processing for new buildings that meet or exceed the Tier 1 optional standards in the California Green Building Standards Code.</p> <p><i>Achievement of at least 20 percent greater energy efficiency than the Title 24 standards is among the Best Performance Standards (BPS) for Development Projects proposed by the Air District, for credit toward the assignment of “less than significant” environmental impact.</i></p> <p><i>See Section 6.4 for policies on solar orientation and other aspects of sustainable site planning.</i></p>	<p>The project will require Tier II during construction.</p>
Policy 8.2-s	<p>Require Energy Efficiency for Projects Receiving Public Assistance. Require that projects receiving assistance from the City of Turlock, including but not limited to infrastructure projects and affordable housing, include energy efficiency measures beyond the minimum standards of Title 24.</p>	<p>The project will require a 20% reduction in Title 24 requirements.</p>
<i>Clean Energy Production</i>		
Policy 8.2-t	<p>Encourage Solar Power Generation. Encourage the use of passive and active solar devices such as solar collectors, solar cells, and solar heating systems into the design of buildings and parking areas by participating in existing incentive programs and considering new incentives for Turlock property owners.</p>	<p>Consistent: The project will encourage rooftop solar.</p>
Policy 8.2-u	<p>Encourage Other Onsite Renewable Energy Systems. Encourage the installation of other renewable energy systems in new or existing development. Renewable power generation may count toward the Air District’s proposed BPS for projects with systems capable of generating at least 2.5 percent of their energy need.</p>	<p>Consistent: The project will encourage rooftop solar.</p>
Policy 8.2-v	<p>Methane Capture. Produce energy through methane capture at the Regional Water Quality Control Facility. Explore opportunities to enhance waste-to-energy generation if feasible.</p>	<p>Not Applicable: The project does not include methane capture.</p>
<i>Solid Waste</i>		
Policy 8.2-w	<p>Reduce Solid Waste. Maintain the City’s long-standing commitment to innovative solutions that reduce solid waste and increase diversion rates. Waste reduction and diversion can contribute significantly to reducing greenhouse gas emissions. Waste reduction.</p>	<p>Consistent: The project will be required to recycle 50% if solid waste.</p>

Guiding Policies	Policy Text	Consistency Determination
<i>See Section 3.3, Infrastructure for waste reduction and diversion policies.</i>		

Source: City of Turlock, 2012.

Note: Source of Project Consistency or Applicability: Quad Knopf.

In summary, the project would not obstruct attainment of any of the goals established under AB 32. The project would comply with all present and future regulatory measures developed in accordance with AB 32 and ARB’s Scoping Plan, and will incorporate a number of features that would minimize GHG emissions beyond existing regulatory requirements. Such features also are consistent with the California Air Pollution Control Officers Association paper and general guidance provided by the SJVAPCD.

It should be noted that, with regard to AB 32 and CARB’s Scoping Plan, reductions in GHG emissions need not be equal amongst all sectors (e.g., the 1990-based reduction levels apply on a statewide basis and are not independently required of every individual project, or sector for that matter). As stated earlier, the commercial and residential sector accounts for only approximately nine percent of GHG emissions; arguably the key means by which to meet the AB 32 and S-305 goals will be to target the transportation, industrial, and electricity production sectors, which combined create approximately 85 percent of California’s emissions. At the same time, the project reductions and applicable laws do result in a forecasted 29.8 percent reduction from business-as-usual levels, which not only shows compliance with SJVAPCD thresholds, but also promotion of AB 32 goals for 2020. Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; therefore it would be speculative to make a determination.

Accordingly, taking into account the proposed project’s emissions, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the proposed project furthers the State’s goals of reducing GHG emissions to 1990 levels by 2020 and does not obstruct its attainment.

**Conclusion:** The proposed project would not obstruct attainment of any of the goals established under AB 32. The project would comply with all present and future regulatory measures developed in accordance with AB 32 and ARB’s Scoping Plan. Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation is necessary.

**Impact #3.7.3 – Climate change effects on the project.**

This impact addresses the recent amendment to the CEQA Guidelines section 15126.2(a), which requires that an EIR analyze the significant effects of bringing development and people to the affected area. As revised, Section 15126.2 would provide that a lead agency should analyze the effects of bringing development to an area that is susceptible to hazards such as flooding and wildfire, both as such hazards currently exist or may occur in the future. Several limitations

apply to the analysis of future hazards, however. For example, such an analysis may not be relevant if the potential hazard would likely occur sometime after the projected life of the project (i.e., if sea-level projections only project changes 50 years in the future, a 5-year project may not be affected by such changes). Additionally, the degree of analysis should correspond to the probability of the potential hazard (CEQA Guidelines, Section 15143 [“. . . significant effects should be discussed with emphasis in proportion to their severity and probability of occurrence.”]). As discussed in the Physical Setting, climate change could result in the following environmental impacts in California:

- Reduced precipitation;
- Changes to precipitation and runoff patterns;
- Reduced snowfall (precipitation occurring as rain instead of snow);
- Earlier snowmelt;
- Decreased snowpack;
- Increased agricultural demand for water;
- Intrusion of seawater into coastal aquifers;
- Increased agricultural growing season;
- Increased growth rates of weeds, insect pests and pathogens;
- Inundation of low-lying coastal areas by sea level rise;
- Increased incidents and severity of wildfire events; and
- Expansion of the range and increased frequency of pest outbreaks.

Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-laying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location. Therefore, this analysis examines only the following potential impacts:

- Inundation of low-lying coastal areas by sea level rise;
- Increased incidents and severity of wildfire events; and
- Reduced water availability.

#### ***Rise in Sea Levels***

Climate change could result in sea level rises and increased flooding. Sea level rise is already affecting much of California’s coastal region, including the Southern California coast, the Central California open coast, and the San Francisco Bay and upper estuary. During the past century, sea levels along California’s coast have risen about 7 inches. The rate of sea level rise observed at the gauges along the California coast is similar to the estimate for global mean sea level. Sea levels are likely to increase by up to 35 inches by the year 2100, depending on the magnitude of climate warming. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

The project site is located more than 100 miles inland from the Pacific Ocean and is approximately 275 to 285 feet above mean sea level. Therefore, the proposed project would not be susceptible to flooding from sea level rise.

**Wildfires**

The project site is surrounded by undeveloped agricultural land, single-family residences, and light industrial uses. As such, wildland fire risks are extremely low. According to Cal Fire, the project site lies in an urbanized developed area outside of wildland fire hazard zones. Therefore, the proposed project would not be at risk of wildfires.

**Reduced Water Availability**

As noted previously, climate change may result in consequences such as a reduction in the quality and supply of water to California from the Sierra snowpack. If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies.

The City of Turlock has taken steps to reduce and conserve the amount of water used in the city with incorporation of Resolution No. 90-68 into the Turlock Municipal Code, Chapter 6-7 Water Conservation and Education.

The purpose and intent of the City Council in enacting this Chapter is to protect the health, safety, welfare and interest of the public, and of patrons of establishments regulated by this Chapter by requiring that the patrons, establishments and persons conserve and not waste water by requiring that such establishments and persons conform to the water conservation procedures set forth in this chapter.

In addition to the Resolution, as required by the California Water Code, the City of Turlock Department of Municipal Services also released the City of Turlock's 2010 Urban Water Management Plan in June of 2011.

The report describes the simulation of future groundwater conditions within the Turlock groundwater basin using a groundwater model. For a particular scenario of possible future water use and climatic conditions, the model was used to simulate the corresponding future groundwater levels. The groundwater model was developed and has been periodically updated by the Turlock Irrigation District since 1988. A future scenario was constructed for potential land and water-use conditions through 2036 and the model calculated the corresponding groundwater levels (City of Turlock 2011).

The City also has several other rules and regulations that help to conserve water such as the Model Water Efficient Landscape Ordinance. According to Section 490.1, the proposed project is subject to the ordinance under "new construction and rehabilitated landscapes for public agency projects and private development projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review".

The City of Turlock will provide domestic water services for the Plan Area. A 12-inch water line is located in Lander Avenue. A 10-inch water line is located in Glenwood Avenue from

Lander Avenue to approximately 400 feet east of 5<sup>th</sup> Street. Fire hydrants are located on the north side of Glenwood Avenue from Lander Avenue to 5<sup>th</sup> Street near each street intersection.

The Turlock Irrigation District (TID) provides irrigation water for agricultural purposes within the Plan Area and to other nearby properties outside the Master Plan area. Two irrigation lines currently run through the site. District 34A, known as the Casey, flows south to north from under State Highway 99 and continues in a northwesterly direction until eventually crossing under Glenwood Avenue.

It can be reasonably concluded that with the incorporation of mitigation measures from Section 3.3 Air Quality and compliance with regulation, the project would be consistent with strategies to reduce the effects of climate change impacts from reduced water availability.

**Conclusion:** The proposed project would not be subject to significant adverse effects as a result of global climate change. The impact is *less than significant*.

**Mitigation Measures:** No mitigation is necessary.

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## **3.8 Hazards and Hazardous Materials**

### **3.8.1 INTRODUCTION**

This section evaluates potential impacts related to hazards and hazardous substances and/or waste contamination resulting from development of the proposed project. Descriptions and analysis in this section are based on information from the California Department of Toxic Substances Control (DTSC), United States Environmental Protection Agency (U.S. EPA), the Turlock General Plan, and site reconnaissance. Analysis of potential airport-related risks was conducted by Mead & Hunt (see Appendix F).

### **3.8.2 ENVIRONMENTAL SETTING**

Hazardous materials, as defined by the California Code of Regulations, are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when handled, disposed, or otherwise managed improperly. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic – causes human health effects;
- Ignitable – has the ability to burn;
- Corrosive – causes severe burns or damage to materials; and
- Reactive – causes explosions or generates toxic gases.

A hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. The criteria that define a material as hazardous also define a waste as hazardous. If handled, disposed, or otherwise handled improperly, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust. Soil and groundwater having concentrations of hazardous constituents higher than specific regulatory levels must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer. The California Code of Regulations, Title 22, Sections 66261.20-24 contains technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

#### ***Project Site***

The project site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 [DTSC's Hazardous Waste and Substances Site List (Cortese List)].

The nearest hazardous materials site is Valley Wood Preserving, Inc., located at 2237 South Golden State Boulevard. This site is a former 14.4-acre wood-preserving facility and is on the U.S. EPA's Superfund National Priorities List. From 1973 through 1979, wood preserving activities were conducted at the site. Wood lumber was pressure-treated in an above ground metal cylinder with an aqueous chromate copper arsenate solution. This solution was mixed in an above ground tank near the site boundary and stored in three adjacent above ground tanks. Treated lumber was pulled from the cylinder and allowed to drip-dry. The area around the treatment cylinders and storage tanks were unpaved during the first two years of operation.

Some areas were paved from 1975 to 1978 as the plant increased production. Asphalt paving now covers areas where treated wood was once stored on the ground. The site is fenced and access is controlled to protect the public from contact with contaminated soil. As required by Record of Decision for the site, a Land Use Covenant specifying the prohibitions and restrictions was recorded on June 22, 2007 by the Stanislaus County Recorder's office. The document number is DOC-2007-0082718-00. Current human exposures at this site are under control and contaminated ground water migration is also under control. Valley Wood Preserving is located approximately 1,000 feet from the eastern boundary of the Morgan Ranch Master Plan area.

There are currently agricultural, residential, and commercial uses within the project area. Some of the agricultural land is fallow, some has been used for row crops, and one area has an orchard. Within the project area, there are two occupied single-family residences fronting on Golf Road. There are ten, occupied single-family residences and one occupied mobile home fronting Glenwood Avenue. The majority of the project site is currently used for agricultural purposes. Approximately 2.5 acres of the site is occupied by commercial uses that include a gas service station and car wash facility. Formal Phase I and Phase II Environmental Site Assessments have not been conducted for the project site.

### **COMMON HAZARDOUS MATERIALS**

Below are descriptions of common hazardous materials that may be found on developed and agricultural sites. The likelihood of encountering materials is evaluated, based onsite reconnaissance observations by Quad Knopf and record searches.

#### ***Asbestos***

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties, such as thermal insulation, chemical and thermal stability, and high tensile strength. Asbestos is commonly used as an acoustic insulator, thermal insulation, fireproofing, and in other building materials. Asbestos is made up of microscopic bundles of fibers that may become airborne when asbestos-containing materials are damaged or disturbed. When these fibers get into the air, they may be inhaled into the lungs, where they can cause significant health problems. The California Occupational Health and Safety Administration (CalOSHA) defines asbestos-containing construction materials as any material that contains more than 0.1 percent asbestos by weight.

As the project is built out, structures onsite would be scheduled for demolition. The project site contains structures dating back to the 1960s. Because of the age of the structures onsite there is a potential for asbestos-containing material (ACM) to be present. Prior to demolition, an Asbestos Survey will need to be completed pursuant to U.S. EPA, the Asbestos Hazard Emergency Response Act (AHERA), and National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations.

### **Lead**

Lead is a highly toxic metal that was used until the late 1970s in a number of products, most notably in paint. Lead may cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Primary sources of lead exposure are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil. Both the U.S. EPA and the California Department of Health Services define lead paint as containing a minimum of 0.5 percent by weight. Lead-containing waste materials with a concentration greater than 0.1 percent are considered hazardous waste by California law.

Because of the age of the structures onsite, there is the potential for lead-based paints (LBP) to be present. Prior to demolition, a Lead-Based Paint Survey will need to be completed in accordance with the U.S. EPA and Occupational Safety and Health Administration (OSHA) guidelines.

Occupational exposure to lead is regulated by both the federal OSHA (29 CFR 1926.62) and the California OSHA (Title 8, General Industry Safety Order (GISO) 5198 and Construction Safety Order (CSO) 1532.1). Based on federal and California OSHA standards, when disturbing paints that contain lead (in any detectable amount), OSHA and CalOSHA regulations should be followed.

### **Polychlorinated Biphenyls (PCBs)**

Polychlorinated biphenyls (PCBs) are mixtures of synthetic chemicals with similar chemical structures. PCBs can range from oily liquids to waxy solids. Because of their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications, including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other applications. More than 1.5 billion pounds of PCBs were manufactured in the United States prior to cessation of production in 1977.

Electricity is provided to the site by the Turlock Irrigation District (TID) via pole-mounted transformers located across East Glenwood Avenue adjacent to the site. These transformers were not labeled with regard to PCB content. No staining or evidence of releases was observed associated with the transformers. As the owner of the transformers, TID would be responsible for any inspections, testing, reporting and release response.

Before EPA banned the manufacture of PCBs in 1978, PCBs were commonly incorporated in the manufacture of fluorescent light ballasts. Based on the age of the buildings on the project site, there may be fluorescent light ballasts in the residences that may have PCB-containing capacitors. Proper disposal of fluorescent light ballasts will be required prior to demolition. Arrangements may be made with various PCB transporters or PCB commercial storers for shipment of ballast, PCB-soiled items, or fluorescent fixtures containing PCBs to an EPA-approved chemical waste processing site.

Alternatively, household hazardous waste collection centers can accommodate fluorescent light ballasts containing PCBs. Stanislaus County's permanent hazardous waste collection center located at County Center IV, 1716 Morgan Road, Modesto, California can accommodate the hazardous waste.

### ***Mercury***

Mercury is a naturally occurring element that is found in air, water, and soil that has traditionally been used to make products such as fluorescent lamps, switches, and thermometers. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs, and immune system of people of all ages. Scientific studies have shown that high levels of mercury in the bloodstream of unborn babies and young children may harm the developing nervous system, making a child less able to think and learn.

As the project is built out, structures onsite would be scheduled for demolition. Based on the age of the buildings on the project site, there may be mercury-containing fluorescent lights and switches. Therefore, building materials containing mercury may be an environmental concern at the project site. Proper disposal of potential mercury-containing building materials will be required prior to demolition.

### ***Chlorofluorocarbons (CFCs)***

CFCs were developed in the early 1930s and are used in a variety of industrial, commercial, and household applications. These substances are non-toxic, non-flammable, and non-reactive with other chemical compounds. These desirable safety characteristics, along with their stable thermodynamic properties, make them ideal for many applications—as coolants for commercial and home refrigeration units, aerosol propellants, electronic cleaning solvents, and blowing agents. CFCs contribute to depletion of the ozone layer and, consequently, to skin cancer and cataracts. CFCs also are greenhouse gases and contribute to global climate change.

As the project is built out, structures onsite would be scheduled for demolition. Based on the age of the buildings on the project site, there may be CFC-containing equipment onsite; this would be a potential environmental concern. Proper disposal of CFC-containing equipment will be required prior to demolition.

### ***Radon***

Radon is a carcinogenic, radioactive gas resulting from the natural breakdown of uranium in soil, rock, and water. Radon gas enters a building through cracks in foundations and walls. Once inside the building, radon decay products may become attached to dust particles and inhaled, or the decayed radioactive particles alone may be inhaled and cause damage to lung tissue. The U.S. EPA has established a safe radon exposure threshold of 4 picoCuries per liter of air (pCi/l).

The California Department of Health Services indicates that 11 indoor radon samples taken in the 95380 and 95382 (Turlock area zip codes) yielded no concentrations above 4pCi/l.

## **OTHER POTENTIAL HAZARDS**

### ***Turlock Irrigation District Pipelines***

The Turlock Irrigation District (TID) operates several facilities within or in close proximity to the Master Plan area. District 34A, known as the Casey, runs south to north from under SR 99 and continues in a northwesterly direction until eventually crossing under Glenwood Avenue. The pipeline continues from there to serve other downstream parcels. This existing facility is comprised of 42-inch diameter cast-in-place pipe and open ditch. District 247B, known as the Goldberry-Conyers, runs south to north from under SR 99 for approximately 400 feet before turning east to continue for about 350 feet. From there, the pipeline runs northeasterly for roughly 400 feet before turning north to cross under Glenwood Avenue. This existing facility is comprised of 36-inch diameter cast-in-place pipe and appurtenances. TID also operates a drainage pump and well known as Pump 112 approximately 600 feet west of Golf Road, on the south side of Glenwood Avenue. The pump discharges into a structure box located to the east on the Goldberry-Conyers pipeline, for the purpose of controlling groundwater elevations in the area.

### ***High Voltage Power Lines***

High-voltage power lines emit electromagnetic fields (EMFs), which have been alleged to be a cause of cancer. However, scientific research has never conclusively established a link between EMFs and cancer.

TID overhead power lines are located on the south side of East Glenwood Avenue and on the west side of Golf Road; these lines are rated 12-kilovolt (kv) and 69 kv, respectively. These power lines are not considered high-voltage power lines.

### ***Hydrocarbons/Aboveground and Underground Storage Tanks***

Petroleum hydrocarbons are derived from crude oil, which is refined into various petroleum products such as diesel, gasoline, kerosene, lubricants, and heavy fuel oils. Hydrocarbons constituents include benzene, N-heptane, and toluene, and generate health effects such as cancer, leukemia, asthmatic bronchitis, kidney damage, and eye irritation. Hydrocarbons are stored in Above Ground Storage Tanks (ASTs) and Underground Storage Tanks (USTs). Leaking ASTs and USTs can result in contamination of groundwater sources or fire and explosion.

The Chevron Gas Station located at 100 Glenwood Avenue, Turlock, California on the project site was the location of a Leaking Underground Storage Tank (LUST) cleanup site. Corrective action was taken to address the groundwater and soil contaminants from petroleum releases. The case was closed on April 20, 2011. No further action related to the petroleum release at the site is required. The Chevron Gas Station currently has a permitted UST through the Stanislaus County Department of Environmental Resources (DER), Hazardous Materials Division. This Department conducts frequent inspections of USTs to protect public health, the environment and groundwater.

The Turlock Barrel Inn located at 2219 Lander Avenue, Turlock, California, approximately 650 feet south of the Master Plan's western boundary was the location of another LUST cleanup site. Corrective action was taken to address the groundwater contaminants from petroleum releases. The case was closed on September 28, 2011. No further action related to the petroleum release at the site is required. The Turlock Barrel Inn also has a permitted UST through the Stanislaus County Department of Environmental Resources (DER), Hazardous Materials Division.

### ***Agricultural Chemicals***

Based on the current and historic use of the Master Plan area as cultivated farmland, agricultural chemicals such as pesticides, herbicides and fertilizer would historically have been used on the site.

### ***Aviation***

The proposed Project is immediately north to northeast of the Turlock Airpark. The Airpark is a private airport, with a single runway that is 2,075 feet long and 60 feet wide with a load bearing capacity of 4,000 pounds for single wheel aircraft. The Airpark averages fewer than 10 aircraft operations per week and has 3 single engine aircraft based on the field. The runway is oriented north-northwest to south-southeast. The majority of flights take off and land from south to north, with flight traffic patterns to the north, south and west of the airport.

The California Division of Aeronautics classifies the Airpark as a private use airport. By definition, private use airports are to be used only by personal aircraft and occasional invited guests (transient aircraft). Because Turlock Airpark is a private use airport, it is not required to be included in a county's airport land use plan. However, Stanislaus County has chosen to adopt a compatibility plan for the Airpark.

The owner of Turlock Airpark has stated that three general aviation, single-engine aircraft are based at the Airpark. Transient flights average approximately four operations per month. Additionally, one helicopter used for crop dusting is based at the field and operates when needed, but does not fill up with agricultural spray at the Airpark. No fuel facilities exist on site to service aircraft.

An ultralight fixed base operator with approximately 20 ultralights is also located at the Airpark. The ultralights average about 12 operations per week and also approach from the south, and depart to the north. The ultralight operation count is not figured into the total count for Airpark. Ultralights are differentiated from traditional aircraft due to the fact that the Federal Aviation Administration (FAA) does not classify ultralights as general aviation aircraft. Ultralights are not subject to federal aircraft certification and maintenance standards. The FAA classifies ultralights in Advisory Circular 103-7 as, "aircraft of simple design and intended exclusively for pleasure and personal use. These aircraft (airplanes, gliders, rotorcraft, manned free balloons, etc.) would be unpowered or powered by a single, naturally aspirated engine having a certificated takeoff rating of 200 horsepower or less, would have a maximum weight of 2,500 pounds or less, and would have unpressurized cabins."

### 3.8.3 REGULATORY SETTING

#### *Federal*

#### **U.S. ENVIRONMENTAL PROTECTION AGENCY**

The U.S. EPA leads the nation's environmental science, research, education and assessment efforts. The U.S. EPA's mission is to protect human health and to safeguard the natural environment, related to air, water, and land. The U.S. EPA works closely with other federal agencies, state and local governments, and Indian tribes to develop and enforce regulations under existing environmental laws. The U.S. EPA is primarily responsible for researching and setting national standards for a variety of environmental programs and delegates to states and tribes responsibility for issuing permits, and monitoring and enforcing compliance. When national standards are not met, the U.S. EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality. The U.S. EPA also works with industries and all levels of government in a wide variety of voluntary pollution prevention programs and energy conservation efforts.

EPA Region 9 has jurisdiction over Turlock and the southwestern United States (Arizona, California, Nevada, and Hawaii).

EPA programs related to hazardous materials include:

- Community Right-to-Know Information;
- Pesticide Management;
- Toxic Release Inventory;
- Brownfields (CalSites Database);
- Cleanup Technologies;
- Compliance Assistance;
- Emergency Response;
- Hazardous Waste; and
- Oil Spills

#### **RESOURCE CONSERVATION AND RECOVERY ACT 42 U.S.C. S/S 6901 ET SEQ. (1976)**

Under the Resource Conservation and Recovery Act (RCRA), individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as the federal RCRA requirements. The U.S. Environmental Protection Agency (EPA) must approve state programs intended to implement federal regulations. In California, the California Environmental Protection Agency (Cal EPA) and the Department of Toxic Substances Control (DTSC), a department within Cal EPA, regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. EPA approved California's RCRA program, called the Hazardous Waste Control Law (HWCL), in 1992. DTSC has primary hazardous material regulatory responsibility, but can delegate enforcement responsibilities to

local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the HWCL.

The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe the management of hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in ordinary landfills. A hazardous waste generator must, for a minimum of three years, retain hazardous waste manifests. Hazardous waste manifests provide a description of the waste, its intended destination, and regulatory information about the waste. A copy of each manifest must be filed with the state. The generator must match copies of hazardous waste manifests with receipts from treatment, storage, and disposal facilities.

### **COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA)**

The Comprehensive Environmental Response, Compensation, and Liability Act and associated Superfund Amendments provide EPA with the authority to identify hazardous sites, to require site remediation, and to recover the costs of site remediation from polluters. California has enacted similar laws intended to supplement the federal program. The DTSC is primarily responsible for implementing California's Superfund Law.

### **TOXIC SUBSTANCES CONTROL ACT**

The Toxic Substances Control Act requires the control of new and existing chemical substances that may pose an unreasonable risk to public health or the environment. The legislation establishes provisions for testing of chemical substances, regulation of hazardous chemical substances, manufacture and processing notices, management of imminent hazards, and reporting and recordkeeping requirements.

### **FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT**

The federal Insecticide, Fungicide, and Rodenticide Act establishes procedures for regulating the use and sale of pesticides to protect human health and the environment, and it provides federal control of pesticide distribution, sale, and use. The legislation governs the registration and labeling of pesticides and enforcement against banned and unregistered products.

### **U.S. DEPARTMENT OF TRANSPORTATION**

The Hazardous Materials Transportation Act of 1974, as amended, is the basic statute regulating hazardous materials transportation in the United States. This law gives the U.S. Department of Transportation and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials.

State agencies are authorized to designate highways for the transport of hazardous materials. Where highways have not been designated, hazardous materials must be transported on routes that do not go through or near heavily populated areas.

**State**

**CALIFORNIA STATE AERONAUTICS ACT**

The State Aeronautics Act, Public Utilities Code (PUC) Section 21001, et seq. is the foundation for the California Department of Transportation’s Division of Aeronautics aviation policies. The Division issues permits for and annually inspects hospital heliports and public-use airports, makes recommendations regarding proposed school sites within 2 miles of an airport runway, and authorizes helicopter-landing sites at/near schools. Aviation system planning provides for the integration of aviation into transportation system planning on a regional, statewide, and national basis. The Division of Aeronautics administers noise regulation and land use planning laws that foster compatible land use around airports and encourages environmental mitigation measures to lessen noise, air pollution, and other impacts caused by aviation. The Division of Aeronautics also provides grants and loans for safety, maintenance, and capital improvement projects at airports.

**CALIFORNIA HEALTH AND SAFETY CODE**

The California Environmental Protection Agency has established rules governing the use of hazardous materials and the management of hazardous wastes. California Health and Safety Code Sections 25531, et seq. incorporate the requirements of Superfund Amendments and Reauthorization Act and the Clean Air Act as they pertain to hazardous materials. Health and Safety Code Section 25534 directs facility owners storing or handling acutely hazardous materials in reportable quantities to develop a Risk Management Plan (RMP). The RMP must be submitted to the appropriate local authorities, the designated local administering agency, and the EPA for review and approval.

**CALIFORNIA CODE OF REGULATIONS, TITLE 22, §66261.20-24**

Soils having concentrations of contaminants higher than certain acceptable levels must be handled and disposed of as hazardous waste when excavated. The California Code of Regulations, Title 22, §66261.20-24 contains technical descriptions of characteristics that would cause a soil to be classified as a hazardous waste.

**CALIFORNIA HAZARDOUS MATERIALS RELEASE RESPONSE PLANS AND INVENTORY LAW OF 1985 (BUSINESS PLAN ACT)**

The Business Plan Act requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored onsite;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher course.

## **HAZARDOUS MATERIALS TRANSPORTATION REGULATIONS (26 CCR)**

The State of California has adopted U.S. Department of Transportation (DOT) regulations for the intrastate movement of hazardous materials. State regulations are contained in 26 CCR. In addition, the State of California regulates the transportation of hazardous waste originating in the state and passing through the state (26 CCR). Both regulatory programs apply in California. The two State agencies with primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans).

## **CALIFORNIA VEHICLE CODE §32000**

Common carriers are licensed by the CHP, pursuant to California Vehicle Code §32000. This section requires the licensing of every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time, and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards.

## **CALIFORNIA EMERGENCY SERVICES ACT**

Pursuant to the California Emergency Services Act, the state has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local governmental agencies and private persons. Response to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES). The OES coordinates the responses of other agencies, including Cal EPA, CHP, the California Department of Fish and Game (CDFG), the Regional Water Quality Control Boards (RWQCB), the local Air Pollution Control Districts, and local agencies.

## **CALIFORNIA ACCIDENTAL RELEASE PREVENTION PROGRAM**

California Accidental Release Prevention Program (CalARP) regulations became effective January 1, 1997, replacing the California Risk Management and Prevention Program. CalARP was created to prevent the accidental release of regulated substances. It covers businesses that store or handle certain volumes of regulated substances at their facilities. A list of regulated substances is found in §2770.5 of the CalARP regulations. If a business has more than the listed threshold quantity of a substance, an accidental release prevention program must be implemented and a risk management plan may be required. The California Office of Emergency Services is responsible for implementing the provisions of CalARP.

## **PROTECTION OF UNDERGROUND INFRASTRUCTURE [CALIFORNIA GOVERNMENT CODE, SECTION 4216]**

Requires that an excavator must contact a regional notification center (i.e., Underground Service Alert [URS]) at least 2 days prior to excavation of any subsurface installations. An Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of the excavation. Representatives of the utilities are required to mark the specific location of their

facilities within the work area prior to the start of excavation. The construction contractor is required to probe and expose the underground facilities by hand prior to using power equipment.

### **CEQA AND THE CORTESE LIST**

The Cortese List (Hazardous Waste and Substances Site List) is a planning document used by the state, local agencies, and developers to comply with CEQA requirements to consider Government Code Section 5962.5 in evaluating proposed development projects. Section 65962.5 states that:

The list should contain all hazardous waste facilities subject to corrective action , all hazardous waste property or border zone property designations, all information received on hazardous waste disposals on public land, all hazardous substance release sites listed pursuant to Government Code Section 25356, and all sites that were included in the former Abandonment Site Assessment Program.

### **CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY (CAL EPA)**

Government Code Section 65962.5 requires the California Environmental Protection Agency (Cal EPA) to develop a Cortese List at least annually. The Department of Toxic Substances Control is responsible for a portion of the information on the list, and other local and state government agencies are required to provide additional information. Cal EPA operates the Air Resources Board, the Department of Pesticide Regulation, Department of Toxic Substances Control, Integrated Waste Management Board, Office of Environmental Health Hazard Assessment, and the State Water Resources Control Board. The function of each of these six offices is discussed below:

**California Air Resources Board (ARB):** To promote and protect public health, welfare and ecological resources through the effective and efficient reduction of air pollutants in recognition and consideration of the effects on the economy of the State.

**Department of Pesticide Regulation (DPR):** Regulates all aspects of pesticide sales and use to protect the public health and the environment for the purpose of evaluating and mitigating impacts of pesticide use, maintaining the safety of the pesticide workplace, ensuring product effectiveness, and encouraging the development and use of reduced risk pest control practices.

**Department of Toxic Substances Control (DTSC):** The Department's mission is to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention. DTSC protects residents from exposures to hazardous wastes. DTSC operates programs to:

- Deal with the aftermath of improper hazardous waste management by overseeing site cleanups;
- Prevent releases of hazardous waste by ensuring that those who generate, handle, transport, store and dispose of wastes do so properly;

- Take enforcement actions against those who fail to manage hazardous wastes appropriately;
- Explore and promote means of preventing pollution, and encourage reuse and recycling; and
- Evaluate soil, water and air samples taken at sites, and develop new analytical methods.

**Department of Resources Recycling and Recovery (CalRecycle):** Protects the public health and safety and the environment through waste prevention, waste diversion, and safe waste processing and disposal. The IWMB is responsible for managing California’s solid waste stream. The Board is helping California divert its waste from landfills by:

- Developing waste reduction programs;
- Providing public education and outreach;
- Assisting local governments and businesses;
- Fostering market development for recyclable materials;
- Encouraging used oil recycling;
- Regulating waste management facilities; and
- Cleaning up abandoned and illegal dump sites.

**Office of Environmental Health Hazard Assessment (OEHHA):** OEHHA is responsible for developing and providing risk managers in state and local government agencies with toxicological and medical information relevant to decisions involving public health. OEHHA also works with federal agencies, the scientific community, industry and the general public on issues of environmental as well as public health. Specific examples of OEHHA responsibilities that directly relate to Fresno include:

- Developing health-protective exposure standards for air, water, and land to recommend to regulatory agencies, including ambient air quality standards for the Air Resources Board and drinking water chemical contaminant standards for the Department of Health Services;
- Assessing health risks to the public from air pollution, pesticide and other chemical contamination of food, seafood, drinking water, and consumer products; and
- Providing guidance to local health departments, environmental departments, and other agencies with specific public health problems, including appropriate actions to take in emergencies that may involve chemicals.

**State Water Resources Control Board (SWRCB):** Preserves and enhances the quality of California’s water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. The SRWQCB maintains the Leaking Underground Storage Tank Information System (LUTIS) Database, which contains information on registered leaking underground storage tanks (LUSTs) in the State.

**California Occupational Safety and Health Agency (CalOSHA):** CalOSHA sets and enforces standards that insure safe and healthy working conditions for California’s workers. The Division of Occupational Safety & Health is charged with the jurisdiction and supervision over workplaces in California that are not under federal jurisdiction. CalOSHA regulates issues

involving unsafe workplace conditions, worker exposure to chemicals, illness due to workplace exposure, or improper training.

**State Regulatory Programs Division (SRPD):** The SRPD oversees the technical implementation of the State’s Unified Program; a consolidation of six environmental programs at the local level, and conducts reviews of Unified Program agencies to ensure their programs are consistent statewide, conform to standards, and deliver quality environmental protection at the local level. SRPD also carries out the State’s hazardous waste recycling and resource recovery program designed to facilitate recycling and reuse of hazardous waste. SRPD conducts a corrective action oversight program that assures any releases of hazardous constituents at generator facilities that conduct onsite treatment of hazardous waste are safely and effectively remediated, and oversees the hazardous waste generator and onsite waste treatment surveillance and enforcement program carried out by local Unified Programs.

**California Department of Transportation (Caltrans) and California Highway Patrol:** The California Vehicle Code Section 31303 requires that hazardous materials be transported via routes with the least overall travel time, and prohibits the transportation of hazardous materials through residential neighborhoods. In California, the California Highway Patrol (CHP) is authorized to designate and enforce route restrictions for the transportation of hazardous materials. To operate in California, all hazardous waste transporters must be registered with the Department of Toxic Substances Control (DTSC). Unless specifically exempted, hazardous waste transporters must comply with the California Highway Patrol Regulations, the California State Fire Marshal Regulations, and the United States Department of Transportation Regulations. In addition, hazardous waste transporters must comply with Division 20, Chapter 6.5, Article 6 and 13 of the California Health and Safety Code, and the Title 22, Division 4.5, Chapter 13 of the California Code of Regulations, both of which are administered by DTSC.

**Central Valley Regional Water Quality Control Board (RWQCB):** There are nine Regional Water Quality Control Boards (RWQCBs) throughout the State. The Central Valley RWQCB has jurisdiction over the City of Manteca, with offices in Stockton. Individual RWQCBs function as the lead agencies responsible for identifying, monitoring, and cleaning up LUSTs. Storage of hazardous materials in USTs is regulated by the State Water Resources Control Board (SWRCB), which oversees the nine RWQCBs.

### **Local**

#### **SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT**

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has jurisdiction over the City of Turlock and deals with pollutants, including hazardous air pollutants such as asbestos. Information on the SJVAPCD and air quality is provided in Section 3.3, Air Quality of this Draft EIR.

## STANISLAUS COUNTY

### ***Household Hazardous Waste Element and Countywide Integrated Waste Management Plan***

In 1991, Government Code Section 65583.1 became effective, requiring that each city and county prepare a separate Household Hazardous Waste Element (HHWE). The HHWE identifies a program for the safe collection, recycling, treatment and disposal of hazardous wastes that should be separated from the solid waste stream and are generated by households. Funding mechanisms to support the program and a public information program are also included.

1. The Turlock HHWE was adopted by the City Council in 1994, approved by the Countywide Integrated Waste Management Board (CIWMB) and incorporated into the Countywide Integrated Waste Management Plan (CIWMP), comprised of the Countywide Siting Element, the Countywide Summary Plan and the SRREs and HHWEs for the County and for each city in the County. The CIWMP in its entirety is reviewed every five years; the most recent completed review took place in 2011.
2. Stanislaus County's Environmental Resources Division operates one permanent hazardous waste collection facility, on Morgan Road in Modesto, and schedules periodic mobile collections. The permanent collection center accepts most types of household hazardous waste, including batteries and electronics; mercury-containing items such as thermostats; household and landscape chemicals; paints and solvents; and motor oil.

### ***Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan***

The City of Turlock adopted the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan, updated in 2010. The plan identifies measures to reduce the impacts of natural and manmade hazards and to facilitate the recovery and repair of structures if damage should occur from hazardous events. Adoption of the plan ensures that Turlock is eligible for certain federal and State funds for disaster recovery in case of such an event.

### ***Stanislaus County Department of Environmental Resources***

The Stanislaus County Department of Environmental Resources, Hazardous Materials Program is the local Certified Unified Program Agency (CUPA). A local CUPA is responsible for administering/overseeing compliance with the following programs, as required by state and federal regulations:

- Hazardous Materials Release Response Plans and Inventories (Area Plans);
- California Accidental Release Prevention (CalARP) Program;
- Underground Storage Tank Program (UST);
- Aboveground Petroleum Storage Act Requirements for Spill Prevention, Control and Countermeasure (SPCC) Plans (AST);
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs; and

- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

Businesses, such as photographic processing, chrome plating or service stations, which generate small hazardous waste or require underground storage of hazardous materials, require a permit from the department.

### ***Stanislaus County Office of Emergency Services***

The Office of Emergency Services coordinates with Stanislaus County's nine cities to maintain Emergency Operations Plans (EOP's), and ensuring that they comply with National Incident Management System (NIMS) requirements. The Office also works with community-based groups on preparedness and emergency management.

OES updated the County's Multi-Jurisdictional Hazard Mitigation Plan, in 2010. The Plan identifies disaster risks and identifies strategies for minimizing damage. The Plan aims to be a resource for decision-making and community preparedness. The current Plan was approved by FEMA in 2011

### ***Stanislaus County Airport Land Use Commission***

Stanislaus County Airport Land Use Commission (ALUC) has created a plan with recommendations for the area immediately surrounding the Airpark. The ALUC Plan establishes an area, entitled Area 3, which overlaps a larger portion of Morgan Ranch than any of the State Handbook Zones (Figure 2). According to the ALUC Plan, Area 3 is an, "area under the approach and take-off extensions and transitional surfaces as defined by the flight paths in use at the airport and federal regulations. This area is primarily concerned with safety." With the exception of rural residential uses, (10 acres or more) all residential land uses inside Area 3 are prohibited in the ALUC Plan. Area 3 overlaps portions of Phase I of Morgan Ranch where Low Density and High Density Residential land uses have been proposed.

In addition to being restrictive on residential uses within Area 3, the ALUC Plan also limits many commercial uses within the same space. The ALUC breaks down the criteria for Area 3 into types of general commercial uses, not by land use intensity. Many commercial uses are prohibited by the plan, specifically gas stations, hotels, shopping centers, theaters, and other areas that may draw a high concentration of people. Some commercial activities may be conditionally approved based on their function, such as office buildings and retail stores, and other specific uses such as auto parking, aircraft sales and repair, and truck terminals are compatible according to the ALUC Plan.

## **CITY OF TURLOCK GENERAL PLAN**

The following City of Turlock General Plan policies have been adopted relative to the regulation and management of hazards and hazardous materials:

**Chapter 10 – Safety**

**Policy 10.1-a Protect Lives and Property.** Prevent loss of lives, injury, illness, and property damage due to hazardous materials and wastes.

**Policy 10.1-b Protect Natural Resources.** Protect soils, surface water, and groundwater from contamination from hazardous materials.

**Policy 10.1-d Incorporate Safety Considerations Into Land Use Policies.** Coordinate land use policies with concerns about potential hazards.

**Policy 10.1-k Locate Buildings with High Public-Occupancy at Safe Distance from Railroad and Highway.** To the extent feasible – particularly schools, hospitals, civic and institutional uses at least 100 feet from main railroad alignments and the highway, to minimize risks to life and property in the event of a hazardous cargo accident.

**Policy 10.4-a Protect from Hazards.** Continue to protect people and property from natural and manmade hazards.

**Policy 10.4-m Maintain Appropriate Urban Design Standards.** Roadways shall be developed in accordance with General Plan standards contained in Chapter 5 of the General Plan. Deviations from roadway standards shall not be granted unless it is determined by the Fire Department and the City Engineer that it shall have no impact on the delivery of fire services to the affected area.

**Policy 10.4-aa Maintain Evacuation Routes.** Ensure that major access and evacuation corridors are available and unobstructed in case of major emergency or disaster.

The project’s consistency with the General Plan policies is assessed in Chapter 3, Section 3.10 Land Use and Planning.

**CITY OF TURLOCK MUNICIPAL CODE**

***Section 8-6 Uniform Code for the Repair, Vacation, or Demolition of Dangerous Buildings***

The City of Turlock has adopted the “Uniform Code for the Abatement of Dangerous Buildings” published by the International Conference of Building Officials, as adopted and amended by the California Building Standards Commission in the California Building Standards Code; Title 24 of the California Code of Regulations.

***Zoning Ordinance Section 9-2-115 Recycling and Solid Waste Disposal Regulations***

This section of the zoning ordinance defines the City’s policies regarding recycling and solid waste disposal, including adequate locations and appropriate surrounding land uses for such facilities.

### **3.8.4 METHODOLOGY**

The analysis in this section is based on information from the California Department of Toxic Substances Control (DTSC), United States Environmental Protection Agency (U.S. EPA), the Turlock General Plan, and site reconnaissance.

### **3.8.5 IMPACT EVALUATION CRITERIA**

According to the CEQA Guidelines, a project will normally have significant adverse impacts associated with hazards and hazardous materials if the project would:

- 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 or risk of explosion.
- 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 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) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.
- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. (See Chapter 7, Effects Found Not To Be Significant)

### 3.8.6 IMPACT ANALYSIS

#### **Impact #3.8.1 – Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions.**

This impact will evaluate the Morgan Ranch Master Plan’s potential to create hazards caused by the routine transport, use or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

##### **Short-Term Impacts**

Project construction activity may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, state, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials. In addition, the project would be required to comply with the National Pollutant Discharge Elimination System (NPDES) permit program through the submission and implementation of a Stormwater Pollution Prevention Plan during construction activities to prevent contaminated runoff from leaving the project site. As described in Section 3.9.6, implementation of Best Management Practices will ensure that construction related storm water runoff water quality impacts are minimized. Therefore, no significant impacts would occur during construction activities.

Because of the age of the onsite structures, there is the potential for exposure to hazardous waste containing building materials and equipment, which if disrupted can become a hazard. As further discussed in Impact 3.8.3, mitigation is proposed to require the proper removal and disposal of these hazardous materials in accordance with federal and State law. The implementation of this mitigation would reduce impacts to a level of *less than significant*.

##### **Long-Term Impacts**

The proposed project includes residential, commercial, park, and school uses. Typically, these land uses do not generate, store, or dispose of significant quantities of hazardous materials. Small quantities of hazardous materials would be used onsite, including cleaning solvents (e.g., degreasers, paint thinners, and aerosol propellants), paints (both latex- and oil-based), acids and bases (such as many cleaners), disinfectants, and fertilizers. However, these substances would not be used in substantial quantities and would not create a significant hazard to the public or the environment. General landscaping and maintenance will include the use of pest control, herbicide, and janitorial products such as commercial cleaners. The potential risks posed by the use and storage of these hazardous materials are primarily limited to the immediate vicinity of the materials. Transport of these materials would be performed by commercial vendors who would be required to comply with various federal and state laws regarding hazardous materials transportation. As such, these materials are not expected to expose human health or the environment to undue risks associated with their use.

**Conclusion:** In summary, the proposed project would not create a significant hazard to the public or the environment from routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions. Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.8.2 – Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.**

The project site is served by the Turlock Unified School District. The nearest existing school to the project site is Cunningham Elementary and is located 0.25 miles northwest of the Master Plan’s western boundary (Lander Avenue). Other schools in the vicinity include Valley Oak School, 0.30 miles northwest of the Master Plan’s western boundary. Additionally, the project has designated approximately 11.1 acres for future use as an elementary school.

The California Department of Education School Site Selection and Approval Guide does not identify commercial retail land uses or residential land uses as land uses or facilities of concern as it relates to siting schools. Thus, it can be concluded that the proposed project would not be incompatible with the elementary school. Furthermore, as discussed in Section 3.3, Air Quality, the proposed project would not emit air pollutants at levels that would exceed health and safety exposure thresholds. In addition, as discussed in Impact 3.8.1, the proposed project would not be classified as a large quantity user of hazardous materials or engage in potentially hazardous activities (e.g., bulk material storage, chemical processing, refining, etc.).

**Conclusion:** The proposed project would not expose the school to unacceptable levels of risk. Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.8.3 – 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.**

This impact analysis addresses the potential for the development of the proposed project to expose persons or the environment to hazardous materials associated with past and current uses of the project site, as well as activities at surrounding land uses.

**Project Site**

A formal Phase I and Phase II environmental site assessment has not been prepared for the project site, thus information in this analysis is based on DTSC and U.S EPA records as well as general site reconnaissance. The project site is not listed on any hazardous materials sites either under U.S. EPA’s Super Fund List or as part of the State of California’s Cortese list pursuant to Government Code 65962.5. However, the record search and site reconnaissance identified several issues associated with past and present uses of the project site that could potentially result

in the exposure of persons and environment to hazardous materials: hazardous waste containing building materials, pesticides, abandoned wells, and USTs. Each is discussed below:

### **ASBESTOS-CONTAINING MATERIALS**

As the Master Plan is developed, structures onsite will be demolished. Therefore, the project is required to comply with San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4002 (National Emissions Standards for Hazardous Air Pollutants) and Rule 3050 (Asbestos Removal Fees). The applicant is required to determine if the structures are considered “regulated facilities” under National Emissions Standards for Hazardous Air Pollutants (NESHAP) by contacting the SJVAPCD. If there are regulated facilities to be demolished, the facilities must be inspected to determine if any asbestos containing material (ACM) are present. If ACM are present, the project must follow the SJVAPCD requirements and, potentially, Cal OSHA and Cal-EPA regulations.

Based on the age of the structures onsite, there is the likelihood of encountering building materials containing asbestos. Mitigation is proposed requiring that these materials be properly removed and disposed of by a certified contractor prior to demolition activities. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

### **LEAD-BASED PAINT**

Based on the age of the structures onsite, it is likely that lead-based paint (LBP) may exist onsite. Mitigation is proposed requiring that these materials be properly removed and disposed of by a certified contractor prior to demolition activities. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

### **WELLS/SEPTIC SYSTEMS**

There were no wells or septic systems directly observed on the property, but property access was restricted in some areas. As such, it is assumed that, due to the presence of active agriculture on the project site, there are agricultural wells onsite as well as domestic wells and possible septic systems for the scattered residences onsite. As these wells and septic systems would not be used at a future date with the proposed project, they should be abandoned in accordance with applicable local, state, and federal regulations. In particular, the closure of all onsite wells and septic systems should be required as a condition of approval for the proposed project. The abandonment of the existing wells and septic systems in accordance with applicable laws would not pose a health risk. Therefore, impacts would be less than significant for all well closure associated activities.

### **PESTICIDES**

The project site was formerly used for agricultural production. While agricultural chemicals were not directly observed on the project site during the site reconnaissance, their uses are assumed due to past and current agricultural practices. It is unknown how recently such

chemicals were used onsite and in what quantities. Therefore, mitigation is proposed requiring the project applicant to undertake soil testing of the project site to determine whether residual concentrations of agricultural chemicals are present and, if so, whether these concentrations are within acceptable limits for residential, educational and commercial developments. If the concentrations exceed acceptable limits, the mitigation measure requires the applicant to perform soil remediation activities prior to grading to ensure that human health and the environment are not exposed to harmful concentrations of agricultural chemicals. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

### **UNDERGROUND STORAGE TANKS**

As discussed previously, the Chevron Gas Station located at 100 Glenwood Avenue, Turlock, California on the project site was the location of a LUST cleanup site and currently has a permitted UST. Corrective action was taken to address the groundwater and soil contaminants from petroleum releases. The case was closed on April 20, 2011. No further action related to the petroleum release at the site is required. This condition would not pose a significant hazardous impact. The Chevron Gas Station currently has a permitted UST. If the site of the Chevron Gas station is developed with a different land use under the Master Plan, the removal of the UST shall be in accordance with state and local regulations. Adherence to these regulations would reduce the potential impact to a level of less than significant.

### **OTHER HAZARDOUS WASTE CONTAINING BUILDING MATERIALS**

Based on the age of the structures onsite there is the potential to encounter fluorescent lights with PCB-containing ballasts and light switches containing mercury. Additionally, there is the potential for CFC-containing equipment to be onsite. Mitigation is proposed requiring that these materials be properly removed and disposed of by a certified contractor prior to demolition activities. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

### **RADON**

As discussed previously, the City of Turlock did not report any radon concentrations above the U.S. EPA threshold of 4.0 pCi/l. Accordingly, indoor radon exposure would be a less than significant impact.

### **ELECTRIC POWER LINES**

TID owns and operates an electric transmission lines on the south side of East Glenwood Avenue and on the west side of Golf Road; these lines are rated 12-kilovolt (kv) and 69 kv, respectively. These power lines are not considered high-voltage power lines. Project construction has the potential to damage these transmission lines. This would be a potentially significant impact.

The California Public Utilities Commission (CPUC) has mandated specific clearance requirements between utility facilities and surrounding objects or construction activities. Mitigation measures have been incorporated into the proposed project to ensure that the project

construction does not adversely impact TID facilities. The mitigation measure requires that the locations of each wooden transmission pole be delineated on grading/development plans, and provides TID the opportunity to review and approve plans. With the implementation of these mitigation measures, the impacts are reduced a less than significant level.

## **GOVERNMENT CODE 65962.2**

As mentioned previously, there are no known hazardous materials sites within the proposed project site or vicinity. The databases, lists and or reports were consulted in order to identify any recorded hazardous material and waste sites within the proposed project area. No recorded sites were identified.

## **SURROUNDING LAND USES**

There are several sites within 0.25 mile of the project site that are recorded on hazardous materials databases. However, the record search indicates that hazardous materials usage or contamination at the nearby sites does not pose a significant environmental concern to the project site since two of the three sites are active UST sites with no records of violations or contamination. The third site is the Valley Wood Preserving Site, which is a Superfund site and is located approximately 1,000 feet from the eastern boundary of the Morgan Ranch Master Plan area. Current human exposures at this site are under control and contaminated ground water migration is also under control. None of these sites would be considered to pose a significant environmental risk to the project site.

**Conclusion:** *Project implementation would result in a **potentially significant** impact.*

**Mitigation Measure #3.8.3a:** Prior to issuance of demolition permits for any structures located on the project site, the project applicant shall retain a certified hazardous waste contractor to determine the presence or absence of building materials or equipment that contains hazardous waste, including asbestos, lead-based paint, mercury, PCBs, and CFCs. If such substances are found to be present, the contractor shall properly remove and dispose of these hazardous materials in accordance with federal and State law. The applicant shall submit documentation to the City of Turlock demonstrating that this contractor has been retained as part of the demolition permit application. Upon completion of removal and disposal, the project applicant shall provide documentation to the City of Turlock demonstrating that these activities were successfully completed.

**Mitigation Measure #3.8.3b:** Prior to issuance of grading permits, the project applicant shall retain a qualified consultant to perform testing of the project site soils for the presence of residual concentrations of agricultural chemicals and herbicides associated with past usage of the project site for agricultural production and the location of the former railroad track alignment. Soils shall be laboratory tested for organo-chlorine pesticides and arsenic in accordance with California Department of Toxic Substances Control (DTSC) guidelines. If the testing yields concentrations in excess of acceptable limits for residential, school and commercial development, the project applicant shall retain a qualified contractor to perform soil remediation in accordance with DTSC guidelines. The soil remediation activities shall be completed prior to

grading activities. The applicant shall submit documentation to the City of Turlock demonstrating that soil testing was performed and any necessary remediation was completed as part of the grading permit application.

**Mitigation Measure #3.8.3c:** Irrigation wells that may be dispersed throughout the project site, and any potential onsite domestic wells and septic systems shall be properly abandoned or destroyed in compliance with applicable regulations of the Stanislaus County Department of Environmental Resources governing water wells and septic systems. Consultation shall occur with the Department of Environmental Resources regarding well and septic system abandonment and inspections. Documentation of wells and septic systems being abandoned or destroyed shall be submitted to the City of Turlock Planning Division prior to construction of proposed uses.

**Mitigation Measure #3.8.3d:** The applicant shall consult with TID to determine the location of electric power lines and irrigation pipelines within the project boundaries. The locations shall be delineated on all grading/development plans. Development plans shall provide for unrestricted utility access and prevent easement encroachments that might impair the safe and reliable maintenance and operation of TID facilities; alternatively, the applicant may relocate the facilities with TID's approval. TID shall be afforded the opportunity to review and approve the grading plans. The applicant shall secure a letter indicating approval of the plans from TID. Prior to issuance of grading permits, the applicant shall provide the City of Turlock with a letter of approval from TID indicating that they have reviewed and approved the proposed grading/development plans.

**Effectiveness of Mitigation:** With the implementation of the above measures, potential hazardous impacts from past and current uses on the project site would be *less than significant*.

**Impact #3.8.4 – 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, or within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.**

As noted above, the proposed project is immediately north to northeast of the Turlock Airpark. This impact will evaluate the proposed project's potential to create aviation safety hazards for people residing or working within the Turlock Airpark land use planning boundary.

The California Division of Aeronautics classifies the Turlock Airpark as a private use airport. By definition, private use airports are to be used only by personal aircraft and occasional invited guests (transient aircraft). Because Turlock Airpark is a private use airport, it is not required to be included in a county's airport land use plan. However, Stanislaus County has chosen to adopt a compatibility plan for the Airpark.

#### **Safety Compatibility Zones**

For the purposes of safety around an airport, the California Airport Land Use Planning Handbook has suggested different categories of Safety Compatibility Zones. These Zones differ in size depending on the operations of a specific airport. The characteristics of the Turlock

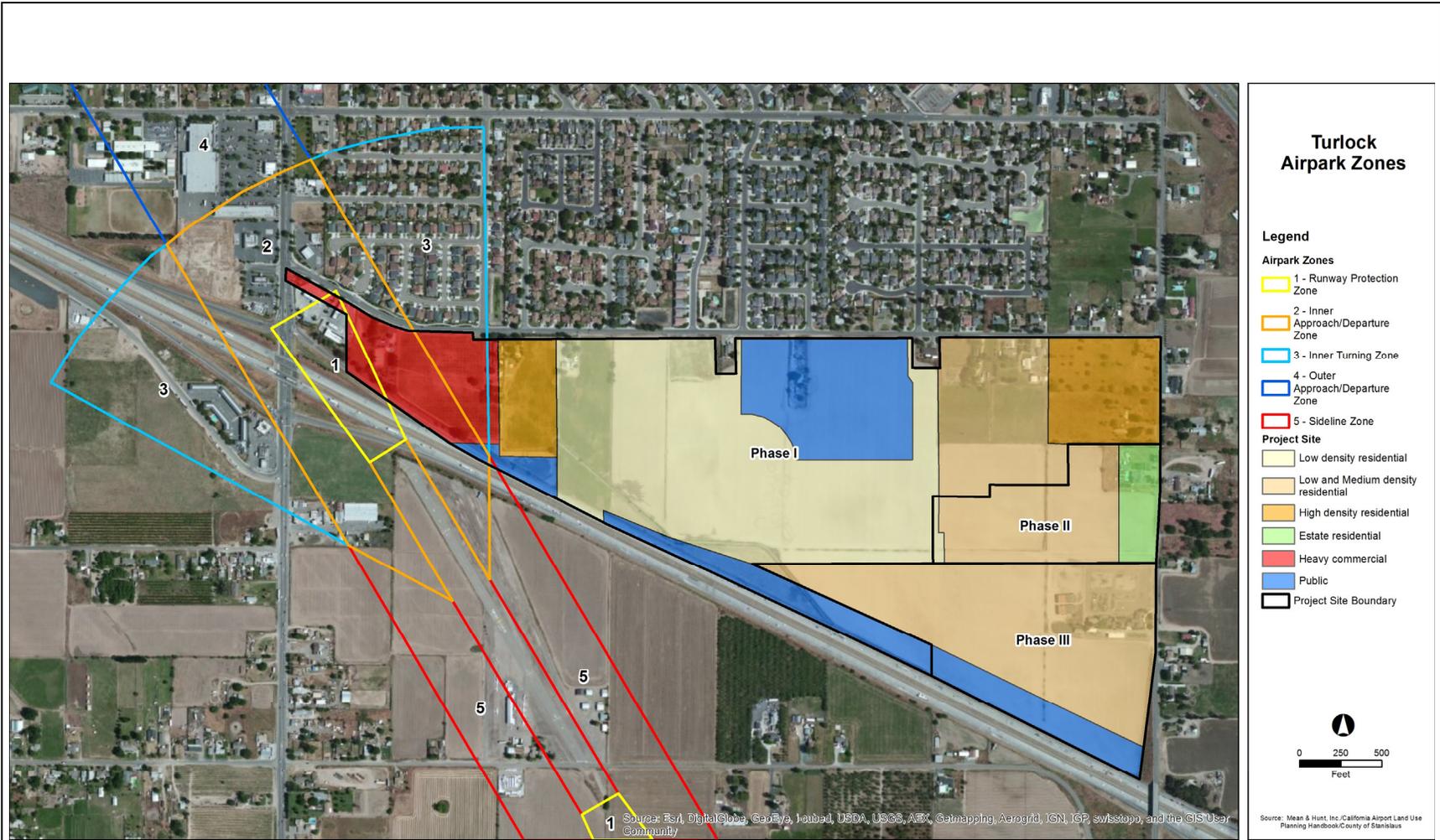
Airpark fall within the standards established in the Handbook for a Low-Activity General Aviation Runway. These include less than 2,000 takeoffs and landings per year at an individual runway end, a runway length less than 4,000 feet, and a visual only approach. The westerly segment of Morgan Ranch Master Plan breaches three Safety Compatibility Zones for a low-activity general aviation runway.

The most restrictive area is Zone One, the Runway Protection Zone (RPZ). According to the Handbook, the RPZ is defined in size by the Federal Aviation Administration (FAA) and classified as a very high risk area. Airport ownership of RPZ property is encouraged and new structures along with residential and nonresidential uses are strongly discouraged. The only exception to RPZ land use is a nonresidential use, with very low intensity and is confined to the boundary of the RPZ. The RPZ does not extend into the Morgan Ranch Master Plan Area.

A portion of Morgan Ranch Master Plan overlaps Zone Two, the Handbook's Inner Approach/Departure Zone. This area extends out and around the sides of the RPZ and contains the area in which 30 to 50 percent of near-airport accident sites occur. With the exception of agriculture parcels, residential uses should be prohibited, along with any nonresidential uses which attract more than a few people (shopping malls, schools, eating establishments, labor intensive offices and plants, etc.) in the Inner Approach/Departure Zone. The Master Plan contemplates medium-density residential, high-density residential, and commercial uses within this area.

Zone Three of the State Handbook, entitled the Inner Turning Zone, also overlaps the Morgan Ranch project. In Zone Three, aircraft are typically turning onto their approach, or departing aircraft transition are transitioning from takeoff to climb and adjusting their heading in correlation to their destination. Much like in Zone Two, nonresidential uses with medium to high intensities of use, such as shopping malls, restaurants, theatres, and buildings with more than three aboveground habitable floors should be prohibited. Residential uses other than very low densities should be prohibited. The Master Plan contemplates community commercial uses within this area.

The primary traffic pattern for the Turlock Airpark runway is left, meaning the majority of flights turn left, away from the Morgan Ranch Master Plan area following departure. When looking at Figure 3.8-1, there are two Inner Turning Zones (Zone 3), one to the east and the other to the west of Zone 2. When the flight pattern is taken into account, Zone 3 of the State Handbook only becomes significant on one side, the west side. The east Inner Turning Zone which overlays Morgan Ranch may be eliminated from discussion along with any restrictions it may propose.



TURLOCK AIRPARK ZONES MAP

Figure 3.8 - 1

### **Analysis**

The ALUC determined that a portion of the Morgan Ranch Project falls within Area 3 of the Plan. Area 3 of the ALUC Plan is an area under approach and take-off extensions. The primary concern within Area 3 is safety. The ALUC also determined that land uses proposed by the Morgan Ranch development which fall beneath Area 3 do not conform to the standards recommended in the ALUC Plan. The proposed land uses are heavy commercial, high density residential, and light and medium density residential. The ALUC concluded that the proposed heavy commercial and residential uses are incompatible with the ALUC Plan in Area 3.

The ALUC determined that the proposed uses for Morgan Ranch outside of the Plan's Area 3 are acceptable land uses.

Mead & Hunt assessed whether the proposed Morgan Ranch project is compatible with guidelines established in the California Airport Land Use Planning Handbook and Stanislaus County Airport Land Use Commission (ALUC) Plan (See Appendix F). Mead & Hunt analyzed the State Handbook and the ALUC's Turlock Airpark Plan safety zones, and contacted various representatives of the Airpark, State, and County agencies to determine Airpark operations and development characteristics. Mead & Hunt has concluded that the project's land uses do not fall into the recommended uses set forth in the State Handbook or the ALUC's Plan. However, taking into account the Airpark's specific operations, Mead & Hunt believes that compromise between Morgan Ranch and the ALUC on land uses in disputed safety zones is warranted.

When evaluated with respect to safety zones in both the California Airport Land Use Planning Handbook and the Stanislaus County ALUCP, conflicts between the proposed Morgan Ranch Master Plan and the Turlock Airpark are evident. However, several characteristics of the airport and its operation minimize this conflict:

- The Airpark is a privately owned, personal-use facility. As such, an airport land use compatibility plan is not required under State law;
- The activity level is very low: fewer than 10 airplane operations per week;
- With the normal direction of operations being from south to north, the usual traffic pattern is on the west side of the airport, away from the Morgan Ranch Master Plan area; and
- The airport owner has indicated that there are no plans to improve the facilities or expand operations and indeed the airport could be closed within the next several years.

**Conclusion:** The proposed project is not compatible with the ALUCP and may pose an aviation safety hazard to people residing and working within the Master Plan Area. This is a ***potentially significant*** impact. However, given the above circumstances, a reduction in safety compatibility restrictions is reasonable. This conclusion notwithstanding, certain safety-related limitations on the Morgan Ranch Master Plan are necessary more as a matter of public safety than for protection of the airport from encroachment by incompatible land uses. As long as Turlock Airpark remains open for operations, the following measures must be implemented:

**Mitigation Measure #3.8.4a:** No buildings shall be constructed within Safety Zone 1, the Runway Protection Zone (RPZ). Roads and automobile parking lots are acceptable uses. Landscaping, light fixtures, signs, and other objects must be limited in height so as not to be obstructions to the airport airspace as defined by Part 77 of the Federal Aviation Regulations (FAR).

**Mitigation Measure #3.8.4b:** Development within Safety Zone 2—the Inner Approach/Departure Zone—as defined by the State Handbook should be limited to low-intensity commercial or industrial uses. Specifically, in accordance with Handbook guidance, the usage intensity should be no more than 40 people per acre on average over the 4.9-acre area affected (196 people total) and no more than 80 people in any single 1.0-acre area. The height of all objects must comply with FAR Part 77 criteria.

**Effectiveness of Mitigation:** With the implementation of the above measures, potential aviation safety hazards would be *less than significant*.

**Impact #3.8.5 – Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.**

The proposed project will result in new development and population growth, which could affect implementation of adopted emergency response and evacuation plans during disasters.

New development as a result of the proposed project will be designed to be consistent with policies in the City’s General Plan Safety Element, which includes requiring new development to be designed and constructed in a manner that minimizes risks from fire, flood, seismic, geologic and noise hazards; and includes requiring adequate emergency access for fire and emergency vehicles.

Additionally, both the City of Turlock Fire Department and Police Department were consulted about the proposed project’s impacts on public safety and neither agency indicated that emergency response or evacuation was an issue of concern. (Refer to Section 3.13 for further discussion). Furthermore, the proposed project does include any characteristics (permanent road closures, street narrowing, hairpin turns, etc.) that would physically impair or otherwise interfere with emergency response or evacuation in the project vicinity.

**Conclusion:** The proposed project would not impair or obstruct emergency response or evacuation. Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

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## **3.9 Hydrology/Water Quality**

### **3.9.1 INTRODUCTION**

This section provides an evaluation of the potential hydrology and water quality impacts that would be caused by implementation of the proposed project. The discussion starts with an overview of regulation that is normally applicable to the hydrology and water quality environmental factor, followed by a description of the physical setting of both the site and surrounding lands. An analysis is then provided to determine whether the impact(s) would be less than significant, significant without mitigation, or significant and unavoidable. If an impact is significant and can be reduced with mitigation, then a description of the mitigation measure(s) is provided.

### **3.9.2 ENVIRONMENTAL SETTING**

#### ***Stormwater***

The City currently protects surface water quality by requiring the implementation of Best Management Practices (BMPs) during the construction of new development projects and requires projects to comply with post-construction BMPs, as identified in the City's National Pollutant Discharge Elimination System (NPDES) Phase 2 Storm Water Management Plan. Surface water quality is also protected by complying with the current State of California Construction General Permit Order 2009-0009-DWQ.

The City's existing storm water system includes about 130 miles of storm drain collection/conveyance piping, with sizes ranging from 6 to 60-inches in diameter; 49 pump stations, several detention basins, and use of the TID open channels.

Currently, most of Turlock's stormwater drains to detention basins located throughout the City. Because groundwater levels are close to the ground surface, these basins are relatively shallow and it is necessary to pump runoff into many of the basins during storm events. After the storm passes, runoff is drained or pumped back into the trunk storm drain system and flows to the southwest corner of the City to a large stormwater basin near the Turlock Regional Water Quality Control Facility (TRWQCF), where it is either pumped into TID Lateral 4 or the Harding Drain. To avoid overloading the trunk storm drains, it is necessary to drain several of the detention basins in the north part of town sequentially, starting with the more downstream basins and progressing to the more upstream basins. This approach of using detention basins with sequential draining of the basins can continue to be used to provide stormwater storage and disposal as the City grows to buildout of the 2030 General Plan.

Part of the eastern area of the City flows directly to Lateral 4 without first being stored in detention basins. Use of the TID laterals for stormwater disposal is allowed through agreements with TID. However, this does not always provide reliable disposal of the stormwater because sometimes the TID laterals are also being used to convey irrigation water or the laterals are out of service for maintenance by TID staff. To eliminate this problem, the runoff from this area should be diverted into a more reliable stormwater disposal system.

Many of the City’s detention basins are used for both stormwater detention and as recreational open space. This joint use of stormwater basins provides numerous sports and recreational facilities for City residents.

***Flooding***

Flood risk is a consequence of rainfall characteristics, topography, water features, vegetation and soil coverage, impermeable surfaces, and urban stormwater management infrastructure. Turlock has an extremely low risk of a major wide-spread flood event. FEMA creates Flood Insurance Rate Maps (FIRMs) that identify the 100-year and 500-year floodplains for the purpose of informing flood insurance necessity. No part of the Study Area is within the FEMA-designated 100-year flood plain. In other words, FEMA has determined that there is less than one percent chance of flooding in any given year in the Study Area.

The existing stormwater system has generally protected the City from flooding. However, minor street flooding occurs in certain areas of the City approximately once per year or every couple of years. This flooding typically occurs when two large storms occur back to back, and the City’s basins have not fully drained from the first storm and the second storm hits. This type of minor street flooding for short time durations in large storm events does not warrant the construction of a major storm drain project to eliminate the flooding. Indeed, due to Turlock’s flat topography, the streets are designed to store storm water temporarily until capacity becomes available in the storm drain system.

Good stormwater management practices are promoted by the existing General Plan, and improvements are outlined in the City’s Storm Drain Master Plan. The City and County each are responsible for implementing stormwater management programs under the terms of the Municipal General Permit for stormwater discharge, as described in the Regulatory Setting section.

**3.9.3 REGULATORY SETTING**

***Federal***

**FEDERAL WATER POLLUTION CONTROL ACT**

The federal Water Pollution Control Act also known as the Clean Water Act (CWA) is the principal statute governing water quality. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the United States Environmental Protection Agency (EPA) the authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to end all discharges entirely and to restore, maintain, and preserve the integrity of the nation's waters. The CWA regulates both the direct and indirect discharge of pollutants into the nation's waters, sets water quality standards for all contaminants in surface waters, and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit is obtained under its provisions. It mandates permits for wastewater and storm water discharges, requires

states to establish site-specific water quality standards for navigable bodies of water, and regulates other activities that affect water quality, such as the dredging and filling of wetlands. Section 402(p) of the act requires that storm water associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by a National Pollutant Discharge Elimination System (NPDES) permit. On December 8, 1999, the EPA circulated Phase II regulations for non-point sources requiring permits for storm water. Permits are required for discharges from Small Municipal Separate Storm Sewer System (MS4s) operators. In California, the NPDES Program is administered by the State.

### **SAFE DRINKING WATER ACT**

The federal Safe Drinking Water Act (SDWA) provides regulations for drinking water quality. The SDWA gives the EPA the authority to set drinking water standards, such as the National Primary Drinking Water regulations (NPDWRs or primary standards). The NPDWRs protect drinking water quality by limiting the levels of specific contaminants that are known to occur or have the potential to occur in water and can adversely affect public health. All public water systems that provide service to 25 or more individuals are required to satisfy these legally enforceable standards. Water purveyors must monitor for these contaminants on fixed schedules and report to the EPA when a maximum contaminant level (MCL) has been exceeded. MCL is the maximum permissible level of a contaminant in water that is delivered to any user of a public water system. Drinking water supplies are tested for a variety of contaminants, including organic and inorganic chemicals (e.g., minerals), carcinogens, radionuclides (e.g., uranium and radon), and microbial contaminants (e.g., coliform and *Escherichia coli*). Changes to the MCL list are typically made every three years, as the EPA adds new contaminants or, based on new research or new case studies, revised MCLs for some contaminants are issued. The California Department of Health Services, Division of Drinking Water and Environmental Management, is responsible for implementation of the SDWA in California.

### **FEDERAL EMERGENCY MANAGEMENT AGENCY**

Floodplain zones are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs) designating flood areas. These tools assist cities in mitigating flooding hazards through land use planning and building permit requirements. To address the need for insurance to cover flooding issues, FEMA administers the National Flood Insurance Administration (NFIA) program. The NFIA program provides federal flood insurance and federally financed loans for property owners in flood prone areas. The 100-year floodplain is the area that has a statistical probability of being flooded every 100 years. To qualify for federal flood insurance, a city must identify flood hazard areas and implement a system of protective controls.

**State**

**ARTICLE X OF THE CALIFORNIA CONSTITUTION**

This law prohibits the waste and unreasonable use of water. Section 2 of the law specifically states:

It is hereby declared that because of the conditions prevailing in this state the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or water course in this state is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion of water. Riparian rights in a stream or water course attach to, but to no more than so much of the flow thereof as may be required or used consistently with this section, for the purposes for which such lands are, or may be made adaptable, in view of such reasonable and beneficial uses; provided, however, that nothing herein contained shall be construed as depriving any riparian owner of the reasonable use of water of the stream to which the owner's land is riparian under reasonable methods of diversion and use, or as depriving any appropriator of water to which the appropriator is lawfully entitled. This section shall be self-executing, and the Legislature may also enact laws in the furtherance of the policy in this section contained.

**WATER RECYCLING ACT OF 1991**

This act describes the environmental benefits and public safety of using recycled water as a reliable and cost-effective method of helping to meet California's water supply needs. It sets a statewide goal to recycle 700 thousand acre-feet per year by the year 2000 and 1 million acre-feet per year by 2010.

**CALIFORNIA'S WATER CODE SECTION 375**

Allows any public entity that supplies water to adopt and enforce a water-conservation program that requires the installation of water-saving devices.

**ASSEMBLY BILL 1881**

Assembly Bill 1881 requires water conservation measures associated with development landscaping be implemented by local agencies having responsibility for development approval. All landscape and irrigation plans shall be prepared in compliance with applicable county or city ordinances regarding water efficient landscaping for new construction and development. (Ord. CS 832 Exh. A, 2003). The County of Stanislaus requires a Landscape and Irrigation Plan be

submitted as part of an application for a land use entitlement, for new development, and the significant expansion or redevelopment of an existing use as determined by the director.

The Turlock Zoning Ordinance requires that "All land area within the public right-of-way adjoining all sides of any parcel or building site that is not otherwise covered with a building, structure, paving, or similar impervious surface shall be landscaped and maintained in conjunction with the landscaping installed on the adjoining property as regulated in this Article." (Section 9-2-109 (e)(8)).

These development standards supplement the Zoning Ordinance standards with distinct streetscape features in the Plan Area.

### **STATE WATER RESOURCES CONTROL BOARD**

The State Water Resources Control Board (SWRCB) is responsible for implementing the CWA and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for storm water discharges, individual permits and general permits. The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0004-DWQ) for MS4s covered under the CWA to efficiently regulate numerous storm water discharges under a single permit. Permit applicants must meet the requirements in Provision D of the General Permit, which requires development and implementation of a Storm Water Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable.

Pursuant to the CWA, in 2001, the SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites (NPDES No. CAS000002); it was updated in 2010. Under this Statewide General Construction Activity permit, discharges of stormwater from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for stormwater discharges or to be covered by the General Permit. Each permit must list Best Management Practices (BMPs) to be implemented on the construction site to protect stormwater runoff and must contain a visual monitoring program, a chemical monitoring program for nonvisible pollutants to be implemented if there is a failure of BMPs; and a monitoring plan if the site discharges directly to a water body listed on the state's 303(d) list of impaired waters. Updated regulations (July, 2010), further define the Board's stormwater discharge permit requirements.

### **REGIONAL WATER QUALITY CONTROL BOARD**

The State's Porter-Cologne Water Quality Control Act outlines the responsibilities of the Regional Water Quality Control Boards (RWQCB) and the procedures for coordinating with the state Water Quality Control Board (SWQCB) to meet federal CWA standards. Stanislaus County falls within the Central Valley Region, which is the largest in California, stretching from the Oregon border south to Los Angeles County. It encompasses 60,000 square miles, or about 40 percent of the State's total area, and includes 38 of California's 58 counties.

The Central Valley Regional Water Quality Control Board (CVRWQCB) headquarters are in Sacramento with branch offices in Fresno and Redding. The CVRWQCB mission is to "preserve and enhance the quality of California's water resources for the benefit of present and future generations." This duty is carried out by formulating and adopting water quality control plans for specific ground and surface water basins and by prescribing and enforcing requirements on waste discharges. As mentioned above, jurisdictions submit various water quality and storm water plans to the regional and State boards for approvals.

## **EAST SAN JOAQUIN WATER QUALITY FRAMEWORK**

The East San Joaquin Water Quality Framework is a voluntary association of local agencies and groups that have an interest in water quality in the San Joaquin River Watershed, in particular the eastside tributaries. Together, the members are working to coordinate water quality monitoring and the implementation of best management practices to improve the quality of the river's water.

The decision-making body of the Framework is the Water Quality Management Committee, which includes members from the San Joaquin River Group Authority and each of the five irrigation districts in the Framework area: Modesto Irrigation District, Oakdale Irrigation District, South San Joaquin Irrigation District, Turlock Irrigation District and Merced Irrigation District.

The working body of the Framework is the Water Quality Technical Committee, which, in addition to members from the five irrigation districts, also includes members who represent the Regional Water Quality Control Board, cities in the Framework area, UC Davis and local Water Quality Coalitions. The group works to help fulfill the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands and provide information to support the development of appropriate Total Maximum Daily Loads.

## **CITY OF TURLOCK**

### ***General Plan***

The project is located within the City of Turlock, and is included in the General Plan as a master plan with specified location, boundaries, and phasing. "The mix of uses, types of development and average density are defined for each master plan area" within the City in advance. Compliance with the General Plan will include the following policies:

### ***Chapter 3 – New Growth Areas and Infrastructure***

#### ***Guiding Policies***

**Policy 3.3-o Optimize groundwater recharge.** Establish requirements for appropriate BMPs in site planning of new development, so that natural drainage systems or groundwater recharge features are incorporated into developments. Participate in regional efforts to protect groundwater supplies and optimize groundwater recharge on a basin-wide basis.

**Policy 3.3-p Groundwater related coordination.** Support and cooperate with Regional (Turlock Groundwater Basin Management Association), County and State programs to protect valuable groundwater resources and facilitate groundwater recharge.

**Policy 3.3-q Reuse of stormwater.** Continue to expand the use of stormwater collected in detention basins for irrigation of public parks, street trees, and landscaping.

**Policy 3.3-ab Detention basin joint uses.** Where feasible, allow joint uses within the detention basins such as recreational open space, parks, and athletic fields.

**Policy 3.3-ae Low Impact Development (LID) and Water Quality Best Management Practices (WQBMPs).** Require implementation of LID techniques and WQBMPs in new development projects and public works projects. Examples of these are use of porous pavement and pervious concrete, water quality swales, and rain gardens.

### ***Chapter 6 – City Design***

**Policy 6.4-e Impervious Surfaces.** Enable natural drainage by reducing the amount of impervious surfaces on a development site.

**Policy 6.4-f On-site stormwater management.** Facilitate groundwater recharge and natural hydrological processes by allowing stormwater to infiltrate the ground on-site and/or be collected for reuse in landscaping. Any on-site stormwater drainage facilities must be designed to drain fully within 72 hours. Update the standards, specifications, and drawings, as well as the development review process as needed to reduce peak-hour stormwater flow and increase groundwater recharge.

### ***Chapter 10 – Safety***

**Policy 10.1-b Protect natural resources.** Protect soils, surface water, and groundwater from contamination from hazardous materials.

**Policy 10.2-h Require erosion control plans.** Require new development to include grading and erosion control plans prepared by a qualified engineer or land surveyor.

## **TURLOCK NPDES PHASE II STORM WATER MANAGEMENT PLAN**

The City of Turlock prepared its Storm Water Management Plan in 2003, in compliance with the NPDES *Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems* (MS4s), better known as Phase II Storm Water Requirements.

Included in the Storm Water Management Plan is, storm water management for the City of Turlock, Best Management Practices (BMPs) for the six minimum control measures as outlined by the NPDES, USEPAs requirements and guidelines for the minimum measures, the efforts the

City of Turlock currently takes to comply and the action the City will take to further comply with all the requirements of a particular measure.

The City's existing storm water system includes about 130 miles of storm drain collection/conveyance piping, with sizes ranging from 6 to 60-inches in diameter; 49 pump stations, several detention basins, and use of the TID open channels. Currently, most of Turlock's stormwater drains to detention basins located throughout the City. Because groundwater levels are close to the ground surface, these basins are relatively shallow and it is necessary to pump runoff into many of the basins during storm events. After the storm passes, runoff is drained or pumped back into the trunk storm drain system and flows to the southwest corner of the City to a large stormwater basin near the TRWQCF, where it is either pumped into TID Lateral 4 or the Harding Drain. To avoid overloading the trunk storm drains, it is necessary to drain several of the detention basins in the north part of town sequentially, starting with the more downstream basins and progressing to the more upstream basins. The City has determined that this approach of using detention basins with sequential draining of the basins can continue to be used to provide stormwater storage and disposal as the City grows to buildout of the 2030 General Plan.

### **3.9.4 METHODOLOGY**

The methodology used for determining whether hydrology and water quality would be impacted by the proposed project included completing a literature review of regulation and reviewing online studies and plans from experts. Experts include federal, State, and local agencies and studies from those in the field of hydrology and water quality. This information was used to answer whether each of the thresholds of significance listed in the next paragraph would be exceeded. If impacts occur, then mitigation is applied in an attempt to reduce to less-than-significant levels. Where impacts still exceed thresholds after mitigation is incorporated, a finding of "significant and unavoidable" is concluded.

### **3.9.5 IMPACT EVALUATION CRITERIA**

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, air quality impacts resulting from the implementation of the proposed project would be considered significant if the project would:

- a) Violate any water quality standards or waste discharge requirements?
- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- e) 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?
- f) Otherwise substantially degrade water quality?
- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- j) Inundation by seiche, tsunami, or mudflow?

The next section provides an analysis and conclusions for each of the questions using the methodology listed before. Significant threshold questions may be included together under the same discussion when appropriate.

### **3.9.6 IMPACT ANALYSIS**

#### **Impact #3.9.1– Violate any water quality standards or waste discharge requirements.**

#### **Impact #3.9.6 - Otherwise substantially degrade water quality.**

Urban development leads to the generation of contaminants such as pathogens, heavy metals, nutrients, pesticides, organic compounds, sediment, trash/debris, oil/grease, and others. These contaminants can pollute and degrade the stormwater runoff. The best approach to reducing stormwater pollution is to prevent the pollutants from entering the stormwater in the first place using Low Impact Development (LID) and stormwater quality BMPs. If the contaminants have entered the stormwater, treatment of the stormwater is another viable approach for improving the runoff water quality.

The City requires the implementation of LID and stormwater quality BMPs in new development projects and Public Works projects. The stormwater system proposed for the growth of the General Plan includes stormwater collection systems that convey runoff to several detention basins. The basins can provide treatment of the stormwater and the stormwater can be directed to the TRWQCF where it could receive a very high level of treatment.

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The majority of the Plan area will drain to the new pond located on the southerly side of the Plan area, adjacent to SR 99.

With the use of LID and water quality BMPs as required by the General Plan policies and by having the ability to direct all runoff to the TRWQCF, it is possible to treat the more highly polluted dry weather runoff and first flush runoff (or possibly all runoff) before it is discharged to the receiving water channels. This ability reduces the potential to violate water quality standards or waste discharge requirements to a less than significant level. It also prevents the substantial degradation of stormwater quality.

**Conclusion:** Builders in the master plan area will be required to submit a SWPPP that will include BMPs for reducing runoff and degradation from polluted storm water run-off. With this requirement, impacts will be reduced to *less than significant*.

**Mitigation Measure:** No mitigation is required.

**Effectiveness of Mitigation:** Implementation of the above mitigation measure and compliance with applicable local, State and federal regulations will reduce project-induced water quality impacts to *less than significant*.

**Impact #3.9.2 - Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).**

Potential impacts of the proposed project on groundwater supplies is addressed in Section 3.13 Utilities and Service Systems.

**Impact #3.9.3 - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site.**

**Impact #3.9.4 - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase**

**the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.**

**Impact #3.9.5 - 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.**

The project site is relatively flat. Runoff from precipitation currently percolates into the ground or drains into neighboring areas and eventually into drainage basins. According to the Natural Resources Conservation Service (NRCS) Web Soil Survey website, the soils on the project site have a ponding frequency class of "none" meaning that ponding is not probable; the chance of ponding is nearly 0 percent in any year. Due to the proposed project site's level terrain, existing drainage patterns will not be altered in a manner which would result in substantial erosion, siltation or flooding on or off-site and watercourses (streams/rivers) do not exist within, or near, the proposed project site.

Full buildout of the Plan area will result in increased impervious surface area, which will result in increased storm water runoff volumes, particularly during intense rainfall. The majority of the Plan area will drain to a new detention pond located on the southerly side of the Plan area, adjacent to SR 99. The exceptions are the existing gas station and car wash sites that currently drain to existing storm drains in Lander Avenue, and the north side of Glenwood Avenue, which drains to drops inlets that convey storm water to existing basins in the existing neighborhoods north of the Plan area. Without appropriate stormwater infrastructure, such as detention basins, the increased runoff could cause onsite or off-site flooding by exceeding the capacity of the existing or proposed stormwater infrastructure. The City requires the implementation of LID and stormwater quality BMPs in infill, new development projects, and Public Works projects. Use of LID and BMPs tends to reduce the post development runoff rates and volumes.

**Conclusion:** Compliance with the adopted regulations would reduce impacts to the City's drainage system to *less than significant*.

**Impact #3.9.7 - Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.**

**Impact #3.9.8 - Place within a 100-year flood hazard area structures which would impede or redirect flood flows.**

**Impact #3.9.9 - Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.**

No portions of the project site are within either a FEMA-designated 100-year or 500-year flood zone. However, due to the flat terrain of the Turlock, including the project site, there is a potential for shallow temporary flooding to occur during intense rainfall events.

Current dam inundation hazard mapping by the California Emergency Management Agency shows the Turlock area to be entirely outside the Dam Inundation Area for New Don Pedro Dam. However, an area in the far southwest of the Study Area falls within the Dam Inundation Area for New Exchequer Dam, located on the Merced River in Mariposa County. This dam holds back just over one million acre-feet of water in Lake McClure. Large-scale inundation of the areas downstream of the dam could be caused by catastrophic dam failure resulting from extreme storm, earthquake, or erosion of the embankment and foundation. Stanislaus County and its cities have prepared a Multi-Jurisdictional Hazard Mitigation Plan. The Plan, updated in 2010, identifies actions that will be taken to respond to flood-related emergencies in the event that flooding occurs.

Failure of the Exchequer Dam could result in inundation of areas southwest of the project site; however, the project site would not be impacted.

**Conclusion:** The proposed project will have no impact with regard to placing housing or structures in a 100-year flood zone. There are no levees or dams in the area whose failure would impact the project site. There is *no impact*.

**Mitigation Measures:** No mitigation measures are required.

#### **Impact 3.9.10 - Inundation by seiche, tsunami, or mudflow.**

A tsunami is a series of ocean waves generated in the ocean by an impulsive disturbance. This disturbance includes earthquakes, submarine or shoreline landslides, volcanic eruptions, and explosions. Tsunamis are not a consideration as the proposed project sites are over 150 miles away from the Pacific Ocean, as measured in a straight line over several mountain ranges. The proposed project area is flat, eliminating the possibility of mudflow.

**Conclusion:** The potential for proposed project site flooding as a result of an inundation by seiche, tsunami, or mudflow is *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

## **3.10 Land Use and Planning**

### **3.10.1 INTRODUCTION**

This section describes the existing and proposed land uses and relevant land use policies of the City of Turlock pertaining to the proposed project. Pursuant to Section 15125(d) of the CEQA Guidelines, this section also provides a discussion of General Plan consistency and describes the relationship between the proposed project and the General Plan for the City of Turlock. The impact assessment focuses on changes in land use, land use compatibility, and General Plan consistency to the extent that potential general plan conflicts may lead to physical impacts on the environment.

### **3.10.2 ENVIRONMENTAL SETTING**

Current land uses include agricultural, residential, and commercial uses (see Figure 2-5 in Chapter 2). Some of the agricultural land is fallow, some has been used for row crops, and one area has an existing orchard. Within the Plan Area, two occupied single-family residences front onto Golf Road. Ten occupied single-family residences and one occupied mobile home front onto Glenwood Avenue. The majority of the residences are set back from the roadways in rural residential-type configurations. Additional features for most of the homes include detached garages, sheds, or barns; one home has a tennis court, and two homes have swimming pools.

The existing, operating Lander Mini-Mart including a Chevron gas station with ten pumps is located at the southeast corner of Lander Avenue and Glenwood Avenue. Directly east of the mini-mart is the operating Fast Track Car Wash, which has five bays for self-service vehicle washing, one automatic vehicle washing bay, and self-service vacuums for cleaning vehicle interiors.

An open ditch runs roughly parallel to State Highway 99. This ditch goes underground, continues under Glenwood Avenue and Lander Avenue to serve parcels outside and west of the Plan Area. Another underground irrigation pipeline runs north/south about 500 feet west of Golf Road. This pipeline serves agricultural parcels north of the Plan Area on the northwest corner of Golf Road and Glenwood Avenue. Overhead electrical power lines parallel Glenwood Avenue on the south side of the street. A small drainage basin within the Plan Area owned by Caltrans is used for Highway 99 storm water run-off.

### **3.10.3 REGULATORY SETTING**

The land use planning and zoning authority of local jurisdictions in California are set forth in the state's planning laws. The project site is located in the incorporated City of Turlock and the analysis of the regulatory setting focuses on the relevant policies of this City.

## STATE

### ***Subdivision Map Act***

The Subdivision Map Act (California Government Code §66410 et seq.) regulates and controls the design and improvement of subdivisions. Any property divided into two or more parcels is subject to the Map Act.

### ***General Plans***

California Government Code Section 65300, et seq. establish the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a city or county and of any land outside its boundaries that, in the city's or county's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period. Although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

### ***Cortese-Knox-Hertzberg Local Government Reorganization Act***

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 consolidates several existing California statutes. The act establishes procedures for local government changes of organization, including city incorporations, annexations to a city or special district and city and special district consolidations, according to the Local Area Formation Commission's adopted guidelines and the Act.

### ***California Air Resources Board***

The California Air Resources Board (ARB) adopted the Air Quality and Land Use Handbook: A Community Health Perspective (Land Use Handbook) in 2005. The Land Use Handbook provides information and guidance on siting sensitive receptors in relation to sources of toxic air contaminants. The sources of toxic air contaminants identified in the Land Use Handbook are high-traffic freeways and roads, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and large gasoline dispensing facilities. If the project involves siting a sensitive receptor or source of toxic air contaminant discussed in the Land Use Handbook, siting mitigation may be added to avoid potential land use conflicts, thereby reducing the potential for health impacts to the sensitive receptors.

## REGIONAL

### *Stanislaus Council of Governments*

The Stanislaus Council of Governments (StanCOG) is a voluntary association of local governments, one of California's 38 regional planning agencies, and one of 500+ nationwide. StanCOG was established in 1971 through a Joint Powers Agreement to address regional transportation issues, and other issues and needs that cross city and county boundaries. It is comprised of the Cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock and Waterford and the County of Stanislaus. It provides mayors, city council members, county supervisors, and citizens an opportunity to be involved in the planning process.

StanCOG establishes population growth estimates and allocates growth among cities via the Regional Housing Need Allocation. As the designated metropolitan planning organization (MPO) for the region, StanCOG prepares and maintains the Federal Transportation Improvement Program (FTIP). StanCOG also works with the seven other San Joaquin Valley MPOs to further the San Joaquin Valley regional Blueprint. The Valley Vision Stanislaus Steering Committee was formed by the StanCOG Policy Board in February 2011, as a staff recommendation to address the requirements of Senate Bill 375 [(SB 375) (Steinberg)]. SB 375 calls on StanCOG to prepare a Sustainable Communities Strategy (SCS) as part of all future Regional Transportation Plans. The SCS is intended as an integrated land use and transportation plan that sets a development pattern for the region, which when combined with transportation policies, will reduce Greenhouse Gas (GHG) emissions from vehicles.

### **2014 Regional Transportation Plan**

StanCOG is in the process of preparing the 2014 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS). The 2014 RTP is a planning document to be developed by StanCOG in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the California Department of Transportation (Caltrans), and other stakeholders, including transportation system users.

Following the passage of Assembly Bill 32 (AB 32) – The California Global Warming Solutions Act of 2006, which specifies that by the year 2020, greenhouse gas (GHG) emissions within the State must be at 1990 levels, Senate Bill 375 (SB 375) – The Sustainable Communities and Climate Protection Act of 2008 was signed into law as the framework for achieving greenhouse gas emissions reductions from land use and transportation planning.

SB 375 includes four primary findings related to the RTP/SCS development process:

- That the ARB develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including StanCOG;
- That StanCOG, during the next RTP update is required to prepare an SCS that specifies how the GHG emission reduction target set by ARB will be achieved. IF the target cannot be met

through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by StanCOG;

- Streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the StanCOG SCS or APS (as determined by ARB) to achieve regional GHG emissions reduction target; and
- Requires that StanCOG conduct the Regional Housing Needs Assessment (RHNA) process consistent with the RTP/SCS process and that the RHNA allocations be consistent with the development pattern in the SCS.

Although the 2014 RTP/SCS specifically targets GHG emission reductions, strategies that reduce GHG emissions have the co-benefit of also reducing criteria air pollutants.

### **San Joaquin Valley Regional Blueprint**

The San Joaquin Valley Blueprint planning process is a joint effort of StanCOG and eight other local agencies, formed with the goal of developing a cohesive regional framework that defines and offers alternative solutions to growth-related issues for the entire Central Valley. The process involves the integration of transportation, housing, land use, economic development, and the environment to produce a preferred growth scenario to the year 2050.

In early 2006 the eight Councils of Governments in the San Joaquin Valley came together to develop a coordinated valley vision – the San Joaquin Valley Regional Blueprint. On April 1, 2009 the San Joaquin Valley (SJV) Regional Policy Council reviewed the Valley COG’s collaborative work on the Blueprint and took the following actions:

- Adopted a list of Smart Growth Principles to be used as the basis of Blueprint planning in the San Joaquin Valley; and
- Adopted Scenario B+ as the Preferred Blueprint Growth Scenario for the San Joaquin Valley to the year 2050. This preferred scenario will serve as guidance for the Valley’s local jurisdictions with land use authority as they update their general plans.

### ***San Joaquin Valley Air Pollution Control District***

The San Joaquin Valley Air Pollution Control District has adopted the Air Quality Guidelines for General Plans (Air Quality Guidelines). The Air Quality Guidelines is a guidance document and resource for cities and counties to use to address air quality in their general plans. It includes goals, policies, and programs for adoption in general plans to reduce vehicle trips, reduce miles traveled, and improve air quality. The City of Fresno incorporated many of the policy suggestions from the San Joaquin Valley Air Pollution Control District in their Air Quality Update of the 2025 Fresno General Plan Resource Conservation Element adopted in 2009.

## LOCAL

### *City of Turlock General Plan*

The Turlock General Plan (General Plan) adopted in September 2012, is a blueprint for land use and development activities in the Turlock planning area. The General Plan is a long-range, comprehensive planning document that embraces all aspects of existing and future physical development of the community, public and private. The General Plan contains the following elements: Land Use and Economic Development; New Growth Areas and Infrastructure; Parks, Schools, and Community Facilities; Circulation; City Design; Conservation; Air Quality and Greenhouse Gases; Noise; and Safety. Each General Plan element contains goals and policies to guide existing and future land use and development activities.

The SE 1 Master Plan Area is designated on the General Plan Land Use Diagram as a Compact Residential Neighborhood, with a minimum average residential density of 8.0 dwelling units per acre and a maximum average density of 9.6 dwelling units per acre (gross). These densities are somewhat higher overall than the current City density as a whole. Primary access to the neighborhood would be via Golf Road, Glenwood Avenue, and a new east-west arterial roadway referred to as the Morgan Ranch Arterial. According to the General Plan, approximately two-thirds (116 acres) of the Plan Area is to be developed with residential land uses. The balance will include two neighborhood parks, an elementary school, limited office and commercial uses, and a detention/pond basin located adjacent to State Highway 99. This Master Plan has been prepared to be consistent with the Turlock General Plan.

The New Growth Areas and Infrastructure element describes Turlock’s growth management strategy as that which “has enabled the city to maintain fiscal stability, preserve farmland, and develop desirable new neighborhoods for its growing population. One logically sized growth area is selected at a time and a master plan is established for its development....Area wide plans must address land use, circulation, housing, open space, infrastructure, public facilities, and public services consistent with the General Plan.”

Unlike past General Plans, the current General Plan specifies the locations, boundaries, and phasing of master plans, including the Master Plan for SE 1, of which Morgan Ranch is a part. The mix of uses, types of development and average density are defined for each master plan area in this General Plan (Section 3.2). The SE 1 master plan area will have the designation of “Compact Neighborhoods,” with a mix of traditional single family, small-lot single family, townhouses, and multifamily apartments or condominiums. The maximum average density allowed is 20 percent higher than the minimum. If the developer of a master plan area wishes to build to a higher density than 20 percent above the minimum, then a General Plan amendment and an analysis of environmental impacts would be required. Densities for Compact Neighborhoods can range from 8 to 9.6 dwelling units/acre. In order to achieve the minimum average density, individual housing developments within the master plan may be above or below that density, although the mix of housing types and densities over the entire master plan area must achieve the target minimum density on average.

Principal policies guiding the creation of Master Plan Areas, as detailed in the General Plan, are listed below.

- Policy 3.2-a Master Plan size.** A new master or specific plan should be approximately 200 to 400 acres in size, and occupy a logical are, contiguous to the city limits.
- Policy 3.2-b Rights of way within planning boundary.** Rights of way, utilities, and agricultural buffers shall all be included within the master plan boundary.
- Policy 3.2-c Urban/rural edge.** Where master plan areas meet the edge of the study area boundary (outside of which land remains in agricultural use), deep landscaped setbacks and agricultural buffers shall be used to screen the edge of urban development.
- Policy 3.2-d Minimum average densities established for master plan areas.** Each master plan, or portion of a master plan, must be built to achieve the minimum average residential density specified on the Land Use Diagram and may go up to an overall average density that is 20 percent higher. (If the developer of a master plan area wishes to build to a higher density than 20 percent above the minimum, then a General Plan amendment and an analysis of environmental impacts should be required). The minimum density calculation does not apply to land that is to be used for public parks, schools, or other non-residential uses.
- Policy 3.2-e Mix of housing types and densities required.** Each area will have a required mix of housing types, including traditional single family, small-lot single family, townhouse, and apartments/condos. The housing mix must achieve the minimum average density specified for each master plan. Regardless of the minimum average density, every master plan must include a minimum of 15 percent multi-family units.
- Policy 3.2-f Neighborhood centers required.** A “neighborhood center” location shall be zoned and required, and will include a park, school, local-serving retail and/or office uses, and some upper-level or adjacent multifamily residential development.
- Policy 3.1-g Parks and trails provided in new neighborhoods.** The master plan areas will include park sites, a pedestrian/bicycle network of trails, and a multi-use agricultural buffer along the edge (serving park, stormwater detention, trail, and buffer purposes). When a school is present, a neighborhood park shall be located adjacent to it whenever feasible. The minimum amount of gross land area in a master plan devoted to parks and public facilities shall be 10 percent, and should generally be higher.
- Policy 3.2-h Schools in new neighborhoods.** Neighborhoods shall include sufficient schools to support the residential population. Schools shall be located along local, collector, or arterial streets, but entrances may not be located on arterials.

- Policy 3.2-i Dedication for public uses.** Based on the proportional impacts of development on the demand for public services and facilities, a portion of any new residential neighborhood shall be conveyed or voluntarily committed in fee simple title to the City for the public uses, including but not limited to schools, libraries, and police and fire stations. These conveyances must be in a development agreement or other form approved by the City Attorney.
- Policy 3.2-j Consistency with General Plan circulation diagram.** In order to ensure connectivity to the existing city, through new neighborhoods, and to the freeway, collector and arterial streets in master plan areas must be designed, and sufficient right of way reserved, to comply with the citywide circulation plan described in Chapter 5 of the General Plan. Minor deviations may be approved provided that they have no negative impact on the overall circulation network.
- Policy 3.2-k Maximum block sizes.** Encourage a fin-grained street pattern, vehicular and pedestrian connectivity, and a human scale of development by requiring maximum block sizes, measured from street centerline to street centerline:
- In low-density residential areas, block length shall not exceed 660 feet.
  - In medium and high-density residential areas, block length shall not exceed 500 feet, with the ideal block length around 300-400 feet.
- Policy 3.2-l Limit Cul-de-sacs.** Cul-de-sacs, hammerheads, or similar dead-end streets shall not make up more than 10 percent of the total length of all streets in a master plan area. Pedestrian connections through the ends of cul-de-sacs to adjacent through streets are encouraged, especially where such pathways would facilitate connections to parks or schools.
- Policy 3.2-m Local street connections between neighborhoods.** Where a new residential subdivision occurs adjacent to undeveloped land, which is planned to be developed as part of a master plan, stubs must be provided for future connections to the edge of the property line. Where street stubs exist on adjacent properties, new street within a new subdivision shall connect to these stubs.
- Policy 3.2-n Pedestrian and bicycle connections.** Continuous and convenient pedestrian and bicycle connections shall be provided from every home in a master plan area to the nearest neighborhood center, school, and park. Pedestrian connections may be in the form of sidewalks, linear parks, or Class I multi-use trails. Bicycle connections may be in the form of Class I, Class II, or Class III bicycle facilities, and local streets.

### ***City of Turlock Zoning Ordinance***

Turlock is a charter city that requires that local zoning be consistent with adopted General Plans. The Master Plan is not proposing changes to the City's current zones. Approximately 120 acres have been designated as primarily as Medium Density Residential, with the remaining areas

designated as High Density Residential (15 acres), Community Commercial, Office, Public, or Park use in the New Growth and Infrastructure element.

During the Notice of Preparation (NOP) review and comment period, there were no comments directly addressing land use within the Plan Area, with one exception. Individuals residing on Golf Road to the east of the proposed Project were concerned about the proposed zoning within the Plan Area, for the area at Golf Road and Glenwood Avenue, for high density residential development. Since the NOP was announced in February 2012, the City has adopted an updated General Plan, which included changes in land designations throughout the City, including within the Plan Area. The land within the Master Plan will need to be rezoned as part of the Master Plan approval process to be consistent with the Turlock General Plan.

**Existing Land Use Designations**

The Morgan Ranch Master Plan utilizes the existing General Plan land use designations. Table 3.10-1 provides a summary of the existing General Plan land use designations. The General Plan land use designations shall comply with the corresponding Zoning District’s development and design standards. It is the intent that, along with adoption of the Master Plan, the Zoning Ordinance will be amended to reflect the land uses and zoning designations specified in the plan.

**Table 3.10-1  
Existing Project Area Land Use, Zoning Densities - Turlock General Plan and City Zoning**

Land Use Designation	Project Area Acreage		Allowable Density per Acre	Characteristics
	Acres	Zoning		
Medium Density Residential	97.1	RDM	7 - 15 DU/acre	Future 680 to 1,456 DU
Medium Density Residential	23.1	RDM	NA	Future well site & drainage area
High Density Residential	15.0	RDH	15 - 40 DU/acre	Future 225 to 600 DU
Community Commercial	8.9	CC	25% FAR	Existing gas station & car wash; vacant for future commercial
Office	1.5	O	35% FAR	
Public	11.1	PUB	NA	Future elementary school (estimated 300 students)
Public	4.4	PUB	NA	Existing Caltrans detention basin
Park	8.7	P-S	NA	Two future neighborhood parks
<b>Site Total</b>	<b>170</b>			

Note: DU = Dwelling Unit (Residence)  
FAR = Floor area ratio

Terms for General Plan land use designations may differ from those used in the Zoning Ordinance. For example, although the General Plan designates land separately for use as Public, Park, or Detention Basin, these uses are included in the Public and Semipublic Zoning District.

### **R-M – Medium Density Residential**

The Medium density residential District is intended to limit the expansion of the City in order to preserve agricultural lands and maintain a compact urban form, while responding to many households' preference for single-family units. Other purposes of this district are to provide appropriately located areas for single-family and medium density multifamily dwelling units consistent with the General Plan and with standards of public health and safety; provide adequate light, air, privacy and open space for each dwelling unit and protect residents from the harmful effects of excessive noise, population density, traffic congestion and other adverse environmental impacts; and achieve design compatibility with adjacent uses through the use of site development standards.

The following are the permitted uses in the R-M District without conditions or administrative approval:

- A. Single family dwelling unit per lot;
- B. Second dwellings
- C. Small family day care homes (Subject to TMC 9-2-110 and 9-2-209)
- D. Group homes
- E. Small Residential care facilities
- F. Home occupations (subject to Article 2 of Chapter 9-5 of the TMC)
- G. Domesticated or household animals (subject to TMC 6-1-105)
- H. Accessory buildings and structures (subject to TMC 9-2-101)

Condominiums are permitted in a Planned Development only.

The following residential uses are permitted in the R-M district only with additional approval or permitting, such as a Conditional Use Permit (CUP), Minor Discretionary Permit (MDP), or Minor Administrative Approval (MAA):

- B. Large family day care home (MAA) (Subject to TMC 9-2-110 and 9-2-209)
- C. Group quarters (MDP)
- D. Emergency shelter (CUP)
- E. Mobile home park (CUP) (Subject to TMC 9-2-111)
- F. Multifamily dwelling (MDP)
- G. Large Residential care facility (CUP)

In addition to residential uses, commercial use in the R-M district includes neighborhood stores with an MDP.

Public and Semipublic uses include a variety of uses, listed below, that may require a CUP or MDP:

- A. Cemeteries/crematories (CUP)
- B. Religious assembly (CUP)
- C. Convalescent hospitals (MDP)
- D. Day care centers (CUP)

- E. Golf Course/driving range (CUP)
- F. Major utilities (CUP)
- G. Minor utilities (CUP)
- H. Park and recreation facilities (MDP)
- I. Public buildings and facilities (MDP)
- J. Schools, public/private (CUP)

### **R-H – High Density Residential**

The high density residential district is intended to provide appropriately located areas for high density multiple-family dwelling units consistent with the General Plan and with standards of public health and safety; provide affordable housing for all economic segments of the community and conserve land while maintain a compact urban form; provide adequate light, air, privacy and open space for each dwelling unit and protect residents from the harmful effects of excessive noise, population density, traffic congestion and other adverse environmental impacts; and achieve design compatibility with adjacent uses through the use of site development standards.

- A. Single family dwelling unit per lot;
- B. Second dwellings
- C. Small family day care homes
- D. Group homes
- E. Small Residential care facilities
- F. Home occupations (subject to Article 2 of Chapter 9-5 of the TMC)
- G. Domesticated or household animals (subject to TMC 6-1-105)
- H. Accessory buildings and structures (subject to TMC 9-2-101)

Condominiums are permitted in a Planned Development only.

The following residential uses are permitted in the R-H district only with a Conditional Use Permit (CUP), Minor Discretionary Permit (MDP), or Minor Administrative Approval (MAA):

- B. Large family day care home (MAA) (Subject to TMC 9-2-110 and 9-2-209)
- C. Group quarters (MDP)
- D. Emergency shelter (CUP)
- E. Mobile home park (CUP) (Subject to TMC 9-2-111)
- F. Multifamily dwelling (MDP)
- G. Large Residential care facility (CUP)

In addition to residential uses, commercial use includes neighborhood stores with an MDP.

Public and Semipublic uses in the R-H district include a variety of uses, listed below, that may require a CUP or MDP:

- A. Cemeteries/crematories (CUP)
- B. Religious assembly (CUP)

- C. Convalescent hospitals (MDP)
- D. Day care centers (CUP)
- E. Golf Course/driving range (CUP)
- F. Major utilities (CUP)
- G. Minor utilities (CUP)
- H. Park and recreation facilities (MDP)
- K. Public buildings and facilities (MDP)
- L. Schools, public/private (CUP)

**C-C Community Commercial District**

The Community Commercial district is intended to provide a wide range of retail stores, restaurants, hotels and motels, commercial recreation, personal services, business services and financial services and for limited office and residential uses. All new or expanded uses of a site or structure are required to obtain necessary permits. Permitted uses include:

- A. Cultural institutions
- B. Government offices
- C. Animal grooming
- D. Animal retail sales
- E. Antique shops
- F. Artists' studios
- G. Bakeries, retail
- H. Retail and retail sales
- I. Catering services
- J. Laundries, limited
- J. Business and professional offices
- K. Medical and dental offices
- L. Personal Services
- M. Recycling collection facilities, small
- N. Retail sales
- O. Accessory structures and uses (subject to TMC-9-2-101 and 9-2-112)

Uses permitted with a CUP, MDP, or MAA in the C-C district include:

- A. Emergency Shelter (CUP)
- B. Clubs and lodges (MDP)
- C. Day care centers (MAA)
- D. Hospitals (CUP)
- E. Parking lots (MDP)
- F. Public buildings and facilities (MDP)
- G. Religious assembly (MDP)
- H. Trade schools
- I. Public and private schools
- J. Minor utilities
- K. Animal boarding

- L. Animal hospitals
- M. Automobile repair, major (MDP) (Subject to TMC 9-2-104 and 9-2-112)
- N. Automobile repair, minor (MAA) (Subject to TMC 9-2-104 and 9-2-112)
- O. Automobile service station (MAA) (Subject to TMC 9-2-104 and 9-2-112)
- P. Automobile washing (MDP) (Subject to TMC 9-2-104 and 9-2-112)
- Q. Bar (CUP)
- R. Building materials and services (MDP)
- S. Clinics (MDP)
- T. Commercial filming (MDP)
- U. Commercial recreation and entertainment, less than 2,000 sf (CUP) (Subject to TMC Article 2 of Chapter 9-5)
- V. Convenience gas mart (MDP) (Subject to TMC 0-1-202)
- W. Dance hall/nightclub (CUP)
- X. Discount club (CUP) (Subject to TMC 0-1-202)
- Y. Discount store (MDP) (or CUP, Subject to TMC 0-1-202)
- Z. Entertainment (excluding adult entertainment) (MDP)
- AA. Financial services (MDP) (Subject to TMC 9-2-112 and Article 5 of Chapter 9-5)
- BB. Food and beverage sales, Neighborhood store < 2,500 sf (MAA)
- CC. Food and beverage sales, larger than 2,500 sf
- DD. Food and beverage sales > 2,500 sf (MDP) (or CUP, Subject to TMC 0-1-202)
- EE. Fortune telling (CUP)
- FF. Funeral and internment services (MAA)
- GG. Health/recreation center (MAA)
- HH. Hotels and motels (MAA) (CUP required if operation abuts an R district)
- II. Laboratories (MAA)
- JJ. Maintenance and repair services, minor (MAA) (Subject to 9-2-112 and Article 5 of Chapter 9-5)
- KK. Nurseries (MAA)
- LL. Nursing homes (MDP)
- MM. Outdoor storage (MDP) (Subject to 9-2-112 and Article 5 of Chapter 9-5)
- NN. Printing and publishing, limited (MAA)
- OO. Research and development services (MDP)
- PP. Restaurant (MAA)
- QQ. Restaurant, drive-in (MDP)
- RR. Restaurant, fast food (MDP)
- SS. Second hand stores (MDP)
- TT. Shopping centers (MDP)

Additional uses, not listed above may be permitted subject to a conditional use permit (CUP). Those proposed uses must be of similar nature and intensity as other uses permitted in the C-C district, as determined by the Community Development Director or his/her designee.

### **C-O Community Office District**

The Community Office district is intended to provide a transitional zone between commercial and residential uses with areas for business and professional offices. All new or expanded uses of a site or structure are required to obtain necessary permits. Permitted uses include:

- A. Family day care, small (6 or fewer persons) (Subject to TMC 9-2-110)
- B. Group quarters, small (Subject to TMC 9-2-110)
- C. Cultural institutions
- D. Government offices
- E. Business and professional offices
- F. Medical and dental offices
- G. Accessory Structures and uses (Subject to TMC 9-2-101 and 9-2-112)

Uses permitted with a CUP, MDP, or MAA in the P-S district include:

- A. Family day care, large (MAA) (Subject to TMC 9-2-110)
- B. Group quarters, large (MDP)
- C. Emergency shelter (CUP)
- D. Caretaker unit (CUP) (may include caretaker's unit within a rental storage unit)
- E. Clubs and lodgers (MDP)
- F. Convalescent hospitals (MDP)
- G. Day care centers (MDP)
- H. Hospitals (CUP)
- I. Parking lots (MDP)
- J. Public buildings and facilities (MDP)
- K. Religious assembly (MDP)
- L. Schools, trade (MDP)
- M. Schools, public/private (MDP)
- N. Minor utilities (MDP)

### **P-S Public and Semipublic District**

The public and semipublic district provides for public uses such as parks and open space, as well as schools, cultural institutions and recreation facilities. Uses permitted in this district include:

- O. Cemeteries
- P. Open space
- Q. Parking lots
- R. Storm drainage basins
- S. Utilities, minor

Uses permitted with a CUP, MDP, or MAA in the P-S district include:

- A. Commercial recreation and entertainment (CUP) (Subject to TMC 9-2-112 and 9-2-121)
- B. Commercial uses, outdoor facilities (CUP) (Subject to TMC 9-2-112 and Article 5 of Chapter 9-5)

- C. Airports (CUP)
- D. Clubs and lodges (MDP)
- E. Convalescent facilities (MDP)
- F. Corporation Yards (MDP) (maintenance and repair service uses are limited to those of a public and semipublic nature)
- G. Cultural institutions (MDP)
- H. Day care centers (MDP)
- I. Government offices (MDP)
- J. Heliports (MDP) (must be greater than 1,000 ft from an R district)
- K. Hospitals (CUP)
- L. Park and recreation facilities (MDP)
- M. Public buildings and facilities (CUP)
- N. Public and private schools (CUP)
- O. Utilities, major (MDP)

**Physical Setting (Existing)**

The Morgan Ranch Master Plan is located within the City’s Sphere of Influence and within the Turlock city limits. The Turlock General Plan has identified the predominately undeveloped, roughly triangular area bounded by State Highway 99 to the south, Golf Road to the east, and Glenwood Avenue to the north, as the Master Plan Area.

Current land uses include residential, commercial, and agricultural uses. Agricultural uses include one orchard and row crops, as well as fallow land in the northeastern corner of the Plan Area. Portions of an irrigation ditch, partially an open ditch, with a portion becoming an underground ditch, runs roughly parallel to State Highway 99. A second underground irrigation pipeline runs north/south approximately 500 feet west of Golf Road. This pipeline serves agricultural parcels north of the Plan Area on the northwest corner of Golf Road and Glenwood Avenue. A detention basin owned by Caltrans, is located northeast of State Highway 99 near the western project boundary.

Two occupied single-family homes are located on Golf Road, while ten occupied single-family homes and one occupied mobile home front onto Glenwood Avenue. These residences adjoin agricultural fields/orchards, and many include outbuildings, some of which are associated with agricultural production. Three commercial structures are located on the western boundary of the Plan Area, including a fast food restaurant and gas station with mini mart and automatic car wash.

No public streets or roadways are currently located within the interior of the Plan Area, although Golf Road, Glenwood Avenue, and Lander Avenue are included at the boundaries of Morgan Ranch. The eastern Master Plan boundary shares the City’s eastern boundary along Golf Road. Golf Road crosses over State Highway 99 to the south of the Plan Area: no freeway interchange exists at Golf Road. State Highway 99 runs in a northwest direction at the southern boundary of the Plan Area. State Highway 99 is a four-lane divided highway, at grade thoroughfare for the entire length where it borders the Plan Area. A Caltrans standard wire mesh fence with metal posts separates the highway right of way from the Plan Area. Lander Avenue, on the western

boundary of the Plan Area, has interchange access to State Highway 99 with the highway elevated over Lander Avenue.

The City's General Plan currently designates the project site as the SE 1 Master Plan Area, and is part of the Phase 1 phasing plan for new growth areas. SE 1 is designated for Medium and High Density Residential, Community Commercial, Office, Public (elementary school and detention basin), and Park use (see Table 3.10-1). Average residential density is 8 dwelling units per acre, with a maximum of 9.6 dwelling units per acre. Approximately two-thirds (135 acres) of SE 1 is to be developed with residential land uses. The balance will include a neighborhood park, an elementary school, limited office and heavy commercial, and a linear detention basin adjacent to the freeway. Per the General Plan's Master Plan Guidelines, "Concentrations of medium and high density residential development are in the smaller, western portion of the master plan area, west of Quincy Road. This concentrates the highest density of homes closest to Downtown."

#### **3.10.4 IMPACT EVALUATION CRITERIA**

The CEQA Guidelines set forth criteria for the determination of whether a project will have a significant impact on land use and planning. A project's effect will normally be considered significant if it will:

- a) Physically divide an established community.
- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

#### **3.10.5 IMPACT ANALYSIS**

##### **Impact #3.10.1 – Physically divide an established community.**

The Plan Area is located on the southern boundary of the City, to the north of State Highway 99. It has remained undeveloped since it was annexed into the City. The Plan Area includes 12 residences located along the south side of E. Glenwood Avenue and the west side of Golf Road, which both border the Plan Area. With the exception of two businesses at the northwest apex of the Plan Area, the remaining land has been designated as medium and high density residential, public, park, and community commercial. No streets are currently included within the Plan Area, although it is bordered on the north, east and west by Arterial roadways. Much of the land is in agricultural production or is fallow fields. Three businesses are located at the northwest corner of the Plan Area. Irrigation canals bisect the land, and a detention basin is located immediately north of State Highway 99.

**Conclusion:** The proposed Master Plan will result in additional roadways that will result in circulation efficiencies for the Plan Area. Proposed uses and design will not physically divide a community. The project will result in a *less than significant* impact.

**Mitigation Measure:** None are required.

**Impact #3.10.2 – Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.**

The following addresses applicable plan, policy or regulation provisions and analyzes proposed project consistency with applicable plans, policies or regulations. If inconsistency between the proposed project and plans, policies, or regulations is concluded, a determination is made as to whether the inconsistency would result in a potentially significant impact.

The preparation of this Draft EIR was publically announced on February 10, 2012 to provide the public and agencies the opportunity to provide input on the scope and content of the environmental analysis. At that time, the City was updating its General Plan, and the Notice of Preparation (NOP) for the Draft EIR stated that a General Plan Amendment and Rezone would be required for the Morgan Ranch Master Plan Area. The Plan Area was designated Heavy Commercial (HC), High Density Residential (HDR), Low and Medium Density Residential (LDR/MDR), Low Density Residential (LDR), and Park (P). The City adopted the updated General Plan in September 2012, and changed the land use designations at that time to: Community Commercial (CC), Office (O), High Density Residential (HDR), Medium Density Residential (MDR), Public/Semi-Public (PUB), and Park (P). Therefore, the General Plan Amendment described in the NOP is no longer necessary.

At the time the NOP was announced, the zoning for the Plan Area included Heavy Commercial (H-C), High Density Residential (R-H), Low and Medium Density Residential (R-L 4.5) and Low Density Residential (R-L). The proposed zoning designations are Community Commercial (CC), Commercial Office (CO), High Density Residential (R-H), Medium Density Residential (R-M), and Public/Semipublic (P-S). The City is in the process of updating its Zoning Ordinance to be consistent with the recent General Plan changes. The land within the Master Plan will need to be rezoned as part of the Master Plan approval process to be consistent with the Turlock General Plan.

In addition to consistency with the land use designations of the General Plan, the project requires that the Master Plan also be consistent with the applicable goals and policies of the General Plan. An analysis of each policy is provided below.

Table 3.10-2 summarizes the proposed project's consistency with all applicable objectives, goals, and policies of the General Plan. As shown in the table, the proposed project would be consistent with applicable objectives, goals, and policies.

**Table 3.10-2  
General Plan Consistency Analysis**

<b>Chapter / Element</b>	<b>Type &amp; No.</b>	<b>Text</b>	<b>Consistency Determination</b>
<b>2 Land Use and Economic Development</b>	Guiding Policies 2.5-a	Housing type diversity. Increase the diversity in the citywide mix of housing types by encouraging development of housing at a broad range of densities and prices, including small-lot single-family, town-houses, apartments, and condo-minimums. Aim to achieve an overall housing type mix of 65 percent traditional single family, 35 percent medium and higher density housing types.	The project is consistent with the General Plan requirements. The Master Plan includes 170 total acres, with 112.1 acres to be developed for residential use (not including acreage planned for a storm basin). Fifteen acres are planned for high-density residential at 15-40 dwelling units per acre, and 97.1 acres are planned for at medium density of 7-15 dwelling units per acre, including single family homes on smaller lots. The resulting number of units anticipated is between 680 and 1,456 medium density units and 225 to 600 high density units, or approximately 60 to 66 percent medium density and 33 to 40 percent high density residential development.
	Guiding Policies 2.5-b	New neighborhood character. Foster the development of new residential areas that are compact, mixed use, and walkable, with a distinct identity, an identifiable center, and a “neighborhood” orientation.	The project is consistent with the General Plan requirements. The Master Plan includes a mixture of land uses, including medium and high density residential, office, community commercial, parks and a new elementary school. Two neighborhood centers are planned – one with retail sales and services and the second with a school and a neighborhood park. Pedestrian and bicycle paths are also planned to encourage a walkable community.
	Implementing Policies 2.5-f	Master planning required. Require comprehensive master planning of new residential neighborhoods in expansion areas consistent with the requirements in the General Plan. Also require that 70 percent of one master plan area is completed (building permits issued) before another starts.	The project is consistent with the General Plan requirements. This document satisfies the requirement that that a Master Plan be prepared for new residential neighborhoods in expansion areas. As the General Plan shows, the Master Plan area has been included, and development here is planned per the General Plan requirements.
	Implementing Policies 2.5-g	Locations for high density development. Maintain the highest residential development intensities Downtown, along transit corridors, near transit stops, and in new neighborhood centers.	The project is consistent with the General Plan requirements. High density residential development is planned with access from Glenwood Avenue and Golf Road on the east, and along Glenwood Avenue to the west, which provide easy access to commercial areas, the City’s downtown

Chapter / Element	Type & No.	Text	Consistency Determination
Implementing Policies 2.5-h	Transit and pedestrian accessibility from housing. Work with developers of affordable and multifamily housing to encourage the construction of transit-oriented and pedestrian-oriented amenities and appropriate street improvements that encourage walking and transit use.	<p>to the north, and to State Highway 99 to the south. The planned school and public park (and neighborhood centers) are within .25 and 0.5 miles, respectively.</p> <p>The project is consistent with the General Plan requirements. The City does not anticipate that public transit will be available when the Plan Area first develops. However, the Plan Area’s circulation system is designed to allow for the City to add bus service, with likely bus stop locations added at Glenwood Avenue east of Lander Avenue (future Morgan Ranch Arterial), Morgan Ranch Arterial near 5th Street, Morgan Ranch Arterial near Golf Road, and Golf Road south of Glenwood Avenue (near the site of the high density residential development). The locations, types, and width of roadways have been planned to encourage walking and bicycling to and from the school and other public areas in a safe manner. Class II and Class III bicycle lanes are planned on the 3 primary roadways at the periphery or within the Project Area. Design of the Plan Area encourages walking and will provide sidewalks set back from the curb.</p>	
Guiding Policies 2.6-b	Neighborhood and community commercial areas. Facilitate the development of neighborhood and community commercial areas, which will: (a) conveniently serve current and future residential needs, (b) provide employment opportunities, (c) contribute to the attractiveness of the community, and (d) contribute to the City’s tax base. Mixed use commercial areas are also encouraged, and shall be incorporated into new master plan areas.	The project is consistent with the General Plan requirements. Community commercial areas (8.9 acres) and office uses (1.5 acres) are included in the Master Plan to the west of residential areas, and easily accessible from Glenwood Avenue. The commercial area is also adjacent to State Highway 99, and accessible from either a frontage road or from a freeway exit at Lander Avenue. In addition to serving the area’s residents, they are anticipated to provide employment opportunities and contribute to the City’s tax base.	
Guiding Policies 2.6-d	Pedestrian orientation of commercial areas. Emphasize compact form and pedestrian orientation in new community and neighborhood commercial areas, in locations that many residents can reach on foot, by bicycle, or by	The project is consistent with the General Plan requirements. A primary goal of Chapter 3 (Land Use and Development Standards) of the Master Plan is the development of a pedestrian-scaled environment to encourage residents, employees, and visitors to	

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		short drives.	walk or bike to various destinations in the community. Open space design should further enhance the pedestrian and cycling environment by the strategic placement of walkways, trails and street bike lanes. Shade trees and drought-tolerant landscaping should be used throughout the Master Plan area. Outdoor furniture and adequate lighting are important components of trails and parks and must be included to promote walking and bike riding.
	Implementing Policies 2.6-g	Local-serving shopping in new neighborhoods. In new master-planned residential neighborhoods, ensure development of neighborhood-oriented mixed-use centers that provide convenience shopping for nearby residents. Local shopping centers should be co-located with uses such as parks, schools, offices, and community facilities in order to create a neighborhood center where multiple tasks can be accomplished in one trip.	The project is consistent with the General Plan requirements. Building design in the Plan Area includes a mixed use component with office and residential uses allowed (pending approval of a Conditional Use Permit). The Community Commercial classification is intended to include a small market, restaurant, professional offices, and personal services, or similar businesses that will provide convenience for the neighborhood residents. Design guidelines will promote mixed use, safe and comfortable access, and integrated public spaces.
<b>3 New Growth Areas and Infrastructure</b>	Guiding Policies 3.1-c	Promote good design in new growth areas. Design new growth and development so that it is compact; preserves natural, environmental, and economic resources; and provides the efficient and timely delivery of infrastructure, public facilities, and services to new residents and businesses.	The project is consistent with the General Plan requirements. Medium density residential will include smaller lots, with densities higher than the City's average. The high density residential development land use classification provides for multi-family homes of 4 or more dwelling units per acre to accommodate 15 to 40 units per gross acre. These may include townhomes, row homes, apartments, and or condominium complexes. Two neighborhood parks are also included, one adjacent to the new elementary school. Infrastructure and facilities will be constructed, dedicated, and easements provided in compliance with the General Plan, zoning, and other City regulations. Services will be provided by the City or City's contracted representatives once water, sewer, and other services have been installed.

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	Guiding Policies 3.1-d	Maintain fiscal stability. Ensure that costs associated with new growth do not exceed revenues, and the City’s fiscal stability is maintained.	The project is consistent with the General Plan requirements. Services as described under Guiding Policy 3.1-c will be funded by a combination of citywide developer impact fees and the Master Plan impact fee program. The Master Plan fee program serves as a way to equitably distribute the necessary costs among all of the developers that benefit, thereby avoiding the burdening of one property with an inequitable amount of improvement costs. Development Impact Fees are collected by the City at the issuance of a building permit to provide funding of improvement and expansion of the City infrastructure to ensure that the City remains fiscally stable.
	Guiding Policies 3.1-f	Provide adequate public services. Ensure the adequacy and quality of public services and facilities for all residents.	The project is consistent with the General Plan requirements. The Plan Area is contiguous with the city limits, with infrastructure already available to the boundaries of the Plan Area. Public services, such as police and fire protection, will be provided by the City.
	Guiding Policies 3.1-g	Master Plan Areas. Plan for growth in phases and discreet master plan areas, so that neighborhoods are fully planned and at least 70 percent of building permits issued prior to the construction of the next master plan area.	The project is consistent with the General Plan requirements. The proposed Master Plan designates a discreet area with fully planned neighborhoods, infrastructure, a school, and parks, and commercial businesses. It will be developed in accordance with City requirements that a minimum of 70 percent of building permits are issued prior to the construction of the next master plan area.
	Guiding Policies 3.1-h	Provide a range of housing types. Ensure a balance of housing types affordable to the complete range of income and age groups.	The project is consistent with the General Plan requirements. The Master Plan includes 170 total acres, with 112.1 acres to be developed for residential use (excluding acreage designated for a ponding basin). Fifteen acres are planned for high-density residential at 15-40 dwelling units per acre, and 97.1 acres at medium density of 7-15 dwelling units per acre. The Plan Area will include single-family homes, townhomes, apartments, row homes, and/or condominium complexes.

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	Master Plan Area Policies Size & Boundaries 3.2-a	Master plan size. A new master or specific plan should be approximately 200 to 400 acres in size, and occupy a logical area, contiguous to the city limits.	The project is consistent with the General Plan requirements. The size of the Master Plan area is 170 acres. Although it is fewer than 200 acres, it occupies a logical area, and is contiguous to the city limits. The land to the west of project area is also planned for inclusion in a future Master Plan area, and lands to the north have been developed, primarily as residential properties.
	Master Plan Area Policies Size & Boundaries 3.2-b	Rights of way within planning boundary. Rights of way, utilities, and agricultural buffers shall all be included within the master plan boundary.	The project is consistent with the General Plan requirements. Utility infrastructure will be constructed, dedicated, and easement provided consistent with the Master Plan, project agreements, and other applicable standards and requirements of the City of Turlock. Rights of way will be required for the planned “Morgan Ranch Arterial,” including adjacent to residentially zoned property, as well as other roadways. Additional right of way must be acquired to retain current Level of Service (LOS) at the Lander and Glenwood intersection, and elsewhere as needed.
	Master Plan Area Policies Size & Boundaries 3.2-c	Urban/rural edge. Where master plan areas meet the edge of the study area boundary (outside of which land remains in agricultural use), deep landscaped setbacks and agricultural buffers shall be used to screen the edge of urban development. Acceptable buffer types and setback requirements are found in Section 6.1.	<p>The Plan Area shares the city limits boundary on the eastern side (Golf Road). The area to the east of the Plan Area includes residential and agricultural use, and is within Stanislaus County.</p> <p>In 1992, Stanislaus County adopted an Agricultural Element for the General Plan that calls for buffers between agricultural and non-agricultural uses, with a standard minimum width of 150 feet. The width may extend to 300 feet or more when the adjacent use requires significant drainage or involves “people-intensive outdoor activities,” such as playing fields. According to the County, buffers must incorporate a solid wall as well as a vegetative screen. Permitted uses within the buffer area include public roadways, utilities, drainage areas, landscaping, parking lots, and walking and biking trails without rest areas (to discourage higher intensity use</p>

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			of the space).
			A seven (7') foot high decorative masonry wall shall be provided for residential development along an arterial roadway, when a Residential zone abuts a Commercial or Public zone, or when a multi-family residential project abuts a separate residential project.
	Master Plan Area Policies Land Uses, Intensities, & Mix 3.2-d	Minimum average densities established for master plan areas. Each master plan, or portion of a master plan, must be built to achieve the minimum average residential density specified on the Land Use Diagram and may go up to an overall average density that is 20 percent higher. (If the developer of a master plan area wishes to build to a higher density than 20 percent above the minimum, then a General Plan amendment and an analysis of environmental impacts would be required.) The minimum density calculation does not apply to land that is to be used for public parks, schools, or other non-residential uses.	The project is consistent with the General Plan requirements. The Land Use Diagram of the General Plan indicates that residential development is of Medium Density (7-15 DU/Ac) or High Density (15-40 DU/Ac). Residential development as planned in the Morgan Ranch Plan Area will comply with the General Plan's required minimum average density, and will exceed the average density for the City, with density ranging from 8.0 to 9.6 dwelling units per acre.
	Master Plan Area Policies Land Uses, Intensities, & Mix 3.2-e	Mix of housing types and densities required. Each area will have a required mix of housing types, including traditional single family, small-lot single family, townhouse, and apartments/condos. The housing mix must achieve the minimum average density specified for each master plan. Regardless of the minimum average density, every master plan must include a minimum of 15 percent multi-family units.	The Plan Area will include single-family homes, and a combination of townhomes, row homes, apartments, and/or condominium complexes. Multi-family units will comprise a range of 33 to 40 percent of dwelling units.
	Master Plan Area Policies Land Uses, Intensities, & Mix 3.2-f	Neighborhood centers required. A "neighborhood center" location shall be zoned and required, and will include a park, school, local-serving retail and/or office uses, and some upper-level or adjacent multifamily residential development. The zoning ordinance shall also be updated to reflect and allow this type of mixed	The project is consistent with the General Plan requirements. The Master Plan proposes two neighborhood centers; one with retail sales and services, and the second with a school and neighborhood park. As noted in the General Plan, drive-through restaurants will be strongly discouraged.

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		<p>use designation. Appropriate non-residential land uses for neighborhood centers in residential areas include, but are not limited to, those in the following list. Drive-through establishments are strongly discouraged.</p> <ul style="list-style-type: none"> <li>• Retail sales</li> <li>• Personal services</li> <li>• Banks and financial institutions</li> <li>• Restaurants, coffee shops, and cafes</li> <li>• Upper level residential</li> <li>• Business and professional offices</li> <li>• Medical and dental offices</li> <li>• Day care centers</li> <li>• Community centers</li> <li>• Cultural institutions (libraries, museums, theaters)</li> <li>• Parks and schools</li> </ul>	
	<p>Master Plan Area Policies Land Uses, Intensities, and Mix 3.1-g</p>	<p>Parks and trails provided in new neighborhoods. The master plan areas will include park sites, a pedestrian/bicycle network of trails, and a multi-use agricultural buffer along the edge (serving park, detention, trail, and buffer purposes). When a school is present, a neighborhood park shall be located adjacent to it whenever feasible. The minimum amount of gross land area in a master plan devoted to parks and public facilities shall be 10 percent, and should generally be higher.</p> <p>Parks are to be provided according to the citywide size and distribution standards listed in the Turlock General Plan Section 4.1.</p>	<p>The project is consistent with the General Plan requirements. Two parks are planned in the Plan Area. A neighborhood park of approximately 6.6 acres is planned adjacent to the school, and a pocket park of 1.5 acres is planned on the south side of the Morgan Ranch Arterial. The larger park is adjacent to the 11.1 planned school, so that the minimum ratio of 1:10 parks to residents will be exceeded. The parks will be connected to neighborhoods through either sidewalks or trail, and will provide connections to bicycle routes within the Master Plan Area. The school is planned for another 11.1 acres. Of the 170-acre Plan Area parks, open space, and public facilities would cover approximately 42.3 acres or 24.9 percent of the total Plan Area.</p>
	<p>Master Plan Area Policies Schools, Parks &amp; Public Facilities 3.2-h</p>	<p>Schools in new neighborhoods. Neighborhoods shall include sufficient schools to support the residential population. Schools shall be located along local, collector, or arterial streets, but entrances may not be located on arterials. Schools are to be provided according to the citywide size and distribution</p>	<p>The project is consistent with the General Plan requirements. An elementary school is planned to be owned and operated by the Turlock Unified School District. The school will be located on Glenwood Avenue, to be accessed by planned 5th Street to the east of the property. The Master Plan includes guidelines for the design of the</p>

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		standards listed in the Turlock General Plan Section 4.3. In most cases, these will be elementary schools; however, given expected population growth, a new middle and high school will also be needed. The master plan areas in which these secondary schools belong are described in the subsequent sections.	school, in compliance with the City's General Plan regulations. The Master Plan Guidelines for Morgan Ranch include an elementary school only.
	Master Plan Area Policies Schools, Parks & Public Facilities 3.2-i	Dedication for public uses. Based on the proportional impacts of development on the demand for public services and facilities, a portion of any new residential neighborhood shall be conveyed or voluntarily committed in fee simple title to the City for public uses, including but not limited to schools, libraries, and police and fire stations. These conveyances must be in a development agreement or other form approved by the City Attorney.	The project is consistent with the General Plan requirements. The development of the Plan Area does not warrant the need for any new public safety facilities to be located within the Plan Area. The City of Turlock charges a public safety impact fee on new development to cover the infrastructure costs associated with the increased needed for public safety services that result from new development. These fees will be used to expand police and fire facilities on a citywide basis as development occurs.
		Land needs for these public uses shall be determined by the citywide standards and policies described in the Turlock General Plan Section 4.2 (Community Facilities) and Section 10.4 (Public Safety).	A new elementary school is planned within the Plan Area. A Master Plan Public Service Financing Study is being developed concurrently with the Master Plan to address the costs and responsibilities for public services and infrastructure expansion, and will meet the requirements of the General Plan.
	Master Plan Area Policies Streets, Blocks, & Connectivity 3.2-j	Consistency with General Plan circulation diagram. In order to ensure connectivity to the existing city, through new neighborhoods, and to the freeway, collector and arterial streets in master plan areas must be designed, and sufficient right-of-way reserved, to comply with the citywide circulation plan described in Chapter 5. Minor deviations may be approved provided that they have no negative impact on the overall circulation network.	The project will be consistent with the General Plan requirements. The new Arterial, Morgan Ranch Arterial, will connect with existing Golf Road to the east, and Lander Avenue to the west. New Connector, 5th Street, will connect with Glenwood Avenue to the north.
	Master Plan Area Policies Streets,	Maximum block sizes. Encourage a fine-grained street pattern, vehicular and pedestrian connectivity, and a	The project is consistent with the General Plan requirements. It is the intent of the Master Plan that block

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	Blocks, & Connectivity 3.2-k	human scale of development by requiring maximum block sizes, measured from street centerline to street centerline: In low density residential areas, block length shall not exceed 660 feet. In medium and high density residential areas, block length shall not exceed 500 feet, with the ideal block length around 300-400 feet.	lengths shall be designed to the lengths specified in the General Plan, so that in the residential areas, block length will not exceed 500 feet, and will be 300-400 feet in length whenever possible.
	Master Plan Area Policies Streets, Blocks, & Connectivity 3.2-l	Limit Cul-de-sacs. Cul-de-sacs, hammerheads, or similar dead-end streets shall not make up more than 10 percent of the total length of all streets in a master plan area. Pedestrian connections through the ends of cul-de-sacs to adjacent through streets are encouraged, especially where such pathways would facilitate connections to parks or schools.	The project is consistent with the General Plan requirements. Cul-de-sacs, hammer-heads, or similar deadend streets shall be designed to the lengths specified in the General Plan, so that they make up 10 percent or less of the total length of all streets in the Master Plan. Pedestrian paths from culs-de-sacs will provide connections to adjacent streets where feasible.
	Master Plan Area Policies Streets, Blocks, & Connectivity 3.2-m	Local street connections between neighborhoods. Where a new residential subdivision occurs adjacent to undeveloped land, which is planned to be developed as part of a master plan, stubs must be provided for future connections to the edge of the property line. Where street stubs exist on adjacent properties, new streets within a new subdivision shall connect to these stubs.	The project is consistent with the General Plan requirements. The Master Plan area is located between State Highway 99 to the south, and previously-developed land to the north. Golf Road is located to the east of the Plan Area. Areas to the east of Golf Road are outside the city limits and are not planned for development. Additionally, one of the goals of the Plan Area is Complete Streets: those streets that promote connectivity between land uses in the Plan Area and connect to areas outside the Plan Area.
	Master Plan Area Policies Streets, Blocks, & Connectivity 3.2-n	Pedestrian and bicycle connections. Continuous and convenient pedestrian and bicycle connections shall be provided from every home in a master plan area to the nearest neighborhood center, school, and park. Pedestrian connections may be in the form of sidewalks, linear parks, or Class I multi-use trails. Bicycle connections may be in the form of Class I, Class II, or Class III bicycle facilities (refer to Section 5.3), and local streets.	The project will be consistent with the General Plan requirements. Table 5-4 in the General Plan designates the typical street elements and widths for arterials, collectors, and local streets. The General Plan designates Golf Road, 5th Street, and the “Morgan Ranch Arterial” as Class II Bikeways. The General Plan designates Glenwood Avenue from Baywood Lane to Golf Road as a Class III Bikeway. The Master Plan outlines the intent for Morgan Ranch to be a pedestrian-scaled environment, “to enhance the pedestrian experience and

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			encourage residents, employees, and visitors to walk or bike to various destinations in the community. Within the Plan Area there are no plans for Class I bikeways.
	Guiding Policies 3.3-d	Meet projected needs. Promote the orderly and efficient expansion of public utilities and the storm drainage system to adequately meet projected needs, comply with current and future regulations, and maintain public health, safety, and welfare.	The project will be consistent with the General Plan requirements. A new pond basin is planned on the southerly side of the Plan Area adjacent to State Highway 99, and south of an existing basin. A 30-inch overflow line is planned to run from the outfall structure at the new basin to an existing 42-inch storm drainage line in Lander Avenue. Plans for the expansion of existing water, electricity, natural gas, and wastewater facilities are detailed in the Master Plan. They have been designed to be consistent with the General Plan requirements and to meet the needs of the Plan Area residents. Police and fire services are provided by the City of Turlock Police Department and the City Fire Department. Projects proposed as part of the Master Plan will comply with City recommendations regarding safety and security. The development of the Plan Area does not warrant the need for any new public safety facilities to be located within the Plan Area. Impact fees for these services will cover the cost of increased need resulting from the new development.
	Guiding Policies 3.3-e	Coordinate infrastructure provision with growth. Coordinate capital improvements planning, design, and construction for all municipal service infrastructure with the direction, extent, and timing of growth.	The project is consistent with the General Plan requirements. The Master Plan provides details on the increased need for infrastructure, proposed design, and the financing for expanded infrastructure. The City of Turlock requires that each Master Plan area be significantly built out before another can be started, to ensure that infrastructure is well designed and then completed based on the timing of growth. Additionally, phasing of the Plan Area will occur in the order that landowners choose to develop, and the City will determined the phasing of infrastructure improvement at the time of development.

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	Guiding Policies 3.3-f	Utility Rates. Continue to establish water and wastewater rates that are sufficient to operate, maintain, and upgrade (for current and future regulatory requirements) the City’s water, wastewater, and stormwater infrastructure.	The project is consistent with the General Plan requirements. The City will continue to conduct periodic surveys and studies to ensure that utility rates reflect the costs required to operate, maintain, and upgrade the City’s utilities and associated infrastructure.
	Guiding Policies 3.3-g	Development Impact Fees. Continue to equitably distribute costs associated with serving new development through the Development Impact Fee program.	The project is consistent with the General Plan requirements. The City of Turlock will use a combination of development impact fees, community facilities district fees, and landscape and lighting district fees to fund the construction and maintenance of public facilities in the Plan Area, using a three-tiered development impact fee system.
	Implementing Policies Potable Water 3.3-l	Infrastructure Construction. Design and construct water system infrastructure as needed to meet current and future water demands and system requirements.	The project is consistent with the General Plan requirements. Domestic water services will be provided by the City of Turlock. A water supply system of 1-inch and 12-inch lines will be constructed and looped into the City’s existing water system and four connection points. A new City water well will be drilled within the Plan Area.
	Implementing Policies Potable Water 3.3-m	Conservation. Continue to implement the comprehensive water conservation program for both new development and existing residences and businesses. Revise and improve the program as needed. Continue water conservation efforts, including the watering schedule, monitoring by Municipal Services staff, and advisory notices to households and businesses in violation of water conservation standards. Continue to reduce per capita consumption through ongoing education and outreach efforts.	The project is consistent with the General Plan requirements. The City has implemented numerous water conservation measures to conserve water and reduce water waste. A complete listing of these measures is included in Chapter 6 of the Master Plan.
	Implementing Policies Potable Water 3.3-n	Recycled Water. Continue and expand the use of recycled water from the Turlock Regional Water Quality Control Facility for non-potable purposes, including power plant cooling, landscape irrigation, agricultural irrigation, and other	The project is consistent with the General Plan requirements. The Master Plan includes the City’s water recycling policies and programs, including the use of recycled water for landscape irrigation and for power plant cooling.

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		uses. Plan, design, and construct infra-structure needed to increase the use of recycled water.	
	Implementing Policies Wastewater Systems 3.3-u	Rate and Fee Studies. Supplement the wastewater system master plans with rate and fee studies to ensure adequate funds are collected through the City’s wastewater rates and development impact fees. Implement rate and fee increases as needed.	Rate and Fee Studies are conducted by the City on an as-needed basis. The City is currently conducting a fee study for its water rates, and development impact fees for utilities and services are updated by the City on a quarterly basis.
	Implementing Policies Wastewater Systems 3.3-v	Infrastructure Construction. Design and construct wastewater system infrastructure as needed to safely convey, treat and recycle, and dispose of current and future wastewater flows and achieve future regulatory and system requirements.	No additional improvements to the existing Turlock Regional Water Quality Control Facility are anticipated due to the development of the Plan Area. The Facility’s capacity is 20 million gallons per day. A sewer fee is charged to all new development to cover infrastructure costs at the Facility.
	Implementing Policies Stormwater 3.3-x	Rate and Fee Studies. Supplement the stormwater master plan with rate and fee studies to ensure adequate funds are collected through the City’s stormwater rates and development impact fees. Implement rate and fee increases as needed.	The project is consistent with the General Plan requirements. Rate and fee studies are conducted on an as-needed basis: the City is conducting a water rate study in the spring of 2013. Each quarter the City updates the development impact fee schedules to account for the increase in the cost of infrastructure construction.
	Implementing Policies Stormwater 3.3-y	Infrastructure Construction. Design and construct stormwater system infrastructure as needed to safely convey, detain, and dispose of current and future stormwater flows, protect water quality, and meet regulatory requirements.	The project will be consistent with the General Plan requirements. An existing stormwater basin is located within the Plan Area, adjacent to State Highway 99, and used by Caltrans. A new basin will be constructed south of the existing one to detain storm water from the Plan Area – except storm water runoff from the existing gas station and car wash sites, and the north side of Glenwood Avenue, which drains to lines that carry the water to existing basins north of the Plan Area. The new storm drainage lines include a 30-inch overflow line to run from the outfall structure at the new basin to an existing 42-inch storm drainage line in Lander Avenue. The basins will not utilize over 25% of land designated for parks.

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	Implementing Policies Stormwater 3.3-z	Detention Basin Locations. Develop new detention basins to be compatible with adopted land use plans, such as within agricultural buffer strips, parks, or in dedicated detention basin sites. Only a fraction (not over 25 to 30 percent) of any park should be used for detention basins.	The project will be consistent with the General Plan requirements. An existing stormwater basin is located within the Plan Area, adjacent to State Highway 99, and used by Caltrans. A new basin will be constructed south of the existing one to detain storm water from the Plan Area – except storm water runoff from the existing gas station and car wash sites, and the north side of Glenwood Avenue, which drains to lines that carry the water to existing basins north of the Plan Area. The new storm drainage lines include a 30-inch overflow line to run from the outfall structure at the new basin to an existing 42-inch storm drainage line in Lander Avenue. The basins will not utilize over 25% of land designated for parks.
	Implementing Policies Stormwater 3.3-aa	Detention Basin Joint Uses. Where feasible, allow joint uses within the detention basins such as recreational open space, parks, and athletic fields.	The project will be consistent with the General Plan requirements. The roughly 1.5-acre pocket park south of the “Morgan Ranch Arterial” will also expand its utility by being designed together with the storm water drainage basin needed for the Plan Area. The storm water drainage basin will be built, adjacent to the pocket park, designed as a shared use facility that allows for recreational use in the basin when there are no storm events. Typically, this can be done with a two tiered basin. This park/basin concept has been implemented successfully in other areas of the City.
	Implementing Policies Stormwater 3.3-ad	Fencing around and near basins. Fencing is not to be used around basins in dual-use areas. Fencing may be used around equipment needed for basin operation, such as pumps. In these cases, it should be of a decorative material that also discourages graffiti (such as wrought iron), screened, and landscaped.	The project is consistent with the General Plan requirements. The installation and maintenance of the basin will be in compliance with requirements of the General Plan and other local, State, and Federal regulations.
	Implementing Policies Waste Management & Recycling 3.3-ah	Reduce Solid Waste. Maintain the City’s long-standing commitment to innovative solutions that reduce solid waste and increase diversion rates. Continue to expand diversion	The project is consistent with the General Plan requirements. Solid waste services will be provided by the City. A three-can collection system will be used for recyclables, green waste, and all

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<b>4 Parks, Schools, and Community Facilities</b>	Guiding Policies 4.1-a	opportunities to ensure that the City, through participation in the Stanislaus County Regional Solid Waste Planning Agency, continues to surpass State targets for solid waste reduction.  High-Quality Park System. Develop a high quality, diversified public park system that provides a variety of recreational opportunities for all City residents.	other waste. This system has helped the City divert a minimum of 50% of solid waste from the Fink Road landfill, as required by State law. Residents and businesses in the Plan Area will be encouraged to reduce solid waste.  The project will be consistent with the General Plan requirements. The 6.6-acre neighborhood park will be located next to the elementary school site in order to take advantage of the ability to share facilities. The elementary school will provide outdoor basketball courts and ball fields for baseball, soccer, and other organized and semi-organized team sports. The neighborhood park will provide children’s play areas, shaded landscaping, benches, and picnic areas. Together the two sites will provide facilities for the full range of outdoor park activities and meet the 8-10 acre park size requirement identified in the City’s Park Master Plan (2003) for neighborhood parks. The roughly 1.5-acre pocket park south of the “Morgan Ranch Arterial” will be built at street level with children’s play area, benches, and picnic tables.
	Guiding Policies 4.1-c	Cooperation With School District. Continue cooperative efforts with the Turlock school district through joint use agreements for park and recreational facilities.	The project is consistent with the General Plan requirements. It is anticipated that through arrangements between the School District and City, the school can use the neighborhood park during the weekday for outdoor learning activities and, the public can use the school playground facilities after school and on weekends for sports activities.
	Guiding Policies 4.1-d	Park Fees and Land Dedication. Follow the City’s Park Improvement Fee Nexus Study in determining the collection and use of park fees and park land dedication, and periodically update to ensure equitable distribution of cost between existing and new residents, businesses, and property owners.	The project is consistent with the General Plan requirements. Although the General Plan does not require location of a community park in the Morgan Ranch Master Plan, a requisite for payment of an in lieu fee was identified in Chapter 5. Additionally, Chapter 7 identifies payment of fees as determined by implementation of the Morgan Ranch Master Plan Public Services Financing Study that is being prepared concurrently with this Master Plan. Parks, the school, and other community

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			facilities will observe all other relevant policies of the General Plan.
	Implementing Policies 4.1-h	Neighborhood-Serving City Parks. Acquire and develop eight new neighborhood-serving city parks, including three in the Southeast 2 Master Plan Area, two in the Northwest, and one each in the Southeast 1, 4, and 5 Master Plan Areas. Place neighborhood parks at the core of new neighborhoods and co-locate parks and school sites where possible, as depicted on the Parks diagram.	The project will be consistent with the General Plan requirements. Morgan Ranch is also known as the Southeast 1 Plan Area. The Plan Area will include the 6.6-acre neighborhood park and a 1.5-acre pocket park. The neighborhood park will be located adjacent to the elementary school, while the pocket park will be located south of the “Morgan Ranch Arterial.”
	Implementing Policies 4.1-i	Neighborhood School Parks. Maintain joint-use relationship with Turlock Unified School District allowing public access to and use of school playfields during nonschool hours. Coordinate with the School District in the location and design of school properties to facilitate flexible use of play fields.	The project is consistent with the General Plan requirements. The City and the School District have made arrangements to allow the use of the neighborhood park during the weekday for outdoor learning activities, and the public can use the school playground facilities after school and on weekends for sports activities.
	Implementing Policies 4.1-k	Recreation Corridors and Greenways. Develop a system of linear corridors designed to provide pedestrian and bicycle linkages through and between neighborhoods, connections between major open spaces and recreational facilities and greenbelts at the City’s edge. In new development areas (see Chapter 3), these must be continuous, as shown on Figure 4-1.	The project is consistent with the General Plan requirements. The Master Plan design provides pedestrian/bicycle links from neighborhoods to the recreation facilities with safe and easy access. Class 2 bicycle lanes will be included along Golf Road on the eastern perimeter (connecting the City to the north and State Highway 99 to the south; along the Morgan Ranch Arterial, (connecting the eastern perimeter to the northwestern corner at Lander Avenue); and along 5th Street from Glenwood Avenue to the Morgan Ranch Arterial. This bicycle lane will parallel the eastern boundary of the school. A Class I bicycle route will connect Golf Road on the east to Lander Avenue to the West of the Plan Area along its northern perimeter.
	Implementing Policies 4.1-l	Community and Neighbor-hood Parks. Provide 3.5 acres of park land per 1,000 residents, aiming for a citywide ratio of between 2-to-1 and 3-to-1 for neighborhood and community park land. Neighbor-	The project is consistent with the General Plan requirements. Park design guidelines recommend a ratio of 2.6 acres of park per 1,000 residents. This ratio has been used for the 6.6-acre neighborhood park, as well as the 1.5-

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		hood parks include public neighborhood-serving city parks, neighborhood school parks, and recreation corridors.	acre pocket park.
	Implementing Policies 4.1-n	Park Location Criteria. Locate public parks in visible and accessible locations, in accordance with location criteria specified in this Element. Park locations may be adjusted within each master plan sub-area, but must remain within the boundaries of the sub-area.	The project will be consistent with the General Plan requirements. The parks have been planned adjacent to the planned elementary school and residential areas. The larger park will be centrally located at the north boundary, while the smaller park will be located at the southern boundary. Both locations are easily accessed by arterial streets and bicycle lanes or bicycle routes.
	Implementing Policies 4.1-o	Minimum Park Buildout. All new parks must be developed to the minimum standards established in the Park Improvement Nexus Fee Study. These standards may be periodically updated.	The project is consistent with the General Plan requirements. Parks will be developed utilizing the Parks Master Plan (Report last reviewed in 2003) and Park Improvement Nexus Fee Study. Guidelines for parks in the Plan Area are included in Chapter 5 of the Master Plan, and are consistent with those of the General Plan.
	Implementing Policies 4.1-p	Design for Park Safety. Ensure safety of users and security of facilities through lighting, signage, fencing, and landscaping, as appropriate and feasible, following guidelines established in the Parks, Recreation and Open Space Master Plan.	The project is consistent with the General Plan requirements. The parks are planned to adhere to City and ADA standards for safety and maintenance. This includes the guidelines as included in the Parks, Recreation and Open Space Master Plan.
	Implementing Policies 4.1-q	Park Improvement Fees. Following the specifications of the Park Improvement Nexus Fee Study, calculate park fees to enable purchase of acreage and provision of off-site park improvements for 3.5 acres of parkland per 1,000 residents added and require payment of these fees and/or land dedication as a condition of all new residential development. This park land may not be used for dual-use storm drainage basins.	The project is consistent with the General Plan requirements. The General Plan, adopted in September 2012, requires 2.3 to 2.6 acres of parkland per 1,000 residents for neighborhood parks, with average of 3.5 acres for all the City parks. The 2003 Park Master Plan requires a full range of outdoor park activities with parklands totaling 8 to 10 acres in this Plan Area. The Plan Area will include 8.1 acres with two parks, and additional land from the adjacent school, so that the requirement for parkland is exceeded. These areas do not include land set aside for storm drainage basins.

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	Implementing Policies 4.1-z	Native Plants. Landscaping should use native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, conserve water, and provide habitat.	The project is consistent with the General Plan requirements. Chapter 5 of the Master Plan requires that all park and open space improvements be designed by a licensed landscape architect. Additionally, “Parks shall be designed to Cal Green standards, landscaped for easy maintenance and water efficiency. Play and picnic areas shall be provided with an adequate amount of shade” and “native and drought tolerant plants shall be utilized when possible.”
	Implementing Policies 4.3-f	New School Sites. Require that school sites are designated and reserved for school use as part of future master plans. The General Plan anticipates one future elementary school in each of the following Master Plan areas: Southeast 1, 2, 3 and 5, and Northwest; and one within the existing City. Provide needed facilities concurrent with phased development.	The project will be consistent with the General Plan requirements. Morgan Ranch, also known as Southeast 1 Master Plan Area, will include a new elementary school.
<b>5 Circulation</b>	Guiding Policies 5.2-a	A safe and efficient roadway system. Promote a safe and efficient roadway system for the movement of both people and goods.	The project will be consistent with the General Plan requirements. The Plan Area will utilize existing arterial streets on the north, east and west sides. The new “Morgan Ranch Arterial” will be constructed to run in an east-west direction, and the new 5th Street will be constructed on the west side of the planned school. These and other, more minor streets will be planned to meet the City’s goals for Complete Streets. Roads are designed to accommodate all expected users, including pedestrians, bicyclists, and transit users, with safe, comfortable, and attractive access.
	Guiding Policies 5.2-d	Design for street improvements. The roadway facility classifications indicated on the General Plan circulation diagram (Figure 5-2) shall be the standard to which roads needing improvements are built. The circulation diagram depicts the facility types that are necessary to match the traffic generated by General Plan 2030 land use buildout, and therefore represent the	The project is consistent with the General Plan requirements. Lander Road is built out to its ultimate 4-lane width. According to the traffic report which was completed for this EIR, based on City direction the Morgan Ranch Arterial was analyzed as a four-lane divided arterial; however, the City is open to considering the roadway as a 2-lane minor arterial with roundabouts, except a portion near Lander Avenue,

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		maximum standards to which a road segment or intersection shall be improved.	which will be built as a 4-lane within this commercial zoned area. Golf Road will be constructed as a 2-lane arterial south of Glenwood Avenue. Glenwood Avenue will not be widened or otherwise improved, as it is a 6-lane roadway. Lander Avenue, Golf Road, and Morgan Ranch Arterial will be designated as truck routes, in accordance with the General Plan. 5th Street will provide a north-south connection between the school and residents, as well as residents to the north of the Plan Area.
	Guiding Policies 5.2-e	Use of existing facilities. Make efficient use of existing transportation facilities, and improve these facilities as necessary in accordance with the circulation diagram.	The project is consistent with the General Plan requirements. Lander Road is built out to its ultimate 4-lane width. According to the traffic report which was completed for this EIR, based on City direction the Morgan Ranch Arterial was analyzed as a four-lane divided arterial; however, the City is open to considering the roadway as a 2-lane minor arterial with roundabouts, except a portion near Lander Avenue, which will be built as a 4-lane within this commercial zoned area. Golf Road will be constructed as a 2-lane arterial south of Glenwood Avenue. Glenwood Avenue will not be widened or otherwise improved, as it is a 6-lane roadway. Lander Avenue, Golf Road, and Morgan Ranch Arterial will be designated as truck routes, in accordance with the General Plan. 5th Street will provide a north-south connection between the school and residents, as well as residents to the north of the Plan Area.
	Guiding Policies 5.2-g	Reduce Vehicle Miles Traveled. Through layout of land uses, improved alternate modes, and provision of more direct routes, strive to reduce the total vehicle miles traveled.	The project will be consistent with the General Plan requirements. The addition of Morgan Ranch Arterial and 5th Street will provide more direct access within the Plan Area. The commercial area will be easily accessible from Lander Road, Glenwood Avenue and State Highway 99. The school and parks are centrally located.

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	Guiding Policies 5.2-h	Circulation System Enhancements. Maintain projected levels of service where possible, and ensure that future development and the circulation system are in balance. Improve the circulation system as necessary, in accordance with the circulation diagram and spacing/access standards, to support multimodal travel of all users and goods.	The project is consistent with the General Plan requirements. A roundabout is planned at the intersection of Glenwood Avenue and Lander Avenue to improve circulation. Golf Road, north of and Glenwood Avenue, will be widened in accordance with the General Plan. Bicycle lanes, sidewalks, and a median are planned for the Morgan Ranch Arterial, Golf Road, and Lander Avenue, as well as Glenwood Avenue and 5th Street.
	Implementing Policies 5.2-r	Follow circulation plan diagram. Locate freeways, expressways, and arterials according to the general alignment shown in the Circulation Plan Diagram. Slight variation from the depicted alignments for collectors will not require a General Plan amendment.	The project will be consistent with the General Plan requirements. Lander Road is built out to its ultimate 4-lane width. The Morgan Ranch Arterial will be constructed as a 2-lane, minor arterial, except a portion near Lander Avenue, which will be built as a 4-lane within this commercial zoned area. Golf Road will be constructed as a 2-lane arterial south of Glenwood Avenue. Glenwood Avenue will not be widened or otherwise improved, as it is a 6-lane roadway. Lander Avenue, Golf Road, and Morgan Ranch Arterial will be designated as truck routes, in accordance with the General Plan. 5th Street will provide a north-south connection between the school and residents, as well as residents to the north of the Plan Area.
	Implementing Policies 5.2-t	Follow adopted City standards. Build freeways, expressways, arterials, and collector streets in accordance with adopted city standards. Where these standards deviate from those set forth in the General Plan, amend the city standards to be consistent with the General Plan.	The project is consistent with the General Plan requirements. Installation of Morgan Ranch Arterial and 5th Street, and widening of other streets is planned in accordance with the General Plan. See also Policy 5.2-r.
	Implementing Policies 5.2-u	Roundabouts. Roundabouts may be used in place of signalized intersections on any roadway facility or intersection type. Roundabouts are particularly encouraged at the intersection of two collector streets.	The project is consistent with the General Plan requirements. A single-lane roundabout is planned at the intersection of Lander Avenue and Morgan Ranch Arterial. Lander Avenue is a 6-lane arterial and Morgan Ranch Arterial will be a 2-lane minor arterial.

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	Implementing Policies 5.2-ac	Impacts of new development. No new development will be approved unless it can show that required service standards (accessibility, spacing and capacity in the circulation diagram and in Section 5.2) are provided on the affected roadways.	As concluded in traffic report completed for the Morgan Ranch Master Plan, the proposed project is consistent with the 2030 General Plan policies; no mitigation measures besides payment of appropriate development impact fees are required for the proposed project under General Plan Buildout conditions. Although the Lander Avenue roadway segment from SR 99 to E. Glenwood Avenue is projected to operate at LOS E, the roadway segment is already built as a 4-Lane Arterial and therefore no further improvements are required, as described in Policy 5.2-d of the General Plan Circulation Element.
	Implementing Policies 5.2-ag	New development pays fair share. Continue to require that new development pay a fair share of the costs of street and other local transportation improvements based on traffic generated and impacts on service levels. New development in unincorporated areas that benefit from Turlock’s transportation infrastructure shall also pay to support the system, through the Area of Influence fee (see Policy 5.2-p).	The project is consistent with the General Plan requirements. A Master Plan Fee Program will be implemented to provide an infrastructure financing mechanism and ensure that costs of infrastructure are equitable to all developers. This type of program has proven successful in other City of Turlock master plan areas. Fees based on the master plan area typically cover costs for major road improvements. An infrastructure analysis and impact fee study will be prepared immediately following adoption of the Master Plan. The fee program is likely to include Morgan Ranch Arterial, Glenwood Street and Golf Road widening, 5th Street, new traffic signals and new off-site traffic signals and road widening, as determined by the Traffic Impact Study and EIR.
	Implementing Policies 5.2-ak	Landscaping requirements. Where roadway facilities are designed with landscaping adjacent to the property line, the property owner shall be able to credit the landscaping in public right of way towards their landscaping requirement on their property. In return, the property owner is held responsible for the maintenance and upkeep of the landscape frontage.	The project is consistent with the General Plan requirements. Landscaping requirements for residential and commercial development will be in accordance with the City’s General Plan, Municipal Code design and/or development standards, and the City’s Design Guidelines as detailed in the Land Use and Development Standards for Morgan Ranch. These standards and guidelines include the responsibility of the property owner to maintain landscaping on the property.

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	Implementing Policies 5.2-aj	Street Trees. Street trees in landscape strips and parkways strips must be placed near enough to the sidewalk to provide canopy. In commercial and industrial areas, street trees shall be located within public right-of-way behind the sidewalk. In residential areas, street trees shall be located within the parkway strip.	The project is consistent with the General Plan requirements. All streets within the Plan Area will have sidewalks on both sides. The required minimum width of the sidewalk is intended to allow two persons to walk side by side. Parkway strips with street trees serve to separate pedestrians from motor vehicles and provide shade relief on warmer days. Local street will all include landscaped parkway strips. Trees will be installed per Landscape Standards.
	Implementing Policies 5.2-ak	Medians. Medians shall be planted with street trees.	The project is consistent with the General Plan requirements. Parkway strips are planned for all local streets (e.g., in residential areas), and all other streets with a median shall include street trees.
	Implementing Policies 5.2-ar	Right of Way consistency. To the extent possible, new roadways shall be designed so that they maintain a consistent right of way along the length of the facility, regardless of adjacent land use changes. In other words, for example, a two-lane collector that passes through a residential area and then a commercial area shall not change width as the land uses change.	The project is consistent with the General Plan requirements. Consistent rights of way will be included on local streets (minimum 50 feet between access point and curb return of intersection with arterial or collector street). Additional right of way will need to be acquired at some locations. Width changes will occur in some locations, based on traffic patterns and need, and not on land use changes. For example, Golf road will increase from a 2-lane to a 4-lane roadway north of Glenwood Avenue.
	Guiding Policies 5.3-a	Promote walking and bicycling. Promote walking and bike riding for transportation, recreation, and improvement of public and environmental health.	The project is consistent with the General Plan requirements. A roundabout is planned at the intersection of Glenwood Avenue and Lander Avenue to improve circulation. Golf Road, north of and Glenwood Avenue, will be widened in accordance with the General Plan. Bicycle lanes, sidewalks, and a median are planned for the Morgan Ranch Arterial, Golf Road, and Lander Avenue, as well as Glenwood Avenue and 5th Street.
	Guiding Policies 5.3-b	Meet the needs of all users. Recognize and meet the mobility needs of persons using wheelchairs and those with other mobility limitations.	The project is consistent with the General Plan requirements. Sidewalks and access will be ADA compliant. Developers will be encouraged to include ADA and other accommodations to private walkways and public

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			buildings, as well as residences and businesses.
	Guiding Policies 5.3-c	Develop a safe and efficient non-motorized circulation system. Provide safe and direct pedestrian routes and bikeways between places.	The project will be consistent with the General Plan requirements. The Master Plan design provides pedestrian/bicycle links from neighborhoods to the recreation facilities with safe and easy access. Class 2 bicycle lanes will be included along Golf Road on the eastern perimeter (connecting the City to the north and State Highway 99 to the south; along the Morgan Ranch Arterial, (connecting the eastern perimeter to the northwestern corner at Lander Avenue); and along 5th Street from Glenwood Avenue to the Morgan Ranch Arterial. This bicycle lane will parallel the eastern boundary of the school. A Class I bicycle route will connect Golf Road on the east to Lander Avenue to the West of the Plan Area along its northern perimeter.
	Implementing Policies 5.3-d	Integration of land use planning. Implement land use policies designed to create a pattern of activity that makes it easy to shop, play, visit friends, and conduct personal business without driving.	The project will be consistent with the General Plan requirements. The Plan Area has been designed as a Compact Residential Neighborhood, as designated on the General Plan Land Use Diagram for the SE 1 Master Plan Area. This Plan Area is designed to encourage pedestrian and bicycle use, with easy, safe access to shopping, parks and the elementary schools. Commercial development is located at the western edge of the Plan Area, and other parts of the City to the north are easily accessed by Lander Avenue or Golf Road.
	Implementing Policies 5.3-e	Provision of bicycle facilities. Facilities for bicycle travel (Class I bike/multiuse paths; Class II bike lanes, and Class III bike routes) shall be provided as shown on Figure 5-3. Bike lane width shall follow the standards in tables 5-4 and 5-5. In cases where existing right of way constraints limit development of Class II facilities, Class III signage and demarcation may be permitted at the discretion of the City Engineer. Deviations from these standards and from the routing shown on the diagram shall	The project is consistent with the General Plan requirements. Class 2 bicycle lanes and Class 3 bicycle routes are planned on major roadways throughout the Plan Area and on the northern and eastern peripheries. Standards as detailed in the General Plan will be implemented.

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		only be permitted at the discretion of the City Engineer.	
	Implementing Policies 5.3-h	Universal design. Provide pedestrian facilities that are accessible to persons with disabilities and ensure that roadway improvement projects address accessibility and use universal design concepts.	The project is consistent with the General Plan requirements. Pedestrian facilities will be ADA compliant.
	Guiding Policies 5.6-b	Minimize impacts and hazards. Plan and design electricity, gas, oil, and telecommunication transmission facilities to minimize visual impacts, preserve existing land uses, avoid natural and cultural resources, and minimize safety risks.	The project is consistent with the General Plan requirements. Electricity service in Turlock is provided by Turlock Irrigation District (TID). There are existing 69 KV overhead power lines along Golf Road and Glenwood Avenue. These will be abandoned by TID prior to implementation of the Master Plan or relocated and undergrounded to accommodate road widening. Natural gas is provided by PG&E. A 6-inch gas main is located in Lander Avenue with gas mains in both Glenwood Avenue and Golf Road. AT&T has existing underground communication lines from State Highway 99 along Golf Road north, until converting to overhead lines. The lines continue around the periphery of the Plan Area, with only some portions underground. Charter Communication has existing underground cable on Glenwood Avenue from Lander Avenue to Golf Road. An existing overhead cable on the electrical poles is located on the south side of Glenwood Avenue, from Lander Avenue to Golf Road. All improvements to dry utilities to accommodate development in the Plan Area will be completed by the developer as projects occur. City policy requires undergrounding of all utilities. This will minimize safety risks and visual impacts. Most undergrounding will occur in conjunction with road improvements, which will minimize additional impacts to natural and cultural resources.
	Implementing Policies 5.6-e	Identify corridors in master plans. New transmission corridors should be identified to the extent feasible in	The project is consistent with the General Plan requirements. Electricity service in Turlock is provided by

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		all master plans created for new growth areas.	Turlock Irrigation District (TID). Lines exist for electrical power along Golf Road and Glenwood Avenue. AT&T has existing underground communication lines from State Highway 99 along Golf Road north. The lines continue around the periphery of the Plan Area, with only some portions underground. Charter Communication has existing underground cable on Glenwood Avenue from Lander Avenue to Golf Road. An existing overhead cable on the electrical poles is located on the south side of Glenwood Avenue, from Lander Avenue to Golf Road. All improvements to dry utilities to accommodate development in the Plan Area will be completed by the developer as projects occur. City policy requires undergrounding of all utilities. Additional lines will be installed as needed to provide service within the Plan Area.
<b>6 City Design</b>	Guiding Policies 6.1-c	Promote compact growth. Maintain a compact growth pattern to avoid sprawl and preserve agricultural land and open space.	The project will be consistent with the General Plan requirements. The Morgan Ranch (or SE 1) Master Plan Area is included in the General Plan as a Compact Neighborhood. It is within the city limits, and will not require annexation of agricultural land. Residential development is expected to be of medium and high density.
	Implementing Policies 6.1-f	Contiguous growth. Continue present policies of requiring growth to be contiguous to existing urban development.	The project is consistent with the General Plan requirements. The Plan Area is contiguous with the city limits, with infrastructure already available to the boundaries of the Plan Area. Public services, such as police and fire protection, will be provided by the City.
	Guiding Policies 6.2-a	Develop complete neighbor-hoods. Encourage new residential growth in the form of neighborhoods, characterized by a mix of housing types and a well-defined neighborhood center.	The project is consistent with the General Plan requirements. The Master Plan includes a mixture of land uses, including medium and high density residential, office, community commercial, parks and a new elementary school. Two neighborhood centers are planned – one with retail sales and services and the second with a school and a neighborhood park.

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	Guiding Policies 6.2-b	Promote housing type diversity and land use mix. Require diversity of housing types in each neighborhood and a mix of uses in the neighborhood centers.	The project is consistent with the General Plan requirements. Chapter 3 of the Morgan Ranch Master Plan includes detailed standards and design guidelines addressing a variety of factors including neighborhood layout; lot configuration; building orientation for all land uses; garage orientation and the requirement for recessed garages; landscaping design and materials; bicycle and pedestrian routes providing connectivity between land uses, including neighborhoods, the school, and the two parks; and detailed standards for lighting, signage, and fencing. The Master Plan identifies guidelines for quality residential development for both medium and high density development. The standards and guidelines meet, and often times exceed, the General Plan policies relating to the design of the City and the General Plan requirements for the development of a master plan for the Morgan Ranch area. The Urban Design components of the Master Plan will observe all other relevant policies of the General Plan.
	Guiding Policies 6.2-d	Encourage community orientation. Improve the community orientation of new residential developments.  A community orientation calls for greater attention to the relationship between residences and shared spaces and does not require sacrifice of privacy or amenities.	The project will be consistent with the General Plan requirements. The concept of community orientation has been incorporated into the Master Plan by careful neighborhood layout and lot configuration, and standards for residential development and landscaping. Schools and parks, including the neighborhood center, and shopping centers have been located to encourage a community orientation with shopping, recreational opportunities, schools, and an attractive living environment.
	Implementing Policies 6.2-h	Design Principles. Ensure that development in the new neighborhoods is in accordance with the design principles established in Section 6.8, the policies specific to each master plan area established in Section 3.3, and any subsequent guidelines that may be established.	The project is consistent with the General Plan requirements. Chapter 3 of the Morgan Ranch Master Plan includes detailed standards and design guidelines addressing a variety of factors including neighborhood layout; lot configuration; building orientation for all land uses; garage orientation and the requirement for recessed garages; landscaping design and materials; bicycle and pedestrian routes providing connectivity between

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			land uses, including neighborhoods, the school, and the two parks; and detailed standards for lighting, signage, and fencing. The Master Plan identifies guidelines for quality residential development for both medium and high density development. The standards and guidelines meet, and often times exceed, the General Plan policies relating to the design of the City and the General Plan requirements for the development of a master plan for the Morgan Ranch area. The Urban Design components of the Master Plan will observe all other relevant policies of the General Plan.
	Guiding Policies 6.3-d	Provide attractive, landscaped streetscapes. Enhance the visual attractiveness of the community by providing attractive streetscapes, particularly along major expressways, arterials and collector streets. Utilize landscaping that is native and drought-tolerant, and that minimizes upkeep and maintenance.	The project is consistent with the General Plan requirements. All streets within the Plan Area will have sidewalks on both sides. The required minimum width of the sidewalk is intended to allow two persons to walk side by side. Parkway strips with street trees serve to separate pedestrians from motor vehicles and provide shade relief on warmer days. Local street will all include landscaped parkway strips. Trees will be installed per Landscape Standards.
	Implementing Policies 6.3-e	Block size and maximum street spacing. Streets in neighborhoods should be designed to maximize connectivity for automobiles, cyclists, and pedestrians. Maximum spacing between local streets, or intersections of local streets with larger roads, shall be 660 feet. The preferable, typical block size in a residential neighborhood is in the range of 200 by 600 feet. As a condition of project approval, require circulation patterns of all residential and neighborhood centers to conform to maximum spacing between through-streets (exclusive of alleys), as depicted in Figure 6-5 and Section 5.2, unless access conditions and standards prevent their attainment. Culs-de-sac are generally discouraged.	The project is consistent with the General Plan requirements. Tentative maps shall be reviewed and approved by the Turlock Planning Commission pursuant to TMC Title 11-5 Subdivision Maps, Article 7. A lot fit plan will be submitted with an application for a tentative map demonstrating conformance with setback, driveway, and driveway spacing requirements. All development will be subject to the City’s Design Guidelines. Complete Streets will be designed to promote connectivity between land uses and connect to areas outside the Plan Area. By complying with established design guidelines and standards, block size will be in accordance with the General Plan requirements. Culs-de-sac will be limited.

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	Implementing Policies 6.3-j	Undergrounding of utility wires. Continue to require undergrounding of utility lines in new developments.	The project is consistent with the General Plan requirements. Gas, electric, cellular telephone and other dry utilities will be underground.
	Guiding Policies 6.4-c	Conserve energy and water. Reduce demand for and consumption of energy and water through site planning techniques.	The project is consistent with the General Plan requirements. The City has implemented numerous water conservation measures to conserve water and reduce water waste. A complete listing of these measures is included in Chapter 6 of the Master Plan.
	Implementing Policies 6.4-f	On-site stormwater management. Facilitate ground-water recharge and natural hydrological processes by allowing stormwater to infiltrate the ground on-site and/or be collected for reuse in landscaping. Any on-site stormwater drainage facilities must be designed to drain fully within 72 hours. Update the standards, specifications, and drawings, as well as the development review process as needed to reduce peak-hour stormwater flow and increase groundwater recharge.	The project will be consistent with the General Plan requirements. A detention basin will be developed within the Plan Area, to be located north of State Highway 99. It will comply with design standards and General Plan standards for dual use basins. Stormwater runoff will be utilized for reuse in landscaping.
	Guiding Policies 6.7-e	Pedestrian scale and neighborhood character. Require buildings and signs to be scaled to a neighborhood character and designed to encourage pedestrian activity and comfort.	The project is consistent with the General Plan requirements. The Master Plan includes height limits, lot sizes, setbacks, and other criteria to ensure that residences and other structures are scaled to a neighborhood character. Access by residents to parks, schools, and commercial and office areas is direct and diverse, with sidewalks and bicycle paths throughout the Plan Area. Also see Policy 2.6-d.
	Guiding Policies 6.7-f	Support transit. Ensure that neighborhoods are designed to support transit stops in proximity to neighborhood centers and/or clusters of higher density residences.	The project is consistent with the General Plan requirements. The City does not anticipate Public Transit fixed routes to serve the Plan Area as soon as the area develops. However, the Plan Area's circulation system is designed to allow for the City to add bus service in the future. Future bus stop locations would likely be located at the future Morgan Ranch Arterial, 1) east of Lander Avenue, 2) near 5th Street, and near Golf Road, as well as at Golf Road south of Glenwood Avenue.

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	Guiding Policies 6.7-g	Safety through design. Ensure that new development is designed in such a way that public safety is preserved and enhanced.	The project is consistent with the General Plan requirements. Fees are expected to cover the costs of street and landscaping maintenance, street lights, and other public services in the Plan Area. Fire and police protection will be provided by the City of Turlock. Complete street designs will ensure safe travel for vehicles, as well as pedestrians and cyclists. Street locations will provide safe and easy access by emergency vehicles. Lighting and landscaping will also contribute to safety.
	Implementing Policies 6.7-i	<p>Public orientation of development. Ensure that new development facilitates access is oriented to streets and public spaces and is integrated with the surroundings. Where connections to other roads are feasible, use of dead-end streets is discouraged.</p> <p>Gated projects restricting public access should not be permitted, unless designed in accordance with adopted standards for private residential communities.</p> <p>Project edges should be designed to facilitate integration with the surroundings. • Sound walls should be used only along designated freeways, expressways and arterials if needed, and should be completely screened from the outside by shrubs and trees located within the project property. Alternatives to sound walls, such as landscaped frontage roads, are encouraged where feasible.</p> <p>“Dead” uses, such as storage, parking lots, garages, and service areas should be located away from public streets and off-site view. In commercial areas, alleys should be used to access parking and service uses where feasible.</p> <p>Corner lots should locate access driveways on the street with the least traffic volume.</p> <p>Buildings should be oriented to streets and public spaces; inward</p>	<p>The project is consistent with the General Plan requirements. The layout of the Plan Area has been carefully planned to promote public access. Commercial areas are accessible from Arterial streets. No portion of the Plan Area is proposed as a gated community.</p> <p>Cul-de-sac, hammerheads, or similar dead end streets shall be designed to the lengths specified in the General Plan, so that they make up 10 percent or less of the total length of all streets in the Master Plan. Pedestrian paths from cul-de-sacs will provide connections to adjacent streets where feasible.</p> <p>In high-density residential areas, fences constructed along arterials shall be graffiti-resistant masonry designed with regularly spaced enhanced pilasters. Fences constructed along collectors and local streets shall be constructed of an open wrought-iron style design with regularly spaced enhanced pilasters matching arterial design. Landscaping shall be required between a fence or wall and the public right-of-way.</p> <p>In commercial areas, buildings will have street presence and relate to human scale. Fences are not permitted along interior side property lines. Fences here must be open wrought-iron style grillwork. When adjacent to a drainage basin or residential zone, fences must be solid masonry and planted with vines. Shade trees and courtyards are</p>

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		looking developments are discouraged.	encouraged. Public spaces will be incorporated into the site layout.
Implementing Policies 6.7-j		<p>Multi-modal access and movement. Require new projects to facilitate pedestrian and bicycle movement and aid transit. Planning should anticipate and provide for future local and regional transit service even if the service is not feasible at the time of project plan preparation. Development may not be at intensities below the density ranges stipulated in the General Plan. Bikeways should be provided as designated in Figure 5-3. Pedestrian and bicycle connections to through-streets should be provided at the end of cul-de-sacs. (See Figure 6-7.) Trees and shrubs along streets should buffer sidewalks and bicycle lanes from automobiles and be selected and spaced to provide uninterrupted shade to pedestrians and bicyclists.</p> <ul style="list-style-type: none"> <li>• Large-size projects in neighborhoods should be broken down by providing through-streets and designing smaller units to provide individuality and distinction.</li> </ul>	<p>The project is consistent with the General Plan requirements. Bus routes are not anticipated at the time the Plan Area is first completed, but can be added at a future date. Policy 6.7-f describes specific locations where bus service may be implemented.</p> <p>A density of at least 8 dwelling units per acre is expected. This is somewhat higher than the current density.</p> <p>Class 2 and Class 3 bike routes are included in the circulation plans on all arterials.</p> <p>The high density residential sites have been located adjacent to Glenwood Avenue, providing for reduced vehicular trip generation to access this collector, easy access for pedestrians and bicyclists to travel between home, school, and the park; and, one of the high density sites and a majority of the medium density residential home are located within a ten minute walk from the nearby commercial designated properties to provide for live/work and neighborhood retail goods and service convenience opportunities.</p> <p>Site design, building orientation and placement shall carefully integrate pedestrian connections to adjoining residential neighborhoods in ways that maximize ease of access and ensure the safety and security of both commercial and residential uses.</p> <p>Parkway strips with street trees serve to separate pedestrians from motor vehicles and provide shade relief on warmer days.</p>
Implementing Policies 6.7-k		Design for public safety. Promote public safety and welfare through urban design. New development should be designed in such a way that emphasizes access and connectivity, minimizes dead-end	The project is consistent with the General Plan requirements. Fees are expected to cover the costs of street and landscaping maintenance, street lights, and other public services in the Plan Area. Fire and police protection will be

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		streets, provides ample visibility and lighting in public spaces, and encourages social interactions.	provided by the City of Turlock. Complete street designs will ensure safe travel for vehicles, as well as pedestrians and cyclists. Street locations will provide safe and easy access by emergency vehicles. Lighting and landscaping will also contribute to safety.
	Implementing Policies 6.7 -1	<p>Fine grain of development. Provide a fine-grained urban environment with streets and sidewalks sized and designed to promote outdoor use and walking.</p> <p>Provide a network of closely spaced streets in neighborhood centers. Maximum spacing between local streets is 660 feet apart; in neighborhood centers, spacing closer to 400 feet is preferable. Intersections should be consistent with the access standards established in Table 5-6 of the Plan. Provide sidewalks along all streets, public and private, except along alleys. Sidewalk width, including a curbside planting area for street trees, should be at least 15 feet along retail/professional office areas and 10 feet elsewhere in the neighborhood centers. Street trees should be planted at a maximum interval of 30 feet.</p> <p>Keep the number of private driveways and curbcuts along principal streets to a minimum. Cul-de-sacs, where connection to other streets is feasible, are not permitted.</p> <p>No sound walls shall be used in the neighborhood centers.</p>	<p>The project is consistent with the General Plan requirements. A primary goal of the Land Use and Development Standards chapter of the Master Plan is the development of a pedestrian-scaled environment to encourage residents, employees, and visitors to walk or bike to various destinations in the community. This is accomplished through building details, including sensitive architectural treatments; open space design with strategic placement of walkways, trails and bike lanes, landscaping, and adequate landscaping.</p> <p>Tentative maps shall be reviewed and approved by the Turlock Planning Commission pursuant to TMC Title 11-5 Subdivision Maps, Article 7. A lot fit plan will be submitted with an application for a tentative map demonstrating conformance with setback, driveway, and driveway spacing requirements. All development will be subject to the City’s Design Guidelines. Complete Streets will be designed to promote connectivity between land uses and connect to areas outside the Plan Area. By complying with established design guidelines and standards, block size will be in accordance with the General Plan requirements.</p> <p>Dead-end streets and culs-de-sac will be avoided, and sound walls will not be utilized in neighborhoods.</p>
	Implementing Policies 6.7-m	Design and placement of parking areas. Ensure that parking areas do not impede pedestrian access and are adequately shaded and screened. Parking or service areas, screened or otherwise, should not be located between sidewalks and buildings.	The project will be consistent with the General Plan requirements. On-street parking is planned on the 2-lane wide section of Morgan Ranch Arterial, and along other Collector streets, as is typical. Sidewalks are planned along existing and planned streets.

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		<p>Pedestrians should not have to walk through or along a parking lot to access any building in a neighborhood center, but should be provided with independent sidewalk access.</p> <p>Screen all off-street parking, surface or structured, from pedestrian view by trees and shrubs. Walls should not be used as screening devices. Provide at least one large-canopy tree per five parking spaces and/or other paved area to shade cars, reduce glare and screen barren lots. Provide bicycle parking in neighborhood center parking lots, at an approximate ratio of one bicycle parking space per 10 automobile parking spaces.</p>	<p>Off-street parking for high-density residential, office and commercial development will comply with Turlock Municipal Code Section 9-2-109 (Landscaping and irrigation), and Turlock Municipal Code 9-2-200ART (Off-street Parking and Loading Regulations), and will be consistent with General Plan requirements. Off-street parking will be at the rear of the buildings and will be screened.</p> <p>In Commercial areas, parking and service areas should be located away from major pedestrian and vehicular traffic sights, and will follow the Design Guidelines for Site Planning. Parking here will be landscaped, including plantings of deciduous trees. Placement and species type will be designed so that 50% of the parking lot will be shaded within 15 years of construction. Extended walkways (for sidewalk dining/cafes and similar uses) are encouraged to promote walking and diminish the visual impact of parking and service.</p> <p>Details for bicycle parking have not been included in the Master Plan. As it is the intent of the Master Plan to comply with the General Plan, appropriate bicycle parking will be included in plans for the two parks and the school, as well as other neighborhood centers and multi-family residential facilities.</p>
	Implementing Policies 6.7-n	<p>Retail center location and design. Ensure that all retail in a neighborhood center is contiguous and along streets pedestrians can cross safely and without unduly impeding traffic.</p> <p>Neighborhood retail, shown as Community Commercial (or Neighborhood Center in master plan areas) on the General Plan Diagram at the intersection of two principal streets, should be oriented to front along the street expected to carry the lesser amount of traffic.</p> <p>When neighborhood retail abuts</p>	<p>The project will be consistent with the General Plan requirements. The Plan Area includes retail in the Community Commercial area, which will be located in the northwestern corner of the Plan Area. This area can be accessed from the north or south by Lander Avenue, or from the east via Glenwood Avenue. This district will extend to the southeast as well, and will be visible (but not accessed from) State Highway 99. It will be adjacent to Office, High Density Residential, and Public land use classifications. Sidewalks and landscaping will included on all Arterial,</p>

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		lands designated as Low Density Residential, special consideration should be given to techniques that properly buffer each use from the other.	Collector, and local roadways for safe pedestrian access. Parkway strips will street trees will also provide protection to pedestrians.
		A masonry wall constructed per the Land Use and Development Standards is required to be located at the right of way (R/W) line adjacent to single family residential zoned properties along Arterial roadways, such as the planned Morgan Ranch Arterial.	
	Implementing Policies 6.7-o	<p>Building to street relationship. Require buildings to define street and sidewalk edges, provide scale to streets, engage pedestrians and promote active use of sidewalks and outdoor space.</p> <p>All structures with non-residential uses at the ground level should be built to provide a continuous frontage along public rights-of-way. Buildings should be set back from sidewalks only if a pedestrian plaza or patio, not separated from a sidewalk by a wall, fence, shrubs, etc., is provided.</p> <p>Frequent entrances to buildings are desirable. Entrances to the rear of buildings from parking courts should not substitute for entrance(s) from a street.</p> <p>Blank walls, reflective glass and other opaque surfaces at the ground level along street frontages should be avoided. Store interiors should be visible from the outside.</p> <p>Overhangs, awnings or other devices to shade the sidewalks of building frontage are to be provided. Colonnaded walkways, where provided, should be at least 8-foot wide clear, and run the entire length of a block, or store front.</p>	<p>The project is consistent with the General Plan requirements. Areas are planned to promote walking, bicycling, and pedestrian access to businesses. In the Community Commercial areas, “The first floor should consist mainly of retail store front uses with awnings, galleries or arcades, pedestrian scale signs, and interesting window displays. Upper story uses shall be restricted to office, professional and residential uses only. Parking and service areas should be located away from major pedestrian and vehicular traffic sights (behind structure or internal).” (Master Plan, Chapter 3). The front set-back is 15 feet. Sidewalks will extend from street curb to the right of way line and an additional 5 feet for café/outdoor dining or similar uses. Universal accessibility is required for all outdoor dining. Courtyards, covered walkways and outdoor gathering/eating areas are encouraged. Fencing in the front is not permitted.</p>
	Implementing Policies 6.7-p	Neighborhood center uses. Ensure that uses in neighbor-hood centers provide for residents’ daily needs for goods and services, and are compatible with surrounding neighborhood uses, design, and scale. Examples of uses appropriate	<p>The project is consistent with the General Plan requirements. Building design in the Plan Area includes a mixed use component with office and residential uses allowed (pending approval of a Conditional Use Permit). The Community Commercial</p>

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		<p>in neighborhood centers are found in Policy 3.2-h. Additionally: Mixed-use (horizontal and vertical) developments are encouraged in neighborhood centers. Automobile-oriented commercial facilities, such as drive-through restaurants and gas stations should not be located in neighborhood centers. However, limited drive-through facilities may be permitted for financial institutions, pharmacies, dry cleaners, and other similar personal service facilities. The appropriate location for automobile-oriented facilities is in areas designated Heavy Commercial on the General Plan Diagram, not in neighborhood centers.</p>	<p>classification is intended to include a small market, restaurant, professional offices, and personal services, or similar businesses that will provide convenience for the neighborhood residents. Design guidelines will promote mixed use, safe and comfortable access, and integrated public spaces.</p> <p>The Community Commercial classification will permit retail uses on the first floor, with residential, office, and professional uses permitted on subsequent floors. Office, high density residential, and public classifications are adjacent to the area designated as Community Commercial. Drive through restaurants will be discouraged, although the proximity to State Highway 99 may make this area attractive to those wanting to open a fast-food restaurant.</p> <p>The area to be designated as Community Commercial currently supports a gas station and car wash.</p>
	Implementing Policies 6.7-q	<p>Visual interest and compatibility in residential design. Residential projects, single family or multifamily, should include visual interest and variety. The size, scale, proportion, color, placement, and detailing of architectural features should be carefully considered to complement the overall massing and scale of the single-family or multifamily building. Multifamily projects should be designed and detailed to be compatible with neighboring single family homes and commercial centers. Single family projects should include architecture and landscaping that is complimentary and creates a neighborhood identity with visual interest and variety.</p>	<p>The project is consistent with the General Plan requirements. Buildings in the Plan Area will conform to the Turlock Municipal Code and Design Guidelines. This includes, in residential areas, “a diversity of building types and styles... within the neighborhood. This is accomplished with a variety of builders, a variety of floor plans and building elevations, and a variety of residential product densities.” A variety in floor plans, elevations, and colors is required. In multifamily projects, entry areas shall be enhanced, including landscaped medians, enriched/special paving, decorative landscaped entry walls, and/or gateway structures. These units, “shall respect and compliment the character of the adjacent residential neighborhood.” Designs exclude lengthy, unbroken facades and box-like forms, while porches, arcades, dormers and other features that mitigate a “barracks-like” quality are encouraged. Landscaping is required to provide safety, and soften hard features like walls and fences.</p>

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	Implementing Policies 6.7-r	<p>Housing fronting collector streets. To maximize public orientation of streets and neighborhoods, housing is encouraged to front onto collector streets. The following provisions shall apply:</p> <p>Driveway designs that allow for turn-around space (to minimize cars backing out onto collector streets) are encouraged.</p> <p>Driveways shared by more than one residence are encouraged, to limit the number of driveway entrances to the street.</p>	<p>The project is consistent with the General Plan requirements. In residential areas, houses may not face onto arterial streets. At least 60% of garages must be recessed from the main living area, and ‘ribbon’ driveways are encouraged (two paved/concrete strips). Facing garages on side streets, rear yard garages, and architectural features that minimize the view of the garage from the street are encouraged. Because the Plan Area includes only medium and high-density residential development, lots are not large and circular driveways are not practical. On corner lots, garages will be sited on the lot so that the driveway is located the maximum possible distance from the nearest street intersection. The use of common or shared driveways is encouraged in community commercial designations.</p>
	Implementing Policies 6.7-s	<p>Street standard adherence. Ensure that streets are provided consistent with the provisions of the Plan.</p>	<p>The project will be consistent with the General Plan requirements.. Lander Road is built out to its ultimate 4-lane width. The Morgan Ranch Arterial will be constructed as a 2-lane, minor arterial, except a portion near Lander Avenue, which will be built as a 4-lane within this commercial zoned area. Golf Road will be constructed as a 2-lane arterial south of Glenwood Avenue. Glenwood Avenue will not be widened or otherwise improved, as it is a 6-lane roadway. Lander Avenue, Golf Road, and Morgan Ranch Arterial will be designated as truck routes, in accordance with the General Plan. 5th Street will provide a north-south connection between the school and residents, as well as residents to the north of the Plan Area.</p>
	Implementing Policies 6.7-t	<p>Pedestrian linkages. Develop clear pedestrian linkages between and within neighborhoods.</p>	<p>The project is consistent with the General Plan requirements. All local streets, connector streets and arterial streets will include sidewalks. Pedestrian paths from culs-de-sac will provide connections to adjacent streets where feasible. The Master Plan design also provides pedestrian/bicycle links from neighborhoods to the recreation facilities with safe and easy access.</p>

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	Implementing Policies 6.7-u	<p>Sidewalks and the pedestrian environment. Provide side-walks consistent with intended use, and trees to shade streets and pedestrians.</p> <p>Sidewalks should be provided on both sides of all streets, public and private. Sidewalk width shall be a minimum of 5 feet in residential areas and 8 feet in commercial and industrial areas (see Tables 5-4 and 5-5). In residential areas, parkway strips in between the street and sidewalk shall be provided to provide greater distance between pedestrians and the roadway. In areas designated Very Low Density Residential, consider establishment of a more rural residential style of street-side public improvements.</p> <p>Street trees should be planted curb-adjacent and be consistent with the species stipulated in the Street Tree Master Plan and be no greater than 30 feet apart. Trees along local streets should be appropriately selected and planted no greater than 30 feet apart.</p>	<p>The project is consistent with the General Plan requirements. All local streets, connector streets and arterial streets will include sidewalks. Sidewalks will be a minimum of 5 feet in width in residential areas (on local and collector streets) and arterial streets adjacent to residential areas. Sidewalks will be a minimum of 8 feet in width in Community Commercial, and Office designations. Parkway strips of 6 feet in width will be provided along all roadways.</p> <p>There are no low density residential designations within the Plan Area.</p> <p>Planting of street trees will be in compliance with the Landscape Standards and the City of Turlock’s Street Tree Master Plan.</p>
	Implementing Policies 6.7 -v	<p>Relationship of parks and surrounding uses. Provide parks and open spaces consistent with the Plan.</p> <p>Parks should be sized and designed in accordance with criteria established in Chapter 4: Parks, Schools, and Community Facilities. Provide urban-agricultural buffers in areas when required by Policy 6.1-k and policies found in Section 3.2.</p>	<p>The project will be consistent with the General Plan requirements. Two parks are planned in the Plan Area. A neighborhood park of approximately 6.6 acres is planned adjacent to the school, and a pocket park of 1.5 acres is planned on the south side of the Morgan Ranch Arterial, abutting the storm basin. The storm basin expected to be in use for stormwater only a few weeks of the year, and creates a nearly year-round opportunity to utilize the acreage for other recreational activities. The parks will be connected to neighborhoods through either sidewalks or trail, and will provide connections to bicycle routes within the Master Plan Area. The school is planned for another 11.1 acres. Of the 170-acre Plan Area parks, open space, and public facilities would cover approximately 42.3 acres or 24.9 percent of the total Plan Area.</p>

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			<p>The Plan Area shares the city limits boundary on the eastern side (Golf Road). The area to the east of the Plan Area includes residential and agricultural use, and is within Stanislaus County. In 1992, Stanislaus County adopted an Agricultural Element for the General Plan that calls for buffers between agricultural and non-agricultural uses, with a standard minimum width of 150 feet. The width may extend to 300 feet or more when the adjacent use requires significant drainage or involves “people-intensive outdoor activities,” such as playing fields. According to the County, buffers must incorporate a solid wall as well as a vegetative screen. Permitted uses within the buffer area include public roadways, utilities, drainage areas, landscaping, parking lots, and walking and biking trails without rest areas (to discourage higher intensity use of the space).</p>
			<p>A seven (7') foot high decorative masonry wall shall be provided for residential development along an arterial roadway, when a Residential zone abuts a Commercial or Public zone, or when a multi-family residential project abuts a separate residential project.</p>
	Implementing Policies 6.7-w	<p>Residential parking design. Reduce the visual dominance of garages and parking. Garage width openings facing public streets will normally be limited to no more than 20 feet or one-third the lot width, whichever is less; recessed garages can be wider so long as the visible width from the front does not exceed the maximum. Alternatives to front garages, such as access from alleys, side drives with parking in the rear, and tandem parking are also permitted. Consolidated parking in higher density residential projects should be located away from the streets and should share one or two entrances/exits from the property in order to minimize curb cuts.</p>	<p>The project is consistent with the General Plan requirements. At least 60% of garages must be recessed from the main living area, and ‘ribbon’ driveways are encouraged (two paved/concrete strips). Facing garages on side streets, rear yard garages, and architectural features that minimize the view of the garage from the street are encouraged. On corner lots, garages will be sited on the lot so that the driveway is located the maximum possible distance from the nearest street intersection.</p> <p>Garages must be set back a minimum of 20 feet, and at least 5 feet behind the living space or porch in single family residences. Detached garages are permitted in the rear ½ of the lot, and cannot exceed 14 feet in height. An attached garage cannot be more than the</p>

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			<p>maximum height of the living area. Garages cannot be wider than typical for a two-car structure (20 feet).</p> <p>In high-density residential projects, 1.5 covered parking spaces are required per unit. Guest parking may or may not be covered. Parking lots shall comply with Turlock Municipal Code Section 9-2-200ART (Off-street Parking and Loading Regulations).</p>
	Implementing Policies 6.7-x	<p>Public orientation of medium and high density development. Development should be oriented to streets, sidewalks and public spaces; introverted projects are discouraged. Site planning and architectural design should ensure that developments provide street frontages with interest for both pedestrians and neighboring residents. Sites should not be fenced or walled off with a solid barrier; at least 50 percent shall have an open fencing design. Buildings should be oriented to public streets and each dwelling must have direct visual access to either a public sidewalk, landscaped courtyard or a garden space. Some dwellings on each site must front and face the adjoining public street and sidewalk. If entrance to individual buildings or dwellings is through a courtyard, the courtyard should open directly to a public street or sidewalk.</p>	<p>The project is consistent with the General Plan requirements. Design of both residential and commercial/office projects is focused on a pedestrian-scaled environment. This includes details such as architectural treatment of entry and window design, variations in roof lines, colors, and siding materials, and porches, walkways, trails, and street trees. Courtyards with 3-foot tall walls are permitted. Homes will be oriented toward the street with outdoor sitting spaces (porches or courtyards).</p>
	Implementing Policies 6.7-y	<p>Visual variety. Promote fine-grained development that provides individuality and distinction. Projects should be integrated with surroundings, not closed off from them. Developments should generally be broken down into small clusters, independently accessible and integrated with the surroundings with direct circulation and visual connection between buildings, streets, sidewalks and open space.</p>	<p>The project is consistent with the General Plan requirements. The Plan Area includes a variety of uses, with neighborhoods separated by major streets, parks, or other uses. Two areas of high-density development are planned at the west and east ends, with medium-density residential throughout the Plan Area.</p> <p>High-density residential development will conform to the Turlock Municipal Code and Design Guidelines. Lengthy</p>

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		<p>Superblock–style developments with large-scale internal circulation systems are discouraged.</p> <p>The number of units sharing a directly accessible building entrance or stairway should be limited to eight, except for high density housing and assisted living facilities.</p>	<p>balconies that provide access to multiple units are not permitted. Other requirements are in place that will encourage open space, landscaping, sidewalks, and visual connections between buildings.</p> <p>Multiple-family dwellings are permitted in the medium density developments, in compliance with the Tulare Municipal Code Chapter 9-3, as well as the Medium Density Residential classification of the General Plan. Although 7-15 dwelling units per acre are allowed, a range of 8 to 9 units per acre is preferred. Therefore small lot, single family residential units will be the target.</p>
7 Conservation	Guiding Policies 7.1-a	Dual-Use Storm Drainage Basins. Continue to coordinate the storm drainage system and the park system in new master plan areas, and optimize the use of drainage basins as recreational open space.	The project will be consistent with the General Plan requirements. The new storm basin is estimated to be included in a 23.1 acres area adjacent to the planned pocket park. Because it is expected to be in use for stormwater only a few weeks of the year, it creates a nearly year-round opportunity to utilize the acreage for other recreational activities. For example, the embankment area next to the park can be terraced gradually into multiple levels that could provide spaces for picnicking, sitting and open play.
	Implementing Policies 7.1-b	Requirements for Water Detention. Basins must function effectively for the detention (not the retention) of water, and include underground piping for quick removal of water following storm events.	The project is consistent with the General Plan requirements. The new basin will be planned for detention, and will include appropriate piping. A 30-inch overflow line is planned to run from the outfall structure at the new basin to an existing 42-inch storm drainage line in Lander Avenue.
	Implementing Policies 7.1-c	Open Space Character and Functionality. Design all dual-use drainage basins to suit a recreational purpose, such as a playing field, or an environmental amenity, such as a water feature. Basins should be varied in shape, and well-landscaped around the edges. Basins must not have slopes steeper than 1:6.	The project will be consistent with the General Plan requirements.. The new storm basin is estimated to be included in a 23.1 acres area adjacent to the planned pocket park. Because it is expected to be in use for stormwater only a few weeks of the year, it creates a nearly year-round opportunity to utilize the acreage for other recreational activities. For example, the embankment

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			<p>area next to the park can be terraced gradually into multiple levels that could provide spaces for picnicking, sitting and open play. The basin will be designed as a dual use facility and will include trees along the perimeter, with irrigated turf on the slopes and bottom. Slopes will not be steeper than 17% (1:6) to allow for safe access.</p>
	Implementing Policies 7.2-n	<p>Minimize Soil Erosion. Require new development to implement measures to minimize soil erosion related to construction. Identify erosion-minimizing site preparation and grading techniques in the zoning code.</p>	<p>The project is consistent with the General Plan requirements. Building will conform to the City of Turlock Municipal Code, and will adhere to site preparation and grading requirements.</p>
	Guiding Policies 7.4-a	<p>Increase Biological Diversity. Make efforts to enhance the diversity of Turlock’s flora and fauna, including street trees.</p>	<p>The project is consistent with the General Plan requirements. Landscaping will be in accordance with the City of Turlock Landscaping Plan.</p>
	Implementing Policies 7.4-b	<p>Sensitive Site Planning. Protect mature trees and natural vegetation and features wherever feasible in new development areas.</p>	<p>The project is consistent with the General Plan requirements. Mature trees will be retained to the greatest extent possible. Since much of the area has been utilized for agricultural production in the past, most of the soils have been highly disturbed, and little natural vegetation remains.</p>
	Implementing Policies 7.4-c	<p>Urban Trees. Protect and expand Turlock’s urban forest through public education, sensitive maintenance practices, and a long-term financial commitment adequate to protect these resources. Continue to require the planting of appropriately-spaced street trees in new development areas.</p>	<p>The project is consistent with the General Plan requirements. Street trees are planned along all major streets, in medians, in commercial and office projects, and in residential parkway strips, as well as in the two parks and around the ponding basin. Native trees will be used when possible. Plantings will adhere to the Street Tree Master Plan.</p>
<p><b>8 Air Quality and Greenhouse Gases</b></p>	Guiding Policies 8.1-a	<p>Prioritize Air Quality in Local Planning. Continue efforts to improve air quality in Turlock by integrating air quality analysis and mitigation in land use and transportation planning, environmental review, public facilities and operations, and special programs.</p>	<p>The project is consistent with the General Plan requirements. An evaluation of air quality for the Plan Area is included in this EIR (See Section 3.3).</p>

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	Implementing Policies 8.1-d	Transportation and Residential Density. Designate residential land uses to be higher density than in the past in order to meet population demand and reduce total vehicle miles travelled.	The project will be consistent with the General Plan requirements. The Plan Area includes no low-density residential use. Medium density, of between 8 and 9 single family dwelling units per acre is targeted, in addition to two high-density residential areas. The centrally located, elementary school will be easily accessed from all residential neighborhoods.
	Implementing Policies 8.1-e	Establish Land Use Patterns That Supports Trip Reduction. Establish land use pattern that enables alternatives to automobile use and reduces trip lengths, including transit oriented, mixed use development and neighborhood commercial areas.	The project will be consistent with the General Plan requirements. Class II bicycle lanes and Class III bicycle routes have been included throughout the Plan Area. Walking and bicycling are encouraged through the project design and layout. Bus routes do not currently pass through this (undeveloped) area, but are anticipated for the future at intersections along Glenwood and the Morgan Ranch Arterial. In addition, mixed use development, which includes office, commercial, professional, and residential use is permitted in the Community Commercial designation.
	Implementing Policies 8.1-f	Plant and Maintain Trees in Streets and Parks. Adopt a comprehensive tree-planting and maintenance program that recognizes the effect of air pollutants on trees and the role trees can play in removing particulate matter and gaseous pollutants. Provide a viable financing program, particularly in older neighborhoods that are not in a landscape and lighting assessment district.	The project is consistent with the General Plan requirements. Street trees are planned along all major streets, in medians, in commercial and office projects, and in residential parkway strips, as well as in the two parks and around the ponding basin. Native trees will be used when possible. Plantings will adhere to the Street Tree Master Plan. At this time, the City has not yet developed a financing program for the maintenance and upkeep of trees that are located on public lands. In residential and commercial areas, property owners are responsible for the trees planted on the property or in the parkway strips located with the rights of way.
	Implementing Policies 8.1-k	Air Quality Improvement Fee. In the Capital Facilities Fee (CFF) program, establish a fund to collect a fee to be paid by all new development to assist in the funding of local projects that contribute to the enhancement of air quality.	The project is consistent with the General Plan requirements. This fund has not yet been established in the CFF. At this time, various fees are paid to the San Joaquin Valley Air Pollution Control District for permits; however these fees are not utilized for local (e.g., City of Turlock) projects that contribute

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			<p>to the enhancement of air quality. Should the City revise the CFF during development within the Master Plan Area, fees would be paid as appropriate.</p>
	Guiding Policies 8.2-b	<p>Decrease Vehicle-Miles Travelled. Promote a broad range of transportation, land use, and site design measures that result in a decrease in the number of automobile trips and vehicle-miles travelled.</p>	<p>The project will be consistent with the General Plan requirements. Class II bicycle lanes and Class III bicycle routes have been included throughout the Plan Area. Walking and bicycling are encouraged through the project design and layout. Bus routes do not currently pass through this (undeveloped) area, but are anticipated for the future at intersections along Glenwood and the Morgan Ranch Arterial.</p>
	Guiding Policies 8.2-c	<p>Facilitate Energy-Efficient Buildings. Encourage energy efficiency through good urban design and site-planning practices, as well as through building design, maintenance and retrofit.</p>	<p>The project is consistent with the General Plan requirements. The Master Plan will adhere to the City’s Design Guidelines. These Guidelines include optimal lot pattern and building site layout for proper solar orientation and guidelines for solar panel placement and color. The Guidelines’ landscaping guides recommend landscaping and open spaces that enhance the building design, and provide for a balance of solar uses, and provide screening and buffers.</p>
	Implementing Policies 8.2-g	<p>Develop Circulation System That Facilitates Alternative Transportation Modes. Promote alternatives to auto-mobile use by establishing a Circulation Plan and street design standards that enable safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities. Plan Elements include a citywide bike network and traffic calming street design. See Chapter 5, Circulation.</p>	<p>The project will be consistent with the General Plan requirements. The Plan Area is within the City of Turlock, and the peripheral streets are existing. The Morgan Ranch Arterial and 5th Street are planned. Local streets will be required, at a minimum, 1) along the south and west sides of the neighborhood park, 2) along the south side of the elementary school, 3) along the west side of the R-H zoned site in the northeast corner of the Plan Area, and 4) as an extension of 5th Street, south of the Morgan Ranch Arterial along the east side of the park/basin. Class II and III bike lanes/routes are located along the arterial and collector streets. A roundabout is planned along the Morgan Ranch Arterial where a new street will link it with Glenwood Avenue. Medians, parkway strips, and sidewalks will encourage safe, comfortable, and</p>

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			attractive access for all those traveling within the Plan Area.
	Implementing Policies 8.2-h	Establish Connective Street Network to Minimize Trip Length. Minimize vehicle-miles travelled by establishing a connective circulation network providing multiple, direct paths. See Chapter 5, Circulation.	The project will be consistent with the General Plan requirements. Existing streets provide transit routes only on the perimeter of the Plan Area. The addition of 5th Street and the Morgan Ranch Arterial will enable traffic to flow within the Plan Area in a more direct flow.
	Implementing Policies 8.2-i	Provide Bicycle Facilities. Require minimum bike parking for multi-family residential and commercial development, and encourage provision of additional end-of-trip facilities.	The project is consistent with the General Plan requirements. Details for bicycle parking have not been included in the Master Plan. As it is the intent of the Master Plan to comply with the General Plan, appropriate bicycle parking will be included in plans for the two parks and the school, as well as other neighborhood centers and multi-family residential facilities.
	Implementing Policies 8.2-l	Establish Land Use Pattern That Supports Trip Reduction. Establish a land-use pattern that enables alternatives to automobile use and reduces trip-lengths, including increased residential density, transit-oriented and mixed-use development, neighborhood commercial areas, and pedestrian realm enhancements.	The project will be consistent with the General Plan requirements. Building design in the Plan Area includes a mixed use component with office and residential uses allowed (pending approval of a Conditional Use Permit). The Community Commercial classification is intended to include a small market, restaurant, professional offices, and personal services, or similar businesses that will provide convenience for the neighborhood residents. Design guidelines will promote mixed use, safe and comfortable access, and integrated public spaces. The Community Commercial classification will permit retail uses on the first floor, with residential, office, and professional uses permitted on subsequent floors. Office, high density residential, and public classifications are adjacent to the area designated as Community Commercial. Residential development includes medium (8-9 DU/AC) and high density projects.
	Implementing Policies 8.2-m	Pedestrian-Oriented Site Design. Orient development to encourage pedestrian and transit accessibility. Strategies include locating buildings and primary entrances adjacent to	The project is consistent with the General Plan requirements. A primary goal of Chapter 3 (Land Use and Development Standards) of the Master Plan is the development of a pedestrian-

Chapter / Element	Type & No.	Text	Consistency Determination
9 Noise	Guiding Policies 9.4-c	Protect Residential Areas and Sensitive Uses. Minimize excessive noise exposure in residential areas and in the vicinity of such uses as schools, hospitals, and senior care facilities.	<p>The project is consistent with the General Plan requirements. Section 3.11 of the DEIR will incorporate mitigation measures into the proposed project which will require noise level reductions for residences located within 700 feet of S.R. 99 centerline, a 6-foot high sound wall along Golf Road and Glenwood Avenue, locating recreation areas such as neighborhood parks and school playgrounds as far as possible from residential property lines, preparation of an acoustical analysis as determined by the Planning Director, as well as mitigation for construction activities.</p>
	Implementing Policies 9.4-d	Required Noise Analysis. Use the noise and land use compatibility matrix (Table 9-1) and Future Noise Contours map (Figure 9-2) as review criteria for all new development. For proposed development located where projected noise exposure would be other than “normally acceptable,” and which require discretionary review, require that a noise analysis be conducted.	<p>The project is consistent with the General Plan requirements. Section 3.11 of the DEIR will incorporate mitigation measures into the proposed project which will require an acoustical analysis as determined by the Planning Director.</p>

Chapter / Element	Type & No.	Text	Consistency Determination
		<p>A required noise analysis should:                      Be prepared by a certified noise consultant or acoustical engineer;                      Be funded by the applicant;                      Include a representative, on-site day and night sound level measurement;                      Include a delineation of current (measured) and projected (10 years) noise contours with and without the proposed project, ranging from 55 to 75 dBA (Ldn) within the proposed development site; and                      Include a description of adequate and appropriate noise abatement measures where sound measurements exceed Table 8.4-A standards for the proposed standards for the proposed use.</p>	
		<p>A list of accredited noise consultants is available from the State Department of Health Services, Office of Noise Control.</p>	
	Implementing Policies 9.4-e	<p>Noise-Attenuating Features. For all projects that have noise exposure levels other than “normally acceptable” and which require discretionary review, require site planning and architecture to incorporate noise-attenuating features. With mitigation, development should meet allowable outdoor and indoor noise exposure standards in Table 9-2. In particular, new residential, transient lodging, school, library, church, hospital, and convalescent home development should be designed to provide a suitable interior noise environment of no greater than 45 dB CNEL or Ldn.</p> <p>Site planning measures include setbacks, building placement in relation to topography, and orientation of sensitive indoor and outdoor activity areas away from noise sources.</p> <p>Building measures may include:                      Facades constructed substantial weight and insulation;</p>	<p>The project is consistent with the General Plan requirements. Section 3.11 of the DEIR will incorporate mitigation measures into the proposed project which will require noise level reductions for residences located within 700 feet of S.R. 99 centerline. Specifically, An analysis of projected future interior traffic noise levels indicate that proposed residential uses with direct exposure to State Route 99 would require window assembly and/ or building façade upgrades at the second floor to comply with the City’s 45 dB Ldn interior noise level standard. In order to achieve compliance with an interior noise level standard of 45 dB Ldn, residences located within 700 feet of the S.R. 99 centerline would require exterior-to-interior noise level reductions ranging from 30 dB to 35 dB. A 30 dB exterior to interior noise level reduction may be achieved through the use of STC 35 rated window assemblies for all second floor windows with a view of SR 99. A 35 dB exterior to interior noise level reduction may be achieved through the use of STC 40 to 42 rated window assemblies for all second floor windows</p>

Chapter / Element	Type & No.	Text	Consistency Determination
		<p>Sound-rated windows and doors; Active cancellation; Acoustic baffling of vents for chimneys, fans, and gable ends; Ventilation system affording comfort under closed-window conditions; Double doors and heavy roofs with ceilings of two layers of gypsum board on resilient channels.</p>	<p>with a view of SR 99. As an alternative to this requirement, a detailed analysis of interior noise levels can be conducted when building plans are available.</p>
	Implementing Policies 9.4-f	<p>Vibration Reduction. For all sensitive land uses located where they would have noise exposure levels other than “normally acceptable,” and where an EIR is mandated, require construction features that reduce vibration-reducing construction features such as insulation, soundproofing, staggered studs, double drywall layers, and double walls.</p>	<p>The project is consistent with the General Plan requirements. Section 3.1.1 of the DEIR will incorporate mitigation measures into the proposed project which will require a 6-foot high sound wall along Golf Road and Glenwood Avenue.</p>
	Implementing Policies 9.4-j	<p>Transportation Noise Buffers. Where feasible, develop and implement noise reduction measures when undertaking improvements, extensions, or design changes to City streets. Measures may involve some combination of setbacks, earth berms, solid noise walls, placement of non-occupancy accessory structures or windowless building sites towards the noise source, and building insulation techniques.</p>	<p>The project is consistent with the General Plan requirements. Section 3.1.1 of the DEIR will incorporate mitigation measures into the proposed project which will require a 6-foot high sound wall along Golf Road and Glenwood Avenue.</p>
		<p>Mitigation through the design and construction of a noise barrier (wall, berm, or combination wall/berm) is the most common way of alleviating traffic noise impacts. Noise barriers often have the disadvantage of unsightliness; however, properly landscaped berms or walls shielded with climbing vines can, over time, become visual assets. The use of noise barriers should be minimized.</p>	
<b>10 Safety</b>	Guiding Policies 10.1-d	<p>Incorporate Safety Considerations Into Land Use Policies. Coordinate land use policies with concerns about potential hazards.</p>	<p>Once the mitigation measures included in Section 3.7 and 3.8 are implemented, the project will be consistent with the General Plan requirements. Sections 3.7 and 3.8 of the DEIR includes</p>

Chapter / Element	Type & No.	Text	Consistency Determination
			<p>information about geologic and other hazards that could occur on the site. Mitigation measures are included in these sections that will reduce or avoid potential impacts resulting from these hazards.</p>
	Guiding Policies 10.2-a	<p>Minimize Geologic and Seismic Risk. Continue to use building codes as the primary tool for reducing seismic risk in structures.</p>	<p>The project is consistent with the General Plan requirements. Building in the Plan Area will be in accordance with the City of Turlock Municipal Code, which includes compliance with building codes.</p>
	Guiding Policies 10.3-a	<p>Protect the Community from Flood Hazards. Protect the community from risks to life and property damage posed by flooding.</p>	<p>The project is consistent with the General Plan requirements. The City of Turlock, including the Plan Area is outside of the 100-year flood zone. Construction will be in compliance with federal and State requirements regarding development and flooding. New development as a result of the proposed project will be designed to be consistent with policies in the City’s General Plan Safety Element, which includes requiring new development to be designed and constructed in a manner that minimizes risks from fire, flood, seismic, geologic and noise hazards; and includes requiring adequate emergency access for fire and emergency vehicles.</p>
	Guiding Policies 10.4-d	<p>Establish Equitable Funding Mechanisms. Continue to implement and review existing, and consider establishing new, equitable methods for minimizing public facility and service costs associated with new development. Take advantage of State and federal funding and grant opportunities as they become available.</p>	<p>The project is consistent with the General Plan requirements. Turlock has a three-tier development impact fee system. There are fees that apply consistently to any new development in the City, fees that apply based on which quadrant of the city the development is located in, and fees that apply only to development in a master plan area. City-wide impact fees fund street lights, the wastewater treatment plant, sewer trunk lines, water wells, major water lines, major stormwater collection facilities, public safety, and parks. Fees based on quadrants support transportation facilities, police and fire facilities, and general government facilities. Fees based on the master plan area typically cover costs for major road improvements and new water and sewer facilities that are specific to the needs of</p>

Chapter / Element	Type & No.	Text	Consistency Determination
			<p>the master plan area. As was done with other master plans in Turlock, an infrastructure analysis and impact fee study will be prepared immediately following adoption of this Master Plan to determine the exact facilities that will be included in the Morgan Ranch Master Plan fee program.</p>
	Implementing Policies 10.1-k	<p>Locate Buildings With High-Public-Occupancy at Safe Distance from Railroad and Highway. To the extent feasible, locate new buildings of high public occupancy — particularly schools, hospitals, civic and institutional uses at least 100 feet from main railroad alignments and the highway, to minimize risks to life and property in the event of a hazardous cargo accident.</p>	<p>The project will be consistent with the General Plan requirements. The elementary school and high-density residential development will occur on the north side of the Plan Area. State Highway 99 is located along the southern perimeter of the Plan Area. There is no railway located adjacent to, or near the Plan Area. Much of the land use within the Plan Area that is adjacent to State Highway 99 is utilized for commercial, public, or park land, including the drainage basins. The southeast corner of the Plan Area will, however, locate medium density residential development adjacent to the highway.</p>
	Implementing Policies 10.2-b	<p>Meet Most Current Seismic Standards. Continue to require all new buildings in the City to be built under the seismic requirements of the latest adopted California Building Code.</p>	<p>The project is consistent with the General Plan requirements. New development as a result of the proposed project will be designed to be consistent with policies in the City’s General Plan Safety Element, which includes requiring new development to be designed and constructed in a manner that minimizes risks from fire, flood, seismic, geologic and noise hazards. Additionally, the City’s Municipal Code includes provisions for compliance with California Building Code requirements.</p>
	Implementing Policies 10.2-h	<p>Require Erosion Control Plans. Require new development to include grading and erosion control plans prepared by a qualified engineer or land surveyor.</p>	<p>The project is consistent with the General Plan requirements. Section 3.7 of this DEIR includes mitigation measures to reduce the potential for impacts resulting from construction on unstable soils and similar geological conditions.</p>
	Implementing Policies 10.3-c	<p>Reduce Stormwater Runoff from Private Development. Integrate new standards into the Municipal Code that would Update Zoning</p>	<p>The project is consistent with the General Plan requirements. The installation, operation, and maintenance of the storm basin will be in compliance</p>

Chapter / Element	Type & No.	Text	Consistency Determination
		Ordinance and development review process as needed to reduce peak-hour stormwater flow and increase groundwater recharge.	with State and federal requirements, as well as local requirements, such as those included in the City’s General Plan (as detailed in Section 6.4 and other chapters) and the City Municipal Code.
	Guiding Policies 10.3-d	<p>Improve Stormwater Management from Streets. Update City street design standards to allow for expanded stormwater management techniques. These may include: Canopy trees to absorb rainwater and slow water flow.</p> <p>Directing runoff into or across vegetated areas to help filter runoff and encourage groundwater recharge.</p> <p>Disconnecting impervious areas from the storm drain network and maintain natural drainage divides to keep flow paths dispersed.</p> <p>Providing naturally vegetated areas in close proximity to parking areas, buildings, and other impervious expanses to slow runoff, filter out pollutants, and facilitate infiltration.</p> <p>Directing stormwater into vegetated areas or into water collection devices.</p> <p>Using devices such as bioretention cells, vegetated swales, infiltration trenches and dry wells to increase storage volume and facilitate infiltration.</p> <p>Diverting water away from storm drains using correctional drainage techniques.</p>	<p>The project will be consistent with the General Plan requirements. An existing stormwater basin is located within the Plan Area, adjacent to State Highway 99, and used for Caltrans purposes. This basin will be enlarged to detain storm water for Caltrans. A new drainage basin will be constructed, which will detain water from the Plan Area – except storm water runoff from the existing gas station and car wash sites, and the north side of Glenwood Avenue, which drains to lines that carry the water to existing basins north of the Plan Area. The new basin will be south of the planned park and school facilities. The area around the basin will be landscaped, so that the area can be used for recreational purposes when dry.</p> <p>The new storm drainage lines include a 30-inch overflow line to run from the outfall structure at the new basin to an existing 42-inch storm drainage line in Lander Avenue.</p>
	Guiding Policies 10.4-j	<p>Coordinate Facilities Planning With Urban Expansion. Within two years of adoption of the General Plan, determine appropriate locations for new fire stations/facilities, based on the configuration and phasing of new development and urban expansion. Ease of access and efficient service areas should be major determinants. When preparing master plans, assess the ability of the Fire Department to meet established service standards, and identify strategies to mitigate potential service impacts. Ensure</p>	<p>The project is consistent with the General Plan requirements. A 2007 Space Needs Assessment confirmed that existing facilities and staffing are not adequate to maintain a sufficient level of service for future population growth. To address this concern, the City is in the process of developing a new public safety facility for police and fire administration. The new facility, to be located at 244 North Broadway, is to accommodate a projected staff of 242 by 2030, as calculated in the Needs Assessment.</p>

Chapter / Element	Type & No.	Text	Consistency Determination
		that the Capital Facility Fee program, the Community Facilities District #2 and any other funding mechanisms are updated to provide adequate funding of required facilities, equipment, apparatus and services.	The development of the Plan Area does not warrant the need for any new public safety facilities to be located within the Plan Area. The City of Turlock charges a public safety impact fee on new development to cover the infrastructure costs associated with the increase in needed public safety services that result from new development. These fees will be used to expand police and fire facilities on a citywide basis as development occurs.
	Guiding Policies 10.4-m	Maintain Appropriate Urban Design Standards. Roadways shall be developed in accordance with General Plan standards contained in Chapter 5 of the General Plan. Deviations from roadway standards shall not be granted unless it is determined by the Fire Department and the City Engineer that is shall have no impact on the delivery of fire services to the affected area.	The project is consistent with the General Plan requirements. The planned roadways within the Plan Area are designed to conform to the General Plan standards.
	Guiding Policies 10.4-w	Coordinate Facilities Planning With Urban Expansion. When preparing master plans, assess the ability of the Police Department to maintain service levels, and identify strategies to mitigate potential service impacts. Ensure that the Capital Facility Fee program, the Community Facilities District #2 and any other funding mechanisms are updated to provide adequate funding of required facilities, equipment, apparatus and services.  This may include implementation of the second phase of the Public Safety Building pursuant to the Space Needs Assessment.	The project is consistent with the General Plan requirements. A 2007 Space Needs Assessment confirmed that existing facilities and staffing are not adequate to maintain a sufficient level of service for future population growth. To address this concern, the City is in the process of developing a new public safety facility for police and fire administration. The new facility, to be located at 244 North Broadway, is to accommodate a projected staff of 242 by 2030, as calculated in the Needs Assessment.  The development of the Plan Area does not warrant the need for any new public safety facilities to be located within the Plan Area. The City of Turlock charges a public safety impact fee on new development to cover the infrastructure costs associated with the increase in needed public safety services that result from new development. These fees will be used to expand police and fire facilities on a citywide basis as development occurs.

Source: City of Turlock General Plan, 2012.

**Conclusion:** The proposed Master Plan will result in additional infrastructure, roadways, residential, public, and commercial development consistent with the applicable goals and policies of the General Plan. Proposed uses and design will not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project. The project will result in a *less than significant* impact.

**Mitigation Measure:** None are required.

**Impact #3.10.3 – Conflict with any applicable habitat conservation plan or natural community conservation plan.**

The Plan Area is located on the southern boundary of the City, to the north of State Highway 99. The City has no habitat conservation plan or natural community conservation plan for the proposed Plan Area.

**Conclusion:** The proposed Master Plan not conflict with any applicable habitat conservation plan or natural community conservation plan. The project will result in *no impact*.

**Mitigation Measure:** None are required.

## 3.11 Noise

### 3.11.1 INTRODUCTION

This section provides an evaluation of the potential noise impacts that would be caused by implementation of the proposed project. The noise analysis was conducted by J.C. Brennan and Associates, under contract to Quad Knopf (See Appendix G). The discussion starts with an overview of regulation that is normally applicable to the noise environmental factor, followed by a description of the physical setting of both the site and surrounding lands. An analysis is then provided to determine whether the impact(s) would be less than significant, significant without mitigation, or significant and unavoidable. If an impact is significant and can be reduced with mitigation, then a description of the mitigation measure(s) is provided.

### 3.11.2 ENVIRONMENTAL SETTING

To quantify existing ambient noise levels in the vicinity of the project site, short-term noise level measurements were conducted at five locations on the project site, and continuous 24-hour noise level measurements at two locations. The noise level measurements were conducted during the weekdays in July 2007. The noise level measurements were conducted to determine typical background noise levels and for comparison to the project related noise levels. Table 3.11-1 shows a summary of the noise measurement results.

**Table 3.11-1  
Existing Ambient Noise Monitoring Results**

		Average Measured Hourly Noise Levels, dBA							
Site	Location	Date	Ldn	Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm - 7 am)		
				Leq	L50	Lmax	Leq	L50	Lmax
Short-term Noise Measurement Sites									
1	Southwest Portion of Project Site	July 07, 2007	---	67.4	66.9	73.9			
2	Northwest Portion of Project Site	July 07, 2007	---	62.4	52.6	82.4			
3	Northeast Portion of Project Site	July 07, 2007	---	56.05	48.8	71.4			
4	Eastern Project Boundary	July 07, 2007	---	60.0	47.8	74.6			
5	Southeast Portion of Project Site	July 07, 2007	---	76.9	75.7	83.9			
Continuous 24-hour Noise Measurement Sites									
A	Northern Project Boundary	July 04, 2007	67.0	61.7	53.3	82.2	60.4	55.2	79.9
A	Northern Project Boundary	July 04, 2007	67.8	61.9	55.0	82.7	61.3	56.9	81.1
B	Under ALUC Transitional Surface	July 17, 2007	63.3	56.0	55.1	69.9	57.0	52.5	69.7

Source : j.c. brennan & associates, Inc., 2007.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

### ***Major Noise Sources in the Project Vicinity***

Transportation: Motor vehicle traffic is the major contributor to the existing noise environment in the project vicinity. Vehicular noise within the project vicinity occurs primarily along State Route 99 and local surface streets. A secondary transportation noise source which is evaluated for this analysis includes aviation noise from the Turlock Airpark. Turlock Airpark operations have a potential to occur along the northwestern portion of the proposed project site.

Non-Transportation: Commercial operations in the vicinity of the project were not occupied during the survey and therefore are not considered contributors to the existing noise environment. Agricultural operations are currently located on the project site and to the south and east of the project site.

### ***Noise-Sensitive Land Uses in the Project Vicinity***

Noise sensitive land uses in the immediate project vicinity consist of single-family residential uses located adjacent to the northwest portion of the project site. Future noise sensitive uses associated with the project include residential uses and an elementary school.

### ***Existing Noise Environment in the Project Vicinity***

To determine the existing traffic noise levels at the identified sensitive receivers within the project vicinity, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used with the California Vehicle Noise Emission Levels. The FHWA Model is based upon the Calvenno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. Traffic volumes were provided by the project traffic consultant. Truck usage and vehicle speeds on the project roadways were estimated from field observations and Caltrans data where available.

Table 3.11-2 shows the predicted existing traffic noise levels in terms of the Day/Night Average Level descriptor (Ldn) at a standard distance of 100 feet from the centerlines of the existing immediate project-area roadways for existing conditions, as well as distances to existing traffic noise contours. The extent to which existing land uses in the project vicinity are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise.

**Table 3.11-2  
Existing Traffic Noise Levels and Distance to Contours**

Roadway	Segment	Ldn @ 100 ft.	Distance to Contours (feet)		
			70 dB L <sub>dn</sub>	65 dB L <sub>dn</sub>	60 dB L <sub>dn</sub>
Lander Ave.(SR 165)	SR 99 S to Simmons Rd.	65 dB	49	105	226
Lander Ave.(SR 165)	East Linwood to SR 99 N	66 dB	55	119	257
Lander Ave.(SR 165)	North of Linwood Ave.	66 dB	51	110	237
Golden State Blvd.	North of Berkeley Ave.	63 dB	32	68	147
Golden State Blvd.	South of Berkeley Ave.	63 dB	33	72	154
Golf Rd.	Glenwood Ave. to E Linwood Ave.	58 dB	17	37	79
Golf Rd.	South of Glenwood Ave.	57 dB	14	31	66
E. Linwood Ave.	Lander Ave. to Golf Rd.	60 dB	21	45	98
Glenwood Ave.	Golf Rd. to Lander Ave.	59 dB	20	42	91
SR 99	SR 99 at the Project Site	79 dB	421	907	1955

Source: j.c. brennan & associates, Inc., 2013.

Notes: Distances to traffic noise contours are measured in feet from the centerline of each roadway.

### ***Existing Aviation Noise Levels***

The Morgan Ranch project falls within the Airport Land Use Planning Boundary as specified within the Stanislaus County Airport Land Use Commission (ALUC) Plan. Turlock Airpark is a private airport, with a single runway that is 2,075 feet long and 60 feet wide. The runway, designated 13-31, is oriented north-northwest to south-southeast. The Airpark is reported to have an average of 29 aircraft operations per week. There are approximately 32 aircraft based at the airpark, with 12 single engine aircraft and 20 ultralights. The ultralights average about 12 operations per week. The ultralight operation count is not figured into the total count for Airpark. Additionally, one helicopter which is used for crop dusting is based at the field, and operates when needed.

Aviation activity associated with the Turlock Airpark has the potential to occur over the northwestern boundary of the project site. On July 17, 2007, continuous hourly noise measurements were conducted in the vicinity of the northern project boundary, directly under the ALUC approach and transitional surface area. The noise measurements were conducted for a 24-hour period with the sound level meter programmed to collect single event noise level data due to aircraft flyovers, as well as overall hourly noise level data. See Figure 1 of the Noise Study for the location of the noise measurement site.

Instrumentation consisted of LDL Model 820 precision integrating sound level meters. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

The results indicated that measured aircraft events resulted in sound exposure levels (SEL) ranging from 76 dB to 85 dB in the ALUC approach and transition surface area. The results also indicated that typical operation resulted in a mean SEL of 80.7 dB at an approximate distance of 1000 feet from the north end of the runway, and an assumed elevation of 500 feet above ground

level (AGL). Assuming a worst case of seven aircraft events occur per day along the northwestern project boundary, with all of the aviation events occurring during daytime hours (7 a.m. to 10 p.m), the CNEL value can be calculated on the project site.

The CNEL may be calculated as follows:

$$\text{CNEL} = \text{SEL} + 10 \log N_{\text{eq}} - 49.4 \text{ dB, where:}$$

SEL is the mean SEL of the event,  $N_{\text{eq}}$  is the sum of the number of daytime events (7 a.m. to 10 p.m.) per day plus ten times the number of nighttime events (10 p.m. to 7 a.m.) per day, and 49.4 is ten times the logarithm of the number of seconds per day. Based upon the above-described noise level data, number of operations and methods of calculation, the CNEL value for aviation events at the noise measurement site is 40 dB. Therefore, the predicted aviation exterior noise level on the project site will not exceed 45 dB CNEL.

### 3.11.3 REGULATORY SETTING

#### *Federal*

Noise is regulated at the federal, State, and local levels through regulations, policies, plans, and/or local ordinances. Local policies are commonly adaptations of federal and State guidelines, based on prevailing local conditions or special requirements.

#### **FEDERAL HIGHWAY ADMINISTRATION**

The Federal Highway Administration (FHWA) has a noise regulation that applies when a state department of transportation requests federal funding for participation in the project. Although funding sources for proposed roadway work along existing streets are not known at this time, it is not uncommon for federal funds to be used for local roadway projects. Therefore, Public Law 91-605, 84 Stat. 1713 (23 Code of Federal Regulations 772) Procedures of Abatement of Highway Traffic Noise and Construction Noise may apply during roadway construction. This regulation requires the highway agency to investigate traffic noise impacts in areas adjacent to federally-aided highways, for either a highway in a new location or the reconstruction of an existing highway. The regulation requires a three-part approach, including land use planning and control, source control (e.g., controlling major sources of noise), and highway project noise mitigation. Mitigations require:

- Identification of traffic noise impacts and examination of potential mitigation measures;
- Incorporation of reasonable and feasible noise mitigation measures into the highway project; and
- Coordination with local officials to provide helpful information on compatible land use planning and control.

According to Title 23 CFR Part 772.5 of the FHWA standards, traffic noise impacts occur when the predicted traffic noise level in the design year approaches or exceeds the Noise Abatement Criteria (NAC) specified by 23 CFR 772 or substantially exceeds the existing noise level. A noise level is considered to approach the NAC for a given activity if it is within 1 dB (A-weighted decibels) of the NAC.

A substantial noise increase occurs when the project’s worst-hour design-year noise level, as defined by the equivalent sound level (Leq), exceeds the existing worst-hour noise level by 12 dB or more.

Table 3.11-3 summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

**Table 3.11–3  
Activity Categories and Noise Abatement Criteria (NAC)**

<b>Activity Category</b>	<b>NAC, Hourly A-Weighted Noise Level (dBA – Leq [h])</b>	<b>Description of Activities</b>
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties, or activities not included in categories A or B above
D	--	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Federal Highway Administration, 2011.

In identifying noise impacts, primary consideration is given to exterior areas of frequent human use. In situations where there are no exterior activities, or where the exterior activities are far from the roadway or physically shielded in a manner that prevents an impact on exterior activities, the interior criterion (Activity Category E) is used as the basis for determining a noise impact.

**Noise Abatement Criteria**

Code of Federal Regulations (CFR) Title 23, Part 772 of the FHWA standards and the Caltrans Traffic Noise Analysis Protocol (Protocol) require that noise abatement be considered for projects that are predicted to result in traffic noise impacts. A traffic noise impact is considered to occur when future predicted design-year noise levels with the project “approach or exceed” Noise Abatement Criteria (NAC) defined in CFR Title 23, Part 772 or when the predicted design-year noise levels with the project substantially exceed existing noise levels.

Where traffic noise impacts are identified, noise abatement must be considered for reasonableness and feasibility as required by 23 CFR 772 and the Protocol. The overall reasonableness of noise abatement is determined by considering factors such as cost, absolute predicted noise levels, predicted future increase in noise levels, expected noise abatement benefits, build date of surrounding residential development along the highway, environmental impacts of abatement construction, opinions of affected residents, input from the public and local agencies, and social, legal, and technological factors.

Code of Federal Regulations Title 23, Part 772 states that for noise abatement to be considered acoustically feasible, it must be predicted to provide at least a 5 dB minimum reduction at an impacted receptor. Additionally, 23 CFR 772 now requires an acoustic design goal for abatement. The Caltrans acoustic design goal is that noise abatement must be predicted to provide at least 7 dB of noise reduction at one or more benefited receptors. In addition, barriers should be designed to intercept the line-of-sight from the exhaust stack of a truck to the first tier of receivers, as required by the Highway Design Manual, Chapter 1100. Other factors that affect feasibility include topography, access requirements for driveways and ramps, presence of local cross streets, utility conflicts, other noise sources in the area, and safety considerations.

The Protocol defines the procedure for assessing reasonableness of noise barriers from a cost perspective. A cost-per-residence allowance is calculated for each benefited residence (i.e., residences that receive at least 5 dB of noise reduction from a noise barrier). The 2011 base allowance is \$55,000. Additional allowance dollars are added to the base allowance based on absolute noise levels, the increase in noise levels resulting from the project, achievable noise reduction, and the date of building construction in the area. Total allowances are calculated by multiplying the cost-per-residence by the number of benefited residences. If the total allowance for all evaluated noise barriers is more than 50 percent of the estimated construction cost, the allowance per residence is modified to a reduced value.

### ***Construction Noise and Vibration***

There are no Caltrans or FHWA standards for construction noise or vibration. One reference suggesting vibration standards is the Federal Transit Administration (FTA) publication concerning noise and vibration impact assessment from transit activities. Although the FTA guidelines are to be applied to transit activities and construction, they may be reasonably applied to the assessment of the potential for annoyance or structural damage resulting from other activities. To prevent vibration annoyance in residences, a vibration velocity level of 80 VdB or less is suggested when there are fewer than 70 vibration events per day. A level of 100 VdB or less is suggested by the FTA guidelines to prevent damage to fragile buildings.

### **State**

### **CALTRANS VIBRATION GUIDANCE**

Construction vibration is regulated in accordance with standards established by the Transportation and Construction-Induced Vibration Guidance Manual, issued by the California Department of Transportation (Caltrans). Table 3.11-4 presents these standards.

**Table 3.11-4  
Groundborne Vibration Exposure Standards**

Structure and Condition	Maximum Peak Particle Velocity (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic building, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
Historic and older residential structures with plaster walls and ceilings	0.50	0.25
New residential structures with gypsum board walls and ceilings	1.00	0.50
Modern commercial and industrial buildings	2.00	0.50

Source: Jones & Stokes, 2004.

Transient sources create a single, isolated vibration event, such as blasting or drop-ball impacts according to Table 3.11-4. Continuous/frequent intermittent sources include multiple impacts from pile drivers, the use of vibratory compaction equipment, and other construction equipment that creates vibration other than in single events. This Manual applies to Caltrans initiated projects.

**Local**

**CITY OF TURLOCK**

**General Plan**

Pursuant to California Code Title 14, Section 65300 the 2012 Turlock General Plan addresses noise in Chapter 9 with its noise element. Policies in the noise element also mitigate potential impacts through both preventative and responsive actions. Both federal and State agencies oversee regulation of noise sources such as traffic, railroad operations and aircraft operations. The noise element has a direct correlation with the land use, circulation, and housing elements through all applicable regulations. “It (the noise element) guides the location of industrial land uses and transportation facilities, since they are common sources of excessive noise levels. This element also guides the location of particularly noise-sensitive uses, such as residences, schools, churches, and hospitals, so that they may be less affected by noise.” The City’s guiding policies are listed below. All tables and figures listed with the policies can be found in the 2012 General Plan.

**Policy 9.4-a Land Use Compatibility:** Ensure that new development is compatible with the noise environment, by continuing to use potential noise exposure as a criterion in land use planning.

**Policy 9.4-b Prevent Degradation of Noise Environment:** Protect public health and welfare by eliminating existing noise problems where feasible, maintaining an acceptable

indoor and outdoor acoustic environment, and preventing significant degradation of the acoustic environment.

**Policy 9.4-c Protect Residential Areas and Sensitive Uses:** Minimize excessive noise exposure in residential areas and in the vicinity of such uses as schools, hospitals, and senior care facilities.

**Policy 9.4-d Required Noise Analysis:** Use the noise and land use compatibility matrix (Table 9-1) and Future Noise Contours map (Figure 9-2 of the Noise Study) as review criteria for all new development. For proposed development located where projected noise exposure would be other than “normally acceptable,” and which requires discretionary review, require that a noise analysis be conducted. *A required noise analysis should:*

- Be prepared by a certified noise consultant or acoustical engineer;
- Be funded by the applicant;
- Include a representative, on-site day and night sound level measurement;
- Include a delineation of current (measured) and projected (10 years) noise contours with and without the proposed project, ranging from 55 to 75 dBA (Ldn) within the proposed development site; and
- Include a description of adequate and appropriate noise abatement measures where sound measurements exceed Table 9-2 standards for the proposed use.

**Policy 9.4-e Noise-Attenuating Features:** For all projects that have noise exposure levels other than “normally acceptable” and which require discretionary review, require site planning and architecture to incorporate noise-attenuating features. With mitigation, development should meet allowable outdoor and indoor noise exposure standards in Table 9-2. In particular, new residential, transient lodging, school, library, church, hospital, and convalescent home development should be designed to provide a suitable interior noise environment of no greater than 45 dB CNEL or Ldn.

*Site planning measures include setbacks, building placement in relation to topography, and orientation of sensitive indoor and outdoor activity areas away from noise sources. Building measures may include:*

- Facades constructed substantial weight and insulation;
- Sound-rated windows and doors;
- Active cancellation;
- Acoustic baffling of vents for chimneys, fans, and gable ends;
- Ventilation system affording comfort under closed-window conditions; and
- Double doors and heavy roofs with ceilings of two layers of gypsum board on resilient channels.

**Policy 9.4-f Vibration Reduction:** Require that new development near railroad tracks is limited as follows to avoid impact from excessive noise vibration:

- No new buildings where low ambient vibration is essential for interior operations may be located within 225 feet of railroad tracks. These uses may include, but are not limited to, vibration-sensitive research and manufacturing; hospital research areas; concert halls; and TV/recording studios;
- No new residences or other buildings where people sleep may be located within 100 feet of railroad tracks. These include multi-family dwellings, houses, hospital patient rooms, and hotels; and
- No schools, churches, or commercial offices may be located within 70 feet of railroad tracks.

**Policy 9.4-g Noise-Sensitive Uses—Required Mitigation:** Do not allow new development of noise sensitive uses where the noise level due to non-transportation noise sources will exceed the noise level standards of Table 9-3, as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in the table.

**Policy 9.4-h Non-Transportation Noise Sources—Required Mitigation:** Require mitigation of noise created by new proposed non-transportation noise sources so that it does not exceed the noise level standards of Table 9-2 as measured immediately within the property line of lands designated for noise-sensitive uses. Appropriate mitigation measures include:

- Dampen or actively cancel noise sources;
- Increase setbacks for noise sources from adjacent dwellings;
- Use soundproofing materials and double-glazed windows;
- Screen and control noise sources, such as parking and loading facilities, outdoor activities, and mechanical equipment;
- Use open space, building orientation and design, landscaping and running water to mask sounds; and
- Control hours of operation, including deliveries and trash pickup.

**Policy 9.4-i Noise Ordinance:** Continue to enforce the City Noise Control Ordinance and update as necessary.

**Policy 9.4-j Transportation Noise Buffers:** Where feasible, develop and implement noise reduction measures when undertaking improvements, extensions, or design changes to City streets. Measures may involve some combination of setbacks, earth berms, solid noise walls, placement of non-occupancy accessory structures or windowless building sites towards the noise source, and building insulation techniques.

*Mitigation through the design and construction of a noise barrier (wall, berm, or combination wall/berm) is the most common way of alleviating traffic noise impacts. Noise barriers often have the disadvantage of unsightliness; however, properly landscaped berms or walls shielded with climbing vines can, over time, become visual assets. The use of noise barriers should be minimized.*

According to the noise element, motor vehicles, including automobiles, trucks, buses, and motorcycles are the major sources of noise in the City. State Highway 99 is the greatest source of noise resulting in levels above 70 dB. Eighteen freight train operations along Golden State Boulevard occur per day. Measurements taken between Golf Road and F Street and just south of Padres Road, resulted in 79 dB. Airport noise resulted in 65 dB in close proximity to the airport. Industrial uses such as mechanical equipment, generators, and vehicles all contribute to the noise. Construction related activities and other sources are also contributing factors to noise throughout the City.

Interior and exterior noise levels are classified as being “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” or “clearly unacceptable” for different land use types. According to these classifications the following explanations are provided:

#### *Normally Acceptable*

- Indoor Uses: Either the activities associated with the land use are inherently noisy or standard construction methods will sufficiently attenuate exterior noise to an acceptable level; for land use types that are compatible because of inherent noise levels, sound attenuation must be provided for associated office, retail, and other noise-sensitive indoor spaces sufficient to reduce exterior noise to an interior maximum of 50 dB CNEL.
- Outdoor Uses: Outdoor activities associated with the land use may be carried out with minimal interference.

#### *Conditionally Acceptable*

- Indoor Uses: Noise reduction measures must be incorporated into the design of the project to attenuate exterior noise to the indoor noise levels listed in Table 9-2.
- Outdoor Uses: Noise reduction measures must be incorporated into the design of the project to attenuate exterior noise to the outdoor noise levels listed in Table 9-2. Acceptability is dependent upon characteristics of the specific use.

#### *Normally Unacceptable*

- Indoor Uses: Extensive mitigation techniques are required to make the indoor environment acceptable for indoor activities. Noise level reductions necessary to attenuate exterior noise to the indoor noise levels listed in Table 9-2 are difficult to achieve and may not be feasible.

- **Outdoor Uses:** Severe noise interference makes the outdoor environment unacceptable for outdoor activities. Noise level reductions necessary to attenuate exterior noise to the outdoor noise levels listed in Table 9-2 are difficult to achieve and may not be feasible.

*Clearly Unacceptable*

- New construction or development should generally not be undertaken.

Table 3.11-5 lists the allowable noise exposure for both outdoor activity areas and interior spaces. The California Office of Planning and Research sets the limits based on agency guidelines. “For non-residential uses, where an outdoor activity area is not proposed, the standard does not apply. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving use. Where it is not possible to reduce noise in outdoor activity areas to the allowable maximum, levels up to 5 dB higher may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.”

**Table 3.11-5  
Allowable Noise Exposure dBA**

<b>Land Use</b>	<b>Outdoor Activity Areas (CNEL)</b>	<b>Interior Spaces (CNEL)</b>
Residential	60	45
Motels, Hotels	60	45
Hospitals, Nursing Homes, Schools, Libraries, Museums, Churches	60	45
Playgrounds, Parks, Recreation Uses	65	50
Commercial and Office Uses	65	50
Industrial Uses	70	65

Source: City of Turlock, 2013.

According to the listed guidelines in Table 3.11-5, industrial uses create the greatest amount of noise compared to all other sources. Playgrounds, parks, and recreational uses, as well as commercial and office uses account for the second greatest source of noise. Of the interior spaces, the same sources produce the greatest amount of noise. Table 3.11-6 lists the noise level performance standards for non-transportation sources. “Each of the noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.”

**Table 3.11-6  
Noise Level Performance Standards for Non-transportation Sources**

<b>Noise Level Descriptor</b>	<b>Daytime (7 a.m. to 10 p.m.)</b>	<b>Nighttime (10 p.m. to 7 a.m.)</b>
Hourly Leq, dB	55	45
Maximum Level, dB	75	65

Source: City of Turlock, 2013.

The standards for exposure to non-transportation noise sources listed in Table 3.11-6 would apply to uses such as industrial facilities, automotive servicing, or equipment yards. These standards apply to the noise sources themselves, as well as to proposed development that may be affected by existing noise sources.

### ***Municipal Code***

The Turlock Municipal Code Title 9, Chapter 9-2, Article 3, Sections 9-2-301 through 9-2-315 provides noise standards for the City. According to Section 9-2-301, the specific purposes of the noise standards are as follows:

- In order to control unnecessary, excessive, and annoying noise and vibration on the City, it is hereby declared to be the policy of the City to prohibit such noise and vibration generated from or by all sources as specified in this chapter. It shall be the policy of the City to maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the City where noise levels are above acceptable values.
- It is determined that certain noise levels and vibrations are detrimental to the public health, welfare, and safety and are contrary to the public interest. Therefore, the Council does ordain and declare that creating, maintaining, or causing, or allowing to be created, caused, or maintained, any noise or vibration in a matter prohibited by, or not in conformity with, the provisions of this chapter is a public nuisance and shall be punishable as such.

Section 9-2-307 further states that “the ambient noise varies throughout the community, depending upon proximity to highways, population density, and land use. Different standards are set for various segments of the community which reflect the existing day and nighttime ambient noise levels.”

### **3.11.4 METHODOLOGY**

The methodology applied to this section consists of using information from the noise and traffic studies completed for the proposed project. Results of both studies were analyzed to determine the changes in noise levels cause from the proposed project, both at proposed project’s site and at affected surrounding properties. A literature review of all applicable federal, State and local noise regulations was also completed.

### **NOISE FUNDAMENTALS**

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. Sound is characterized by various parameters that describe the rate of oscillation of sound waves, the distance between successive troughs or crests, the speed of propagation, and the pressure level or energy content of a given sound wave. In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. The

unit of sound pressure, a ratio of the faintest sound detectable by a keen human ear, is called a decibel (dB).

### ***Noise Descriptors***

A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. The zero point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or fewer are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness.

Because sound or noise can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale similar to the Richter scale used for earthquake magnitude is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, noise levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called A weighting, written as dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Any further reference to decibels in this report written as dB should be understood to be A-weighted values.

Many methods have been developed for evaluating community noise to account for, among other things:

- Variation in noise levels over time;
- Influence of periodic individual loud events; and
- Community response to changes in the community noise environment.

Several methods have been developed to measure sound over a period of time, including:

- Equivalent Sound Level (Leq);
- Community Noise Equivalent Level (CNEL); and
- Day/Night Average Sound Level (Ldn).

These methods are described and defined below:

### ***Leq***

Time variations in noise exposure are typically expressed in terms of a steady-state energy level equal to the energy content of the time-varying period (called Leq), or, alternately, as a statistical description of the sound pressure level that is exceeded over some fraction of a given observation period. For example, the noise levels exceeded on 10 percent of readings is called L<sub>10</sub>, the median (50<sup>th</sup> percentile) reading is called L<sub>50</sub>, etc.

### **CNEL**

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, State law requires that, for planning purposes, an artificial dB increment penalty be added to quiet time noise levels in a 24-hour noise descriptor called CNEL.

### **Ldn**

Another commonly used method is the day/night average level or Ldn. The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period, called the Leq. The Ldn is calculated by averaging the Leqs for each hour of the day at a given location after penalizing the sleeping hours (defined as 10:00 p.m. to 7:00 a.m.) by 10 dBA to account for the increased sensitivity of people to noises that occur at night. The maximum noise level recorded during a noise event is typically expressed as Lmax. The sound level exceeded over a specified time can be expressed as Ln (e.g., L<sub>90</sub>, L<sub>50</sub>, L<sub>10</sub>, etc.). L<sub>50</sub> equals the level exceeded 50 percent of the time, L<sub>10</sub> equals the level exceeded 10 percent of the time, etc.

People respond to changes in sound pressure which are measured on a noise scale in a logarithmic manner. In general, a 3-dB change in sound pressure level is considered a just detectable difference in most situations. A 5-dB change is readily noticeable, and a 10-dB change is considered a doubling (or halving) of the subjective loudness. Note that a 3-dB increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume, or by about a 7-mile-per-hour increase or decrease in speed.

For each doubling of distance from a point noise source, the sound level will decrease by 6 dB. In other words, if a person is 100 feet from a machine and moves 200 feet from that source, sound levels will drop by approximately 6 dB. Moving 400 feet away, sound levels will drop approximately another 6 dB. For each doubling of distance from a line source, such as a roadway, noise levels are reduced 3 to 5 decibels, depending on the ground cover between the source and the receiver.

### **NOISE EXPOSURE**

As shown in Table 3.11-7 a noise level of 70 dBA is the level at which ambient noise begins to interfere with one's ability to carry on a normal conversation at reasonable separation without raising one's voice. The noise attenuation that occurs within residential structures with closed windows is about 20 dB. Due to this 20 dB noise attenuation between outdoor levels and indoor levels, a 45dB interior noise standard can be achieved with an exterior noise exposure of 65 dB CNEL without any specialized structural attenuation (e.g., dual-paned windows). Local and State regulations recognize this 20dB attenuation. For example, the County of Stanislaus has set a 45dB standard for interior noise and a 65 dB standard for exterior noise. California Code of Regulations Title 24 Part 2, Vol. 1 Section 1207, which require noise insulation adequate to achieve an interior noise level of CNEL 45 dB in hotels, motels, dormitories, apartment homes, and dwellings (other than detached single-family dwellings).

**Table 3.11-7  
Noise Levels and Human Response**

<b>Noise Source</b>	<b>Noise Level (dBA)</b>	<b>Response</b>
Library	30	Very quiet
Refrigerator Humming	40	Quiet
Quiet office	50	Quiet
Normal conversation	60	Intrusive
Vacuum cleaner	70	Telephone use difficult
Freight train at 50 feet	80	Interferes with conversation
Heavy-duty truck at 50 feet	90	Annoying
Jet takeoff at 2,000 feet	100	Very annoying, hearing damage at sustained exposure levels
Unmuffled motorcycle	110	Maximum vocal effect; physical discomfort
Jet takeoff at 200 feet	120	Regular exposure over one minute risks permanent hearing loss
Shotgun firing	130	Pain threshold
Carrier jet operation	140	Harmfully loud

Source: Branch C. M and R. D. Beland. 1970.

Table 3.11-5 is “provided as reference concerning the sensitivity of different land uses to their noise environment. It is intended to illustrate the range of noise levels which will allow the full range of activities normally associated with a given land use” (County of Stanislaus 1994).

As shown in Table 3.11-8, exterior noise exposure is normally acceptable for low density residential in the range from 50 to 60 L<sub>dn</sub> (or CNEL) and multi-family residential from 50 to 65 L<sub>dn</sub> (or CNEL). Industrial ranges from 50 to 75 L<sub>dn</sub> (or CNEL), while playgrounds and neighborhood parks are 50 to 70 L<sub>dn</sub> (or CNEL).

### **CONSTRUCTION NOISE ASSUMPTIONS**

The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston.

Table 3.11-9 provides a list of the construction equipment measured along with the associated measured noise emissions and measured percentage of typical equipment use per day. From this acquired data, the FHWA developed the Roadway Construction Noise Model, which may be used for the prediction of construction noise. For the purposes of this analysis, the Roadway Construction Noise Model will be used to calculate the construction equipment noise emissions.

**Table 3.11-8  
Land Use Compatibility for Community Noise Environments**

Land Use Category	Exterior Noise Exposure Ldn or CNEL, dBA					
	55	60	65	70	75	80
Residential - Low Density Single Family, Duplex, and Mobile Homes						
Multi Family Residential			*			
Transient Lodging- Motels and Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, and Amphitheaters						
Sports Arena and Outdoor Spectator Sports						
Playgrounds and Neighborhood Parks						
Golf Courses, Riding Stables, Water Recreation, and Cemeteries						
Office Buildings, Business Commercial, and Professional						
Industrial, Manufacturing, Utilities, and Agriculture						
<b>White= NORMALLY ACCEPTABLE</b> <b>Light Grey=CONDITIONALLY ACCEPTABLE</b> <b>Dark Grey=NORMALLY UNACCEPTABLE</b> <b>Black=CLEARLY UNACCEPTABLE</b>						

Source: City of Turlock, 2012.

Note: \* Interior noise levels shall not exceed 45 Ldn in all new residential units (single and multi family). Development sites exposed to noise levels exceeding 60 Ldn shall be analyzed following protocols in Appendix Chapter 12, Section 1208, A, Sound Transmission Control, 1998 California Building Code.

**Table 3.11-9  
Construction Equipment Noise Emissions and Usage Factors**

Equipment	Acoustical Use Factor <sup>1</sup> (Percent)	Spec 721.560 Lmax @ 50 feet <sup>2</sup> (dBA, slow <sup>3</sup> )	Actual Measured Lmax @ 50 feet <sup>4</sup> (dBA, slow)
Auger Drill Rig	20	85	84
Backhoe	40	80	78
Bar Bender	20	80	N/A
Compactor (ground)	20	80	83
Compressor (air)	40	80	78
Concrete Batch	15	83	N/A
Concrete Mixer Truck	40	85	79
Concrete Pump	20	82	81
Concrete Saw	20	90	90
Crane	16	85	81
Dozer	40	85	82
Dump Truck	40	84	76
Excavator	40	85	81
Flat Bed Truck	40	84	74

<b>Equipment</b>	<b>Acoustical Use Factor<sup>1</sup> (Percent)</b>	<b>Spec 721.560 Lmax @ 50 feet<sup>2</sup> (dBA, slow<sup>3</sup>)</b>	<b>Actual Measured Lmax @ 50 feet<sup>4</sup> (dBA, slow)</b>
Front End Loader	40	80	79
Generator	50	82	81
Grader	40	85	N/A
Jackhammer	20	85	89
Paver	50	85	77
Pneumatic Tools	50	85	85
Pumps	50	77	81
Roller	20	85	80
Tractor	40	84	N/A
Vibrating Hopper	50	85	87
Vibratory Concrete Mixer	20	80	80
Welder/Torch	40	73	74

Source: Federal Highway Administration, 2006.

Notes: 1 Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday; 2 Spec 721.560 is the equipment noise level utilized by the RCNM program; 3 The “slow” response averages sound levels over 1-second increments. A “fast” response averages sound levels over 0.125-second increments; and 4 Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.

### ***Groundborne Vibration***

Groundborne vibration is primarily created from the operation of trucks and construction equipment and consists of rapidly fluctuating motions within the ground that have an average motion of zero. At extreme vibration levels, damage to buildings may occur. Although groundborne vibration can be felt outdoors, it is typically an annoyance only indoors, where the associated effects of the shaking of a building can be notable. Groundborne noise is an effect of groundborne vibration and typically only exists indoors. It is produced from noise radiated from the motion of the walls and floors of a room and may consist of the rattling of windows or dishes on shelves.

### **CONSTRUCTION VIBRATION IMPACT ASSESSMENT METHODOLOGY**

Vibration is similar to noise in that it involves a source, a transmission path, and a receiver. While vibration is similar to noise in some ways, it differs in that noise is generally considered to be longitudinal pressure waves transmitted through air, whereas vibration usually consists of oscillating waves that cause movement of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person’s perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-10, which was developed by Caltrans, shows the vibration levels that would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second. As indicated the threshold for damage to structures ranges from 2 to 6 in/sec. One-half this minimum threshold or 1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is notes as 0.1 in/sec p.p.v.

**Table 3.11-10  
Effects of Vibration on People and Buildings**

Peak Particle Velocity inches/second	Peak Particle Velocity mm/second	Human Reaction	Effect on Buildings
0-.006	0.15	Imperceptible by people	Vibrations unlikely to cause damage of any type
.006-.02	0.5	Range of Threshold of perception	Vibrations unlikely to cause damage of any type
.08	2.0	Vibrations clearly perceptible	Recommended upper level of which ruins and ancient monuments should be subjected
0.1	2.54	Level at which continuous vibrations begin to annoy people	Virtually no risk of architectural damage to normal buildings
0.2	5.0	Vibrations annoying to people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
1.0	25.4		Architectural Damage
2.0	50.4		Structural Damage to Residential Buildings
6.0	151.0		Structural Damage to Commercial Buildings

Source: California Department of Transportation, 1976.

Typical vibration levels associated with construction equipment are as follows, and shown in Table 3.11-11.

**Table 3.11-11  
Vibration Levels for Varying Construction Equipment**

Type of Equipment	Peak Particle Velocity @ 25 feet	Approximate Velocity Level @ 25 feet
Large Bulldozer	0.089 (inches/second)	87 (VdB)
Loaded Trucks	0.076 (inches/second)	86 (VdB)
Small Bulldozer	0.003 (inches/second)	58 (VdB)
Auger/drill Rigs	0.089 (inches/second)	87 (VdB)
Jackhammer	0.035 (inches/second)	79 (VdB)
Vibratory Hammer	0.070 (inches/second)	85 (VdB)
Vibratory Compactor/roller	0.210 (inches/second)	94 (VdB)

Source: Federal Transit Administration, 2006.

### ***Vibration Perception***

Peak particle velocity (PPV) relates to the maximum instantaneous peak of the vibration signal and is often used in measuring the magnitude of vibration. Scientific studies have shown that human responses to vibration vary by the source of vibration: continuous or transient. Continuous sources of vibration include construction, while transient sources include truck movements. Generally, the thresholds of perception and annoyance are higher for transient sources than continuous sources. Table 3.11-12 shows PPV levels for continuous and transient sources and the associated human response.

**Table 3.11-12  
Response to Groundborne Vibration**

<b>Peak Particle Velocity (inches/second)</b>		<b>Human Response</b>
<b>Continuous</b>	<b>Transient</b>	
0.40	2.00	Severe
0.10	0.90	Strongly perceptible
0.04	0.25	Distinctly perceptible
0.01	0.04	Barely perceptible

Source: Jones & Stokes, 2004.

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans, whose threshold of perception is around 65 VdB. Offsite sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration.

### ***Vibration Propagation***

The propagation of groundborne vibration is not as simple to model as airborne noise. This is because noise in the air travels through a relatively uniform medium, while groundborne vibrations travel through the earth, which may contain significant geological differences. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a push-pull fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or side-to-side and perpendicular to the direction of propagation. All three types of vibration propagation result in earth movement that can be measured through the use of a vibration meter; however, a vibration meter only captures the amount of movement and cannot decipher between the different types of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the

vibration source. However, in order for this drop-off rate to provide accurate results, the nearest receiver needs to be placed a minimum distance away from the source that is greater than double the width of the vibration source. As stated above, this drop-off rate can vary greatly, depending on the soil, but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

### ***Construction-Related Vibration Level Prediction***

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table 3.11-13 gives approximate vibration levels for particular construction activities. The data in the table provide a reasonable estimate for a wide range of soil conditions.

**Table 3.11-13  
Vibration Source Levels for Construction Equipment**

<b>Equipment</b>	<b>Peak Particle Velocity (inches/second)</b>	<b>Approximate Vibration Level (L<sub>v</sub>) at 25 feet</b>
Pile driver (impact)	1.518 (upper range) 0.655 (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

Source: Federal Transit Administration, 2006.

### **FUTURE NOISE-PRODUCING USES DEVELOPED WITHIN THE PROJECT AREA NOISE IMPACT ASSESSMENT METHODOLOGY**

There are a variety of noise sources associated with future development within the project area that have the potential to create noise levels in excess of the applicable noise standards or result in annoyance at existing and future noise-sensitive developments within the project area. Such uses include commercial and retail uses, and public service uses.

At this time specific uses are not known and detailed site and grading plans have not yet been developed. As a result, it is not feasible to identify specific noise impacts associated with each of the proposed uses. However, a general discussion and assessment of impacts can be conducted based upon the possible types of uses associated with these land use designations. The following

is a discussion of the potentially significant noise sources associated with the various types of proposed uses:

### ***Commercial and Retail Land Uses***

Commercial and retail land use activities can produce noise which may affect adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the nearby vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels. The Morgan Ranch includes land uses which are designated community commercial (CC). The primary noise sources generally include medium and heavy duty truck deliveries, trash pickup, parking lot use, and heating, air conditioning and ventilation (HVAC) equipment.

To determine noise levels associated with trucks circulating on the project site combined with loading dock activities, noise level data associated with the Natomas Center in Sacramento, California, were collected. The Natomas Center is a large commercial center similar in size to the proposed project. The loading dock and truck unloading area on the west side of the Natomas Center includes six large store loading docks for a Ross Dress for Less, Michael's, Wal-Mart, Pet's Mart, Staples, and a Home Depot.

The noise measurements were conducted during the busy morning hours between 7:00 a.m. and 10:00 a.m. During the noise measurement survey, the primary noise sources associated with the Natomas Center was loading dock activities, heavy and medium delivery trucks circulating on the site, trash compactors, pallet jacks, trash pick-up activities and truck air brakes. In addition, the noise measurement data included aircraft over-flights and off-site traffic.

During the noise measurement periods, the measured hourly noise levels ranged between 54 dB and 60 dB L50 and between 79 dB and 85 dB Lmax, at a distance of approximately 40 feet from the center of the truck circulation service road. Based upon the site plan, the nearest residences facing the Heavy Commercial Zoning are located across Glenwood Avenue to the north. Based upon the noise measurement data, the predicted loading dock and truck circulation noise levels are expected to exceed the hourly noise level performance criteria. However, since site plans and specific uses have not been determined, the potential impacts cannot be determined.

HVAC equipment can be a primary noise source associated with commercial or retail uses. These types of equipment are often mounted on roof tops, located on the ground or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers or cooling towers.

Noise levels from these types of equipment can vary significantly. Noise levels from these types of sources generally range between 45 dB to 65 dB at a distance of 50 feet. However, numerous noise control strategies can be utilized to mitigate noise levels to ***less than significant*** levels.

### ***Public Use Land Uses***

Public use lands can include infrastructure such as water well pumps or lift stations, and schools. Noise levels for pumps and motors for public service infrastructure can vary significantly depending on size of the equipment, if the equipment is located inside of buildings or submersed below ground.

School and parks can be a source of noise and include children playing at neighborhood parks school playgrounds. Typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB Leq, with maximum noise levels ranging from 70 to 75 dB. It is expected that the playground areas would be utilized during daytime hours. Therefore, noise levels from the playgrounds would need to comply with the City of Turlock 55 dB Leq and 75 dB Lmax exterior noise level standards at the nearest residential uses. Based upon the reference noise level data discussed above, the 55 dB Leq noise contour would be located approximately 100 feet from the center of playgrounds. The 75 dB Lmax contour would be located at approximately 50 feet from the edge of playgrounds. Given the proximity of most parks or elementary schools to residential uses, and the separation between the residential uses by streets, the potential to exceed the noise standards is not expected, unless the playgrounds or parks are located adjacent to residential uses.

### **CONSTRUCTION NOISE IMPACT ASSESSMENT METHODOLOGY**

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-9, ranging from 85 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways and on-site grading. A significant project-generated noise source would include truck traffic associated with transport of heavy materials and equipment to and from construction sites and the movement of heavy construction equipment on the project site, especially during site grading. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

#### **3.11.5 IMPACT EVALUATION CRITERIA**

According to Appendix G, Environmental Checklist of the CEQA Guidelines, noise impacts resulting from the implementation of the proposed project would be considered significant if the project would cause:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels.

- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- 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 expose people residing or working in the project area to excessive noise levels.
- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

**3.11.5 IMPACT ANALYSIS**

**Impact #3.11.1 - Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.**

To assess noise impacts due to project-related traffic increases on the existing local roadway network, both existing and cumulative traffic noise levels are predicted at a representative distance, without and with project conditions.

The FHWA traffic noise prediction model was used to predict existing plus project traffic noise levels at a representative distance of 100 feet from the roadway centerline. Table 3.11-14 shows the predicted traffic noise level increases on the local roadway network for existing plus project conditions. Table 3.11-15 shows the predicted traffic noise levels and potential traffic noise level increases on the local roadway network for the cumulative year 2030 scenario.

**Table 3.11-14  
Existing Plus Project Traffic Noise Levels and Distance to Contours**

Roadway	Segment	Ldn @ 100 feet	Distance to Contours (feet)		
			70 dB L <sub>dn</sub>	65 dB L <sub>dn</sub>	60 dB L <sub>dn</sub>
Lander Ave.(SR 165)	SR 99 S to Simmons Rd.	65 dB	50	107	231
Lander Ave.(SR 165)	East Linwood to SR 99 N	68 dB	70	152	327
Lander Ave.(SR 165)	North of Linwood Ave.	67 dB	60	129	278
Golden State Blvd.	North of Berkeley Ave.	64 dB	37	80	173
Golden State Blvd.	South of Berkeley Ave.	64 dB	37	81	174
Golf Rd.	Glenwood Ave. to E Linwood Ave.	63 dB	33	71	152
Golf Rd.	South of Glenwood Ave.	62 dB	28	60	130
E. Linwood Ave.	Lander Ave. to Golf Rd.	60 dB	21	45	98
Glenwood Ave.	Golf Rd. to Lander Ave.	63 dB	34	74	159
Eastside Parkway	On Project Site	57 dB	14	30	65
SR 99	SR 99 at the Project Site	79 dB	421	907	1955

Source: j.c. brennan & associates, Inc., 2013.

Notes: Distances to traffic noise contours are measured in feet from the centerline of each roadway.

**Table 3.11-15  
Cumulative Year 2030 Traffic Noise Levels and Distance to Contours**

Roadway	Segment	Ldn @ 100 feet	Distance to Contours (feet)		
			70 dB L <sub>dn</sub>	65 dB L <sub>dn</sub>	60 dB L <sub>dn</sub>
Lander Ave.(SR 165)	SR 99 S to Simmons Rd.	67 dB	59	126	272
Lander Ave.(SR 165)	East Linwood to SR 99 N	68 dB	79	171	368
Lander Ave.(SR 165)	North of Linwood Ave.	66 dB	58	125	270
Golden State Blvd.	North of Berkeley Ave.	65 dB	45	97	209
Golden State Blvd.	South of Berkeley Ave.	64 dB	37	80	173
Golf Rd.	Glenwood Ave. to E Linwood Ave.	63 dB	37	79	171
Golf Rd.	South of Glenwood Ave.	63 dB	32	70	150
E. Linwood Ave.	Lander Ave. to Golf Rd.	62 dB	32	68	146
Glenwood Ave.	Golf Rd. to Lander Ave.	63 dB	35	75	161
Eastside Parkway	On Project Site	57 dB	14	31	67
SR 99	SR 99 at the Project Site	83 dB	710	1,529	3,294

Source: j.c. brennan & associates, Inc., 2013

Notes: Distances to traffic noise contours are measured in feet from the centerline of each roadway.

Comparing data in Tables 3.11-14 and 3.11-15, the proposed project will result in an increase in traffic noise levels of 5 dB along Golf Road. The project will not result in increases in traffic noise of 5 dB on other roadways.

Results in Tables 3.11-14 and 3.11-15, also indicate the proposed residential land uses on the project site will be exposed to traffic noise levels associated with S.R. 99, Glenwood Avenue and Golf Road in excess of the City of Turlock generally acceptable noise level standard of 60 dB Ldn. In addition, proposed residential land uses on the project site will be exposed to traffic noise levels associated with S.R. 99 in excess of the conditionally acceptable noise level standard of 65 dB Ldn.

**Conclusion:** The proposed project could result in noise levels that would exceed the standards in the City of Turlock General Plan and Municipal Code as shown in Section 3.11.2. According to predicted existing traffic noise levels in the TIS, impacts would be considered *potentially significant*. However, Mitigation Measures #3.11.1 through #3.11.7 would bring impacts to a *less than significant* level. The following overview is provided since the site plan is in the specific plan stage, and may be of use during finalization of the project site plans. Mitigation Measures #3.11.1 through #3.11.7 follow the overview.

## OVERVIEW OF NOISE MITIGATION OPTIONS

Any noise problem may be considered as being composed of three basic elements: the noise source, a transmission path, and a receiver. The appropriate acoustical treatment for a given project should consider the nature of the noise source and the sensitivity of the receiver. The problem should be defined in terms of appropriate criteria (Ldn, Leq, or Lmax), the location of the sensitive receiver (inside or outside), and when the problem occurs (daytime or nighttime). Noise control techniques should then be selected to provide an acceptable noise environment for

the receiving property while remaining consistent with local aesthetic standards and practical structural and economic limits. Fundamental noise control options include the following:

### ***Use of Setbacks***

Noise exposure may be reduced by increasing the distance between the noise source and the receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, storage yards, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally about 4 to 6 dB per doubling of distance from the source.

### ***Use of Barriers***

Shielding by barriers can be obtained by placing walls, berms or other structures, such as buildings, between the noise source and the receiver. The effectiveness of a barrier depends upon blocking line-of-sight between the source and receiver, and is improved with increasing the distance the sound must travel to pass over the barrier as compared to a straight line from source to receiver. The difference between the distance over a barrier and a straight line between source and receiver is called the "path length difference," and is the basis for calculating barrier noise reduction.

Barrier effectiveness depends upon the relative heights of the source, barrier and receiver. In general, barriers are most effective when placed close to either the receiver or the source. An intermediate barrier location yields a smaller path-length-difference for a given increase in barrier height than does a location closer to either source or receiver.

For maximum effectiveness, barriers must be continuous and relatively airtight along their length and height. To ensure that sound transmission through the barrier is insignificant, barrier mass should be about 3 lbs/square foot, although a lesser mass may be acceptable if the barrier material provides sufficient transmission loss. Satisfaction of the above criteria requires substantial and well-fitted barrier materials, placed to intercept line of sight to all significant noise sources. Earth, in the form of berms or the face of a depressed area, is also an effective barrier material.

There are practical limits to the noise reduction provided by barriers. For vehicle traffic or railroad noise, a 5 to 10 dB noise reduction may often be reasonably attained. A 15 dB noise reduction is sometimes possible, but a 20 dB noise reduction is extremely difficult to achieve. Barriers usually are provided in the form of walls, berms, or berm/wall combinations. The use of an earth berm in lieu of a solid wall may provide up to 3 dB additional attenuation over that attained by a solid wall alone, due to the absorption provided by the earth. Berm/wall combinations offer slightly better acoustical performance than solid walls, and are often preferred for aesthetic reasons.

### ***Site Design***

Buildings can be placed on a project site to shield other structures or areas, to remove them from noise-impacted areas, and to prevent an increase in noise level caused by reflections. The use of one building to shield another can significantly reduce overall project noise control costs, particularly if the shielding structure is insensitive to noise.

Site design should guard against the creation of reflecting surfaces which may increase onsite noise levels. For example, two buildings placed at an angle facing a noise source may cause noise levels within that angle to increase by up to 3 dB. The open end of "U"-shaped buildings should point away from noise sources for the same reason. Landscaping walls or noise barriers located within a development may inadvertently reflect noise back to a noise-sensitive area unless carefully located. Avoidance of these problems while attaining an aesthetic site design requires close coordination between local agencies, the project engineer and architect, and the noise consultant.

### ***Noise Reduction by Building Facades***

When interior noise levels are of concern in a noisy environment, noise reduction may be obtained through acoustical design of building facades. Standard construction practices provide 10-15 dB noise reduction for building facades with open windows, and approximately 25 dB noise reduction when windows are closed. Thus a 25 dB exterior-to-interior noise reduction can be obtained by the requirement that building design include adequate ventilation systems, allowing windows on a noise-impacted facade to remain closed under any weather condition.

Where greater noise reduction is required, acoustical treatment of the building facade is necessary. Reduction of relative window area is the most effective control technique, followed by providing acoustical glazing (thicker glass or increased air space between panes) in low air infiltration rate frames, use of fixed (non-movable) acoustical glazing or the elimination of windows. Noise transmitted through walls can be reduced by increasing wall mass (using stucco or brick in lieu of wood siding), isolating wall members by the use of double or staggered stud walls, or mounting interior walls on resilient channels. Noise control for exterior doorways is provided by reducing door area, using solid-core doors, and by acoustically sealing door perimeters with suitable gaskets.

An additional measure to prevent sound from entering through attic vents would be to acoustically baffle all attic vents. The baffles should introduce at least one 90 degree obstruction to the flow of air through the vent. The baffle should be lined with an acoustically absorbent material such as, one-inch thick, 3 PCF fiberglass duct liner. Please see Appendix G for an example of an acoustical attic vent baffle.

### ***Use of Vegetation***

Trees and other vegetation are often thought to provide significant noise attenuation. However, approximately 100 feet of dense foliage (so that no visual path extends through the foliage) is required to achieve a 5 dB attenuation of traffic noise. Thus the use of vegetation as a noise

barrier should not be considered a practical method of noise control unless large tracts of dense foliage are part of the existing landscape.

Vegetation can be used to acoustically "soften" intervening ground between a noise source and receiver, increasing ground absorption of sound and thus increasing the attenuation of sound with distance. Planting of trees and shrubs is also of aesthetic and psychological value, and may reduce adverse public reaction to a noise source by removing the source from view, even though noise levels will be largely unaffected. It should be noted, however, that trees planted on the top of a noise control berm can actually slightly degrade the acoustical performance of the barrier. This effect can occur when high frequency sounds are diffracted (bent) by foliage and directed downward over a barrier.

In summary, the effects of vegetation upon noise transmission are minor, and are primarily limited to increased absorption of high frequency sounds and to reducing adverse public reaction to the noise by providing aesthetic benefits. Project implementation will result in *potentially significant* noise impacts.

**Mitigation Measure #3.11.1a:** The use of rubberized asphalt or open gap asphalt has been shown to reduce roadway noise levels between 4 and 5 dB. When Golf Road is scheduled to be resurfaced, the road resurfacing should include rubberized asphalt or open gap asphalt from 1st Street to Highway 99.

**Mitigation Measure #3.11.1b:** Based upon the Proposed Project Site Plan, medium and high density residential uses will be located adjacent to Golf Road, Glenwood Avenue and S.R. 99. A sound wall at least 6-feet in height shall be constructed to reduce traffic noise levels at residential areas adjacent to Golf Road and Glenwood Avenue.

If the anticipated S.R. 99 traffic volumes in the Year 2030 (140,000 ADT), as reported in the Turlock General Plan occur, it may not be practical to achieve the exterior noise level standard of 60 dB Ldn. Barriers in excess of 18 feet may be required to achieve the noise level standard of 60 dB Ldn. As a means of complying with the conditionally acceptable standard of 65 dB Ldn, barrier heights would need to be approximately 12-feet in height, while assuming a setback of approximately 250 to 300 feet from the S.R. 99 centerline.

Since grading plans and tentative maps have not been completed for the project site, a more detailed analysis of required barrier heights would be required when those plans are available.

**Mitigation Measure #3.11.1c:** High Density residential units may also apply the exterior noise level standard of 60 dB Ldn at a common outdoor area such as a club house. In this case, site design shall locate the common outdoor areas away from the roads or shall shield the common outdoor areas with the building facades in order to achieve the noise level standards.

Since grading plans and tentative maps have not been completed for the project site, a more detailed analysis of site design would be required when those plans are available.

**Mitigation Measure #3.11.1d:** An analysis of projected future interior traffic noise levels indicate that proposed residential uses with direct exposure to State Route 99 would require window assembly and/ or building façade upgrades at the second floor to comply with the City’s 45 dB Ldn interior noise level standard. In order to achieve compliance with an interior noise level standard of 45 dB Ldn, residences located within 700 feet of the S.R. 99 centerline would require exterior-to-interior noise level reductions ranging from 30 dB to 35 dB. One of the following window assemblies shall be installed:

- A 30 dB exterior to interior noise level reduction may be achieved through the use of STC 35 rated window assemblies for all second floor windows with a view of SR 99.
- A 35 dB exterior to interior noise level reduction may be achieved through the use of STC 40 to 42 rated window assemblies for all second floor windows with a view of SR 99.

As an alternative to this requirement, a detailed analysis of interior noise levels can be conducted when building plans are available.

**Mitigation Measure #3.11.1e:** As an alternative to Mitigation Measure #3.11.1d, a portion of the site could limit residential uses to single-story units which receive shielding from the noise barriers. Therefore, residential uses located within 700 feet of the S.R. 99 centerline could be restricted to single story units, and residential units located beyond 700 feet from the S.R. 99 centerline could include two-story units and would not require upgraded STC rated windows.

**Mitigation Measure #3.11.1f:** During project review, the Planning Director shall make a determination as to whether or not the proposed use would likely generate noise levels that could adversely affect the adjacent residential areas. If it is determined from this review that proposed uses could generate excessive noise levels at noise-sensitive uses, the applicant shall be required to prepare an acoustical analysis to ensure that all appropriate noise control measures are incorporated into the project design so as to mitigate any noise impacts. Such noise control measures include, but are not limited to, use of noise barriers, site-redesign, silencers, partial or complete enclosures of critical equipment, etc.

**Mitigation Measure #3.11.1g:** Active recreation areas such as neighborhood parks and school playgrounds should be located as far as possible from residential property lines. Park activities should be limited to the hours of 7:00 a.m. to 10:00 p.m. Noise analyses should be conducted for public works areas which contain noise sources which may exceed the City of Turlock noise level standards.

**Mitigation Measure #3.11.1h:** Construction activities should adhere to the requirements of the City of Turlock with respect to hours of operation. In addition, all equipment shall be fitted with factory equipped mufflers, and in good working order.

**Effectiveness of Measures:** With Mitigation Measures #3.11.1a through #3.11.1h incorporated into the proposed project, exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies would be *less than significant*.

**Impact #3.11.2 - Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels.**

**Conclusion:** The primary construction activities associated with the project would occur when the infrastructure such as buildings and utilities are constructed. However, it is expected that they would occur at considerable distances from existing occupied residences and be removed from future on-site uses. Comparing Table 3.11-12 which contains the criteria for acceptable vibration levels to Table 3.11-13, which shows potential vibration impacts, it is not expected that vibration impacts would occur that would cause any structural damage. The potential impact is *less than significant*.

**Mitigation Measures:** No mitigation is required.

**Impact #3.11.3 - A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.**

**Impact #3.11.4 - A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.**

**Conclusion:** Noise levels from future commercial land uses generally range between 45 dB to 65 dB at a distance of 50 feet. However, numerous noise control strategies can be utilized to mitigate noise levels to less than significant levels. Mitigation Measures #3.11.1a through #3.11.1h would reduce impacts to *less than significant*. Noise levels associated with public land uses such as playgrounds at a distance of 50 feet, generally range from 55 to 60 dB Leq, with maximum noise levels ranging from 70 to 75 dB. This is within the City of Turlock's General Plan's thresholds for exterior noise levels as shown in Table 3.11-5. Impact from public land uses would be less than significant. Construction noise would be temporary and have to comply with the City of Turlock's General Plan and Municipal Code for construction activity hours. However equipment could produce excessive levels of noise. The potential impact of temporary and period construction noise is *less than significant* with incorporation of Mitigation Measures #3.11.1a through #3.11.1h.

**Mitigation Measures:** No further mitigation is required.

**Effectiveness of Measure:** The potential impact is *less than significant*

**Impact #3.11.5 - For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.**

**Impact #3.11.6 - For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.**

**Conclusion:** The assessment of noise impacts associated with the Turlock Airpark operations on the project site are based upon noise measurement data and operational information discussed earlier in this report. Based upon the noise measurement data and the operational information, no

portion of the project site will be exposed to aircraft noise levels in excess of 60 dB Ldn. Therefore, the project will result in ***no noise impacts*** associated with the Turlock Airpark.

**Mitigation Measures:** No mitigation measures are required.

### 3.12 Population and Housing

#### 3.12.1 INTRODUCTION

This section describes the existing population and housing and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on population and housing information provided by the California Department of Finance and the City of Turlock.

#### 3.12.2 ENVIRONMENTAL SETTING

The California Department of Finance (DOF) estimated the population of the City of Turlock to be 69,370 as of January 1, 2012. Population and housing characteristics for Turlock are summarized in Table 3.12-1.

**Table 3.12-1  
Turlock Population and Housing Characteristics (2012)**

Population	Housing Units	Average Persons per Household
69,370	24,656	2.984

Source: California Department of Finance, 2011

#### *Historic Growth*

#### POPULATION

The population of Turlock has grown significantly since 1990. The City’s population increased almost two times in the 20 years between 1990 and 2010, growing at a compound annual growth rate of 2.6 percent. The City’s historic population growth between 1990 and 2010 is summarized in Table 3.12-2.

**Table 3.12-2  
Turlock Historic Population Growth**

Year	Population	Change from Previous (Percent)
1990	42,224	-
2000	55,811	32.1
2010	71,100	27.4
Net Change	28,876	68.2
Compound Annual Growth Rate		2.6

Source: City of Turlock General Plan Draft EIR, 2012, City of Turlock Existing Conditions Report, 2008

**Projected Growth**

**POPULATION**

The Turlock General Plan estimates that the Study Area (which includes the Morgan Ranch Master Plan area) will accommodate a maximum population of approximately 126,800 people at buildout in the year 2030. This represents an average annual growth rate of 2.9 percent, which is lower than the rate of 3.9 percent experienced in the City over the last 42 years. The growth projections for Turlock for 2030 range from 104,000 total residents to 126,800 total residents (midpoint of 115,000). The General Plan accommodates the high end of the projection. The City’s decision to create a General Plan that accommodates the maximum level of projected growth was policy-based. The City has determined that it is possible that Turlock will not experience the maximum level of growth projected by the General Plan, and as a result the full extent of urban development permitted under the General Plan will not be needed. The General Plan includes master planning and phasing policies to allow for less population to be accommodated while still ensuring that new development areas are well-planned, cohesive, and compact.

**Regional Housing Needs Allocation Plan**

The Stanislaus Council of Governments (StanCOG) prepares the Regional Housing Needs Assessment (RHNA) to allocate regional housing growth among the Stanislaus County communities. The RHNA indicates that Turlock is expected to accommodate 3,461 new housing units with the California Department of Housing and Community Development (HCD) income levels between 2007 and 2014.

Table 3.12-3 summarizes the RHNA by income category. It indicates that approximately 61 percent of the housing need will be moderate to upper income households.

**Table 3.12-3  
Regional Housing Needs Allocation**

<b>Income Category</b>	<b>Dwelling Units</b>	<b>Dwelling Unit Allocation (Percent)</b>
Very Low	805	23.3
Low	562	16.2
Moderate	666	19.2
Upper/Market Rate	1,428	41.3
<b>Total</b>	<b>3,461</b>	<b>100.0</b>

City of Turlock, 2012

### 3.12.3 REGULATORY SETTING

#### *Federal*

There are no federal regulations applicable to population and housing.

#### *State*

### **CALIFORNIA HOUSING ELEMENT LAW**

State law requires each city and county to adopt a general plan for future growth. This plan must include a housing element that identifies housing needs for all economic segments and provides opportunities for housing development to meet that need. At the state level, the California Department of Housing and Community Development (HCD) estimates the relative share of California’s projected population growth that would occur in each county in the State, based on DOF population projections and historic growth trends. Where there is a regional council of governments, such as the Stanislaus Council of Governments (StanCOG), HCD provides the regional housing need to the council.

The council then assigns a share of the regional housing need to each of its cities and counties. The process of assigning shares provides cities and counties the opportunity to comment on the proposed allocations. HCD oversees the process to ensure that the council of governments distributes its share of the State’s projected housing need.

Each city and county must update its general plan housing element on a regular basis (approximately every 5 years). Among other things, the housing element must incorporate policies and identify potential sites that would accommodate a city’s share of the regional housing need. Before adopting an update to its housing element, a city or county must submit the draft to HCD for review. HCD will advise the local jurisdiction whether its housing element complies with the provisions of California Housing Element Law.

The councils of governments are required to assign regional housing shares to the cities and counties within their region on a similar 5-year schedule. At the beginning of each cycle, HCD provides population projections to the councils of governments, who then allocate shares to their cities and counties. The shares of the regional need are allocated before the end of the cycle so that the cities and counties can amend their housing elements by the deadline. For the planning period of January 2007 through June 2014, StanCOG estimates that a total of 25,602 housing units will need to be provided across all jurisdictions. The City of Turlock is responsible for identifying sites with capacity for 3,461 units, or 13.5 percent of the County total.

#### *Local*

### **STANISLAUS COUNCIL OF GOVERNMENTS**

The Stanislaus Council of Governments (StanCOG) is responsible for updating the Regional Housing Needs Allocation (RHNA) Plan. This agency reviews population projections for the County of Stanislaus as determined by the Department of Finance, and determines how to

allocate shares of housing need (e.g., number of housing units needed) among the incorporated cities and unincorporated areas throughout Stanislaus County. StanCOG uses a number of criteria to determine how to allocate the number of housing units that will be needed in the next five years to each jurisdiction. The document used to evaluate, calculate, and distribute housing needs is referred to as the Regional Housing Needs Allocation Plan (RHNA) Plan, and the allocation for each housing level category is referred to as the RHNA.

## **CITY OF TURLOCK GENERAL PLAN**

The City of Turlock General Plan includes the following relevant goals, policies, and objectives related to population and housing that are applicable to the proposed project:

### ***Housing Element***

Housing in the City of Turlock is primarily addressed through the 2007 - 2014 Housing Element, which was adopted and certified in January 2012 and is updated every five years in accordance with State law. The most applicable proposed goals, objectives, and project-related policies of the Housing Element are as follows:

#### **Goal 2** Remove Constraints to Housing Production

**Objective 2-1** Provide the citizens in the City of Turlock with reasonably priced housing opportunities within the financial capacity of all members of the community.

**Policy 2-1-1** To lower the costs associated with the development process, allow and encourage developers to file concurrent applications (i.e., rezones, tentative tract maps, conditional use permits, variance requests, etc.) if multiple approvals are required, and if consistent with applicable processing requirements.

**Policy 2-1-2** To promote affordability, provide incentives (e.g. density bonus units, fee underwriting, fee deferral, fast-tracking, etc.) to developers of residential projects who agree to provide the specified percentage of units mandated by State law at a cost affordable to Extremely Low, Very Low and/or Low income households.

**Policy 2-1-3** Encourage the development of second dwelling units to provide additional affordable housing opportunities. Ensure compliance with AB 1866, which requires local governments with second unit ordinances to ministerially consider second unit applications.

**Policy 2-1-4** Encourage housing developers to provide affordable units by allowing density bonuses in accordance with State law.

**Policy 2-1-5** Facilitate the development of high density housing

**Goal 3** Provide and maintain an adequate supply of sites for the development of new affordable housing.

**Objective 3-2** Provide opportunities for mixed use developments.

**Policy 3-2-1** Promote the development of housing that has, to the extent possible, a support structure of shopping, services, and jobs within easy access.

**Objective 3-3** Provide a sufficient amount of zoned land to accommodate development for all housing types and income levels.

**Policy 3-3-1** Ensure that an adequate amount of land zoned for residential use at appropriate densities is available for the City to reach the RHNA goals enumerated in the Quantified Objectives (see Section 4.8 of the Housing Element)

**Policy 3-3-3** Preserve and protect existing residentially zoned sites needed to accommodate residential development consistent with the City of Turlock Regional Housing Needs Assessment (RHNA).

**Policy 3-3-4** Ensure the future availability of land and minimize the cost of land acquisition and development through land banking.

**Policy 3-3-5** Ensure that new residential development is adequately provided with necessary public infrastructure.

## ***Chapter 2 - Land Use and Economic Development***

Population and housing in the project vicinity is also directly affected by policy direction in the General Plan Land Use and Economic Development Element. The most applicable proposed project related objectives and policies found in the Land Use and Economic Development Element are as follows:

**Policy 2.5-a Housing Type Diversity.** Increase the diversity in the citywide mix of housing types by encouraging development of housing at a broad range of densities and prices, including small-lot single family, townhouses, apartments, and condominiums. Aim to achieve an overall housing type mix of 60 percent traditional single family, 40 percent medium and higher density housing types.

**Policy 2.5-f Master planning required.** Require comprehensive master planning of new residential neighborhoods in expansion areas consistent with the requirements in the General Plan. Also require that 70 percent of one master plan area is completed (building permits issued) before another starts.

**Policy 2.5-g Locations for high density development.** Maintain the highest residential development intensities Downtown, along transit corridors, near transit stops, and in new neighborhood centers.

**Policy 2.11-g Maintain the jobs-workers balance.** Maintain a balance between the jobs and the number of employed residents.

**Chapter 3 – New Growth Areas and Infrastructure**

**Policy 3.1-a Proactively manage growth.** Proactively manage and plan for growth in an orderly, sequential, and contiguous fashion.

**Policy 3.1-g Master Plan areas.** Plan for growth in phases and discreet master plan areas, so that neighborhoods are fully planned and at least 70 percent of building permits issued prior to the construction of the next master plan area.

**Policy 3.1-h Provide a range of housing types.** Ensure a balance of housing types affordable to the complete range of income and age groups.

**Policy 3.2-d Minimum average densities established for master plan areas.** Each master plan, or portion of a master plan, must be built to achieve the minimum average residential density specified on the Land Use Diagram and may go up to an overall average density that is 20 percent higher. (If the developer of a master plan area wishes to build to a higher density than 20 percent above the minimum, then a General Plan amendment and an analysis of environmental impacts would be required.) The minimum density calculation does not apply to land that is to be used for public parks, schools, or other non-residential uses.

**Policy 3.2-e Mix of housing types and densities required.** Each area will have a required mix of housing types, including traditional single family, small-lot single family, townhouse, and apartment/condos. The housing mix must achieve the minimum average density specified for each master plan. Regardless of the minimum average density, every master plan must include a minimum of 15 percent multi-family units.

The project’s consistency with the General Plan goals, objectives, and policies is assessed in Chapter 3, Section 3.10 Land Use and Planning.

**3.12.4 METHODOLOGY**

Impacts on population, housing, and employment were assessed by reviewing existing and anticipated population, housing, and employment projections provided DOF and the City of Turlock General Plan. The proposed project’s impacts were evaluated by determining their consistency with these estimates and projections.

**3.12.5 IMPACT EVALUTATION CRITERIA**

According to the CEQA Guidelines, a project will normally have significant adverse impacts associated with population and housing if it would:

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

**3.12.6 IMPACT ANALYSIS**

**Impact #3.12.1 - Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).**

This impact assesses the proposed project’s potential to induce substantial population growth.

There are two types of population growth: direct and indirect. Direct population growth occurs from the development of new residential units. Indirect population growth occurs from the creation of new employment opportunities or the removal of a barrier to growth (e.g., the extension of urban infrastructure to an undeveloped area). The proposed project would construct 1,660 residential units. The proposed project would also result in the extension of public services infrastructure to an area that does not receive any service currently. In addition, project roadways may be used for future development. All of these aspects of the proposed project have the potential to cause population growth either directly or indirectly. Direct or indirect population growth is only considered substantial if it exceeds projections contained in local or regional population forecasts. In this case, the applicable planning and population forecast is growth anticipated by the City’s Housing Element and the City’s General Plan. Direct population growth and indirect population growth is discussed separately below.

**Direct Population Growth**

The proposed project would cause direct population growth by constructing 1,660 residential units. Table 3.12-4 summarizes the population growth attributable to the proposed project. As shown in the table, the proposed project is expected to increase the City’s population by 4,953 persons.

**Table 3.12-4  
Project-Related Population Growth**

<b>Dwelling Units</b>	<b>Average Household Size</b>	<b>Population Growth</b>
1,660	2,984	4,953

Source: Morgan Ranch Master Plan, 2012; California Department of Finance, 2012

Table 3.12-5 compares the proposed project’s population growth with those provided in the City’s Housing Element and the City’s General Plan. It is anticipated that that the Morgan Ranch Master Plan will be developed over an extended period (5 to 10 or more years), however, no development plans have been brought forward and there is no precise phasing plan. For purposes of estimating potential project impacts, this Draft EIR assumed that the project would be built out by 2020.

**Table 3.12-5  
Growth Projections (2010 to 2020)**

<b>Year</b>	<b>Housing Element Projections</b>	<b>General Plan Projections</b>
2010	74,237	71,100
2020	93,060	95,020
2030	115,363	126,800
Net Increase	41,126	55,700
Proposed Project Population Growth		4,953
Percent of Growth Projections	12.0	9.0

Source: City of Turlock Housing Element, 2012; City of Turlock General Plan, 2012

As shown in the table, the population growth attributable to the proposed project would represent between 9 and 12 percent of the forecasted growth between 2010 and 2030 by these two sources. Because the proposed project’s population growth figures are within the growth projections provided by these two sources, it can be concluded that the proposed project would be considered planned growth, and therefore, not “growth inducing”.

**Removal of Barrier to Growth**

The proposed project would result in the extension of urban infrastructure to an area that is currently not serviced. In particular, potable water and sewer service would be extended to the project site. However, this would not be considered removal of a barrier to growth, because the project site is within the city limits and is contemplated for urban development by both the General Plan and Zoning Ordinance. As such, the extension of this urban infrastructure is “growth accommodating” because it is intended to facilitate planned growth.

Furthermore, the City of Turlock General Plan contains several policies that dictate the phasing of development and growth within the City. Specifically, Policy 2.5-f, Policy 3.1-g, and 3.2-d, require Master Planning and also provide a phasing plan with the Morgan Ranch Master Plan Area identified as SE-1 in the General Plan to be developed first. As such, there is a high degree of certainty that the extension of potable water and sewer service to the project site would not lead to the extension of these urban services outside the incorporated area of the City.

**Conclusion:** Although the proposed project would serve population growth in the City, the increase is within the projected growth estimates and is considered “planned growth”. The proposed project site is proposed for urban uses, according to the City’s General Plan, and the proposed uses are similar to adjacent existing and planned uses. The impact would therefore be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.12.2 - Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.**

This impact assesses the proposed project’s potential impact to displace existing housing or population.

Within the Morgan Ranch Master Plan Area, there are two occupied single-family residences fronting on Golf Road and there are ten, occupied single-family residences and one occupied mobile home fronting Glenwood Avenue. Based on the average household size for Turlock, approximately 38 people would be affected.

The removal of these homes would not constitute the displacement of substantial numbers of persons. Given existing residential vacancy rates in Turlock, it would be expected that the occupants of these homes could readily find replacement housing elsewhere; therefore, no construction of new dwelling units would be necessary.

**Conclusion:** Implementation of the proposed project would not result in displacement of substantial numbers of existing housing units or people. Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

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### 3.13 Public Services and Utilities

#### 3.13.1 INTRODUCTION

This section describes the existing public services and utilities and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information provided by the Turlock Fire Department, the Turlock Police Department, the Turlock Irrigation District, and Cal Recycle. Written responses from service providers are provided in Appendix A. In addition, the potable water analysis is based on a Water Supply Assessment, which is provided in Appendix H.

#### 3.13.2 ENVIRONMENTAL SETTING

##### *Fire Protection and Emergency Services*

The Turlock Fire Department (Fire Department) provides fire protection and emergency services to the City of Turlock. The Fire Department is headquartered at 244 N. Broadway, Turlock.

#### STATIONS

The Fire Department operates four fire stations. The four fire stations, along with apparatus and staffing are summarized in Table 3.13-1.

**Table 3.13-1  
Fire Station Summary**

Station No.	Address	Distance From Project Site	Quantity	Apparatus Equipment	Staffing
1	540 E. Marshal Street	2.2 miles	1	Engine	1 Captain
			1	Truck	1 Engineer
			1	Command Vehicle	1 Firefighter 1 Battalion Chief*
2	791 S. Walnut Road	2.2 miles	1	Engine	1 Captain
			1	Truck	1 Engineer
			1	Command Vehicle	1 Firefighter 1 Battalion Chief*
3	501 E. Monte Vista Ave	4.2 miles	1	Engine	1 Captain
			1	Truck	1 Engineer
			1	Command Vehicle	1 Firefighter 1 Battalion Chief*
4	2820 N. Walnut Road	4.4 miles	1	Engine	1 Captain
			1	Truck	1 Engineer
			1	Command Vehicle	1 Firefighter 1 Battalion Chief*

\* The Fire Department is staffed by three Batalli  
Source: City of Turlock Fire Department 2011 Annual Report, 2012

## **ORGANIZATION**

In past years the Turlock Fire Department has had four divisions that identified the areas of responsibility, with a Division Chief or Manager each leading those divisions, and reporting to the Fire Chief. Through reductions the Fire Department currently has two of the divisions currently vacant. The Fire Department has gone through an Administrative Consolidation with the Police Department and is now sharing the Support Services Manager from the Police Department and an Executive Assistant to both the Fire and Police Chief. The remaining divisions include: Administration, Operations, Training, and Prevention.

### ***Administration Division***

The Administration Division is responsible for recruitments, promotions, backgrounds, evaluations, worker's compensation, grants, and critical incident stress management.

### ***Support Services Division***

The Support Services Division is new to the Fire Department and is shared between both the Police and Fire Departments. This division is has responsibility over the Department's payroll, attendance, accounts payable, travel requests, public education, special events, and budget.

### ***Operations Division***

The Operations Division is responsible for all of the emergency response and daily operations of the Department. We consider our department an "all risk" Department, ready to respond to emergency medical calls, motor vehicle accidents, rescue calls, hazardous materials calls, fire calls, and public assist type of calls. We also work with other partner city and private agencies. The Operations Division's responsibilities are personnel management, resource management, and special operations. The Operations Chief position is currently vacant and is managed by Fire Chief, Tim Lohman. With the recent promotions and shift movement, our goal is to have the Battalion Chiefs assume some of the responsibilities of the Operations Division. Battalion Chief Lunsford is working with the records management program, Battalion Chief Carlson completes the personnel scheduling and overtime bids, and Battalion Chief Becker will soon begin updating our operating guidelines.

### ***Training***

The Training Division is responsible for conducting internal training to meet mandated training subject for Emergency Management Services (EMS) and firefighter didactic and manipulative skills. The Training division is also responsible for conducting specialized training at city and non city owned property throughout the City of Turlock.

### ***Prevention***

The primary objective of the Turlock Fire Prevention Division is to improve the quality of life and reduce the risk of harm and destruction to the citizens of Turlock. The goal of the

Prevention division is to improve the lives of City residents and business owners by preventing fires within the Turlock community. To accomplish this goal, the Fire Prevention Division coordinates and performs inspections of businesses and occupancies in accordance with the California Fire Code, California Health and Safety Code, California Code of Regulations Titles 19 & 24, and our local Municipal Codes.

**STAFFING**

The Operations Division, which serves as the first responder to calls for service has the most personnel assigned to it. Personnel in the Operations Division include the following:

- 3 battalion chiefs;
- 15 captains;
- 15 engineers (currently 2 vacant positions); and
- 14 firefighters

**CALLS FOR SERVICE**

The Fire Department responded to 5,205 calls for service in 2011. Table 3.12-2 summarizes the calls for service.

**Table 3.12-2  
Fire/EMS Calls**

<b>Year</b>	<b>Service</b>	<b>Calls</b>
2011	Fire	1,614
	EMS	3,591
2010	Fire	1,568
	EMS	3,375
2009	Fire	1,636
	EMS	3,505
2008	Fire	1,567
	EMS	3,453
2007	Fire	1,570
	EMS	3,275

Source: City of Turlock Fire Department 2011 Annual Report, 2012

**RESPONSE TIMES**

Table 3.13-3 provides the Average Response Times for all districts from 2004 to 2010.

**Table 3.13-3**  
**Average Response Times – All Districts**

<b>Year</b>	<b>Time (Minutes)</b>
2011	5:05
2010	5:04
2009	4:58
2008	5:00
2007	5:00

Source: City of Turlock Fire Department 2011 Annual Report, 2012

The Fire Department has maintained an average response time standard of five minutes. The General Plan calls for the Fire Department to strive to achieve this standard for all calls within the primary service area of each fire station, 90 percent of the time.

### **PERFORMANCE**

The Insurance Services Office (ISO) Public Protection Classification Program currently rates the Fire District a 3 on a scale of 1 to 10, with 1 being the highest possible rating and 10 being the lowest. The ISO rating measures individual fire protection agencies against a Fire Suppression Rating Schedule, which includes such criteria as facilities and support for handling and dispatching fire alarms, first-alarm response and initial attack, and adequacy of local water supply for fire-suppression purposes. The ISO ratings are subsequently used to establish fire insurance premiums.

### **MUTUAL AID AGREEMENTS**

The Fire Department participates in the California Master Mutual Aid Response program and maintains mutual aid agreements with other fire departments within Stanislaus County.

#### ***Police Protection***

The Turlock Police Department (Police Department) provides police protection to 16.88 square mile area divided into five beats encompassing the City of Turlock. The Police Department is headquartered at 900 N. Palm, Turlock.

### **STAFFING**

The Turlock Police Department has 121 Police Department Employees, 81 of whom are sworn police officers.

### **ORGANIZATION**

The Police Department is divided into three divisions: Field Operations, Support Operations, and Special Operations. A summary of each division is provided below:

**Field Operations**

Aside from contact with a Police Dispatcher via telephone, Field Operations Division personnel are typically the first point of direct contact for anyone seeking police services. The Field Operations Division is one of three divisions within the Police Department. The Field Operations Division is comprised of the following units: General Patrol, Traffic Safety, and Crime Prevention including the Criminal Apprehension and Gang Enforcement Team. With three Lieutenants serving as Watch Commanders, General Patrol is the largest unit within the Police Department.

**Support Operations**

Support Operations Division is comprised of the following units; Records, 9-1-1 Communications Center, and Fiscal Management. The Support Operations Division now has oversight for both Police and Fire Departments.

**Special Operations**

The Special Operations Division is comprised of the following specialized units: General Investigations, Office of Professional Standards, Neighborhood Preservation, Property and Evidence, and Animal Services.

**CALLS FOR SERVICE**

In 2011, the Police Department had a total of 67,022 calls for service. The most common calls for service are shown in Table 3.13-4.

**Table 3.13-4  
Most Common Calls for Service**

<b>Type of Call</b>	<b>Quantity</b>
Suspicious Person	3,092
Larceny (all)	1,657
Verbal Disturbance	1,518
Noise Disturbance	1,473
Suspicious Incident	1,455
Suspicious Vehicle/Person	1,436
Disturbance	1,384
Suspicious Vehicle	1,133
Assault and Battery	1,089
911 Hang Up	847

Source: City of Turlock Police Department 2011 Annual Report, 2012

**RESPONSE TIMES**

The Police Department’s response times for the past five years are summarized in Table 3.13-5. The Police Department has a standardized Priority 1 response time of 6.5 minutes. In 2011, the Police Department responded to 619 Priority 1 calls.

**Table 3.13-5  
Police Department Average Response Times**

<b>Year</b>	<b>Priority 1</b>	<b>Priority 2</b>	<b>Priority 3</b>	<b>Number of Priority 1 Incidents</b>
2011	6:18	10:14	31:46	619
2010	6:51	10:40	33:33	594
2009	6:02	9:31	34:02	524
2008	6:24	12:20	37:46	564
2007	7:14	14:47	45:28	552

Source: City of Turlock Police Department 2011 Annual Report, 2012

**Schools**

The Morgan Ranch Master Plan area is within the boundaries of the Turlock Unified School District (TUSD). TUSD includes the following:

- 9 Elementary schools;
- 1 Middle School and 1 Junior High School;
- 2 large comprehensive High Schools; and
- 2 small alternative high schools.

TUSD reported an enrollment of 13,735 students for the 2011-2012 school year.

**Parks and Recreation**

Turlock’s park system comprises community parks, neighborhood-serving city parks, neighborhood school parks, and recreation corridors. According to the General Plan, in 2010, the City of Turlock had 164 acres of neighborhood park land and 85 acres of community park land, for a total of 249 acres. Dual use storm drainage basins that provide opportunities for recreational use made up another 90 acres of land. With a population of 71,100 in 2010, the City provided 3.5 acres of park land per 1,000 residents (does not include dual-use storm drainage basins). (Refer to Section 3.14 of this Draft EIR for additional information on Parks)

**Libraries**

Stanislaus County Library’s thirteen permanent facilities offer a combined 137,377 square feet of space for library service, an average of 0.26 square feet of space on a per capita basis. To serve the County’s projected 858,000 population in the year 2030 a total of 342,500 to 386,500 square feet of library facility space will be needed. This is the equivalent of 0.4 to 0.45 square feet of space per capita. This amount of space assumes that the County Library organization continues in its present configuration and the projected population is achieved. The amount of building space suggested is well within the range of current library industry best planning practice, focusing on multi-outlet systems that serve large geographical areas.

The Turlock Library has provided service at its current location at 550 North Minaret Avenue since its opening in 1943. The library comprises 10,000 square feet, which translates to 0.14

square feet per person, short of both the current system-wide ratio and the Library’s planning standard.

**Potable Water**

The City of Turlock Municipal Services Department distributes potable water within the city limits. The description of potable water supply infrastructure and sources is derived from the Water Supply Assessment prepared for the project and provided in Appendix H. Below are summaries of the relevant findings.

Current and projected water supplies are summarized above in Table 3.13-6. To meet the future water demands, the cities of Turlock, Modesto, and Ceres have been evaluating a Regional Surface Water Supply Project (RSWSP) that will produce potable water from the Tuolumne River. The RSWSP has formally created a Joint Powers Authority (JPA), the Stanislaus Regional Water Authority (SRWA). The SRWA will pursue funding for various phases of the project. Extensive planning work has been performed for the RSWSP, but some additional work is still needed to update some aspects of the environmental review of the RSWSP. By being a member of the JPASRWA, Turlock continues to be committed to the project. The SRWA is negotiating an agreement with TID for the provision of raw water for the project. The RSWSP would initially provide the City with up to 16,800 acre-feet per year (15 mgd) of potable water, but could ultimately provide up to 22,400 acre-feet per year (20 mgd). The RSWSP facilities would include a surface water treatment plant and water transmission mains. The total cost of the RSWSP is estimated to be in the range of \$145-154 million. The City’s share of this cost is estimated to be about \$81-86 million. The City would also have to construct a water storage reservoir (an enclosed water tank), a booster pump station and water transmission mains within the City at a cost of about \$20 15 million. This potential surface water supply would provide over half of the City’s future water needs.

**Table 3.13-6  
City of Turlock Water Supplies – Current and Projected**

Water Supply Sources	2010	2015	2020	2025	2030	2035 (Optional)
Water Purchased From:						
Wholesaler supplied volume (yes/no)						
Wholesaler: Turlock Irrigation District	0	0	5,475	5,475	5,475	5,475
Supplier-produced groundwater	7,094	8,784	4,066	5,320	6,652	8,246
Supplier-produced surface water	0	0	0	0	0	0
Transfers In	0	0	0	0	0	0
Exchanges In	0	0	0	0	0	0
Recycled Water	368	400	400	400	400	400
<b>Total</b>	<b>7,462</b>	<b>9,184</b>	<b>9,941</b>	<b>11,195</b>	<b>12,527</b>	<b>14,121</b>

Notes: Units: million gallons per year; The Turlock Irrigation District will provide surface water to the Cities of Ceres, Hughson, Modesto, and Turlock through the Turlock Regional Surface Water Supply Project.

Source: City of Turlock, 2010 Urban Water Management Plan, 2011

Table 3.13-7 shows a breakdown of projected water use by type of land use. Single-family homes are the largest consumers, accounting for 58 percent of total water usage in 2010. The industrial sector was the next largest consumer at 15.3 percent. Multi-family usage accounted for 9.6 percent of total water consumption in 2010.

**Table 3.13-7  
Current and Projected Water Demand by Land Use Type (MGD)**

Water Use Sector	2010	2015	2020	2025	2030	2035 (Optional)
Single-Family Residential	4,115.9	5,097	5,536	6,263	7,036	7,961
Multi-Family Residential	686.5	850	923	1,045	1,174	1,328
Commercial	585.2	725	787	890	1,000	1,132
Industrial	1,091.9	1,352	1,469	1,662	1,867	2,112
Institutional/Governmental)	41.8	52	56	64	71	81
Landscape (includes municipal)	572.6	709	770	871	979	1,107
Agriculture	0.0	0.0	0	0	0	0
Other	0.0	0.0	0	0	0	0
<b>Total</b>	<b>7,093.9</b>	<b>8,784</b>	<b>9,541</b>	<b>10,795</b>	<b>12,127</b>	<b>13,721</b>

Units: million gallons per year

Source: City of Turlock, 2010 Urban Water Management Plan, 2011

The City expects to be able to meet water demand through groundwater extraction through 2020 by adding wells to extract the available water and infrastructure to deliver the water to the new facilities as the demand increases with buildout of the General Plan. In 2020, the City is planning to supplement its groundwater supply with a surface water supply from the RSWSP. Table 3.13-8 shows the City’s historic groundwater volume pumped. Table 3.13-9 shows the City’s projections for groundwater volume pumped.

**Table 3.13-8  
Groundwater – Volume Pumped**

Basin Name	2006	2007	2008	2009	2010
Turlock Subbasin	8,254	8,359	8,128	7,726	7,094
Total Groundwater Pumped	8,254	8,359	8,128	7,726	7,094
Groundwater as a percent of total water supply	100	100	100	100	100

Units: million gallons per year

Source: City of Turlock, 2010 Urban Water Management Plan, 2011

**Table 3.13-9  
Groundwater – Volume Projected to be Pumped**

Basin Name	2015	2020	2025	2030	2035 (Optional)
Turlock Subbasin	8,784	4,066	5,320	6,652	8,246
Total Groundwater Pumped	8,784	4,066	5,320	6,652	8,246
Total Water Supplied	9,184	9,941	11,195	12,527	14,121
Groundwater as a percent of total water supply	95.64	40.90	47.52	53.10	58.40

Units: million gallons per year

Note: Considerable reduction in groundwater demand beginning in 2020 is due to significant projected increase in surface and recycled water use in accordance with the City's 2010 Urban Water Management Plan  
Source: City of Turlock, 2010 Urban Water Management Plan, 2011

### ***Dry Year Supply Analysis***

Water Code section 10631(c) requires a description of the reliability of the water supply and the vulnerability of the water supply to seasonal or climatic shortage, to the extent practicable, as well as data for 1) an average water year, 2) a single dry water year, and 3) multiple dry water years. Water Code section 10632(b) requires an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

### **SUPPLY CONTEXT**

Currently, the City of Turlock's entire water supply is drawn from the portion of the Turlock Groundwater Subbasin beneath its city limits. In addition to Turlock, eight other cities, four irrigation districts, and rural residences pumped an average of 541,000 acre-feet of water during the 1997 to 2006 time period. Turlock's share of that total, based on its current pumping rate of 21,771 acre-feet is approximately four percent.

The Turlock Groundwater Basin is managed jointly by these irrigation districts and cities as a conjunctive system in which use of surface and groundwater supplies are coordinated to optimize resource use and minimize adverse effects of using a single source. During normal and wet years, the groundwater basin is recharged with run-off from precipitation, run-off from irrigation of crops using surface water, and groundwater recharge programs that apply surface water to percolation areas. In dryer years and during periods of drought, farmers rely more on groundwater pumping to make up for cutbacks in surface water supplies.

### **DRY-YEAR CONDITIONS**

During drought years, water use patterns will typically change. Outdoor water use will typically increase as irrigation is used as a replacement for decreased rainfall. To determine the impact of drought years on the City's annual demands, the City's historical per capita water usage was evaluated.

The normal year water demands through 2030 are estimated based on the historical daily use criteria and populations projections for the Turlock General Plan Update. The actual demand projections for 2015, 2020, 2025, and 2030 are included in Table 3.13-10. The projected normal water year demands are provided in Table 3.13-10 in acre-feet per year, not MG.

**Table 3.13-10  
Supply and Demand Comparison – Normal Year (acre-feet/year)**

	2015	2020	2025	2030	2035 (Optional)
Groundwater Supply	26,959	12,479	16,328	20,416	25,308
Surface Water Supply	0	16,803	16,803	16,803	16,803
Recycled Water Supply	1,228	1,228	1,228	1,228	1,228
Supply Totals	28,187	30,510	34,359	38,447	43,339
Demand Totals	28,187	30,510	34,359	38,447	43,339
Difference	0	0	0	0	0

Units are in acre-feet per year  
Source: City of Turlock, 2010 Urban Water Management Plan, 2011

Table 3.13-11 shows water supply and demands during a single dry year over the planning period. The single dry year was based on 1991 water supply and demand conditions. As documented by DWR, 1991 was the fifth year of five-year drought.

**Table 3.13-11  
Supply and Demand – Single Dry Year**

	2015	2020	2025	2030	2035 (Optional)
Groundwater Supply	26,959	12,479	16,328	20,416	25,308
Surface Water Supply	0	16,803	16,803	16,803	16,803
Recycled Water Supply	1,228	1,228	1,228	1,228	1,228
Supply Totals	28,187	30,510	34,359	38,447	43,339
Demand Totals	28,187	30,510	34,359	38,447	43,339
Difference	0	0	0	0	0

Units are in acre-feet per year  
Source: City of Turlock, 2010 Urban Water Management Plan, 2011

Table 3.13-12 shows water supply and demands during multiple dry year events over the planning period. The City assumes, conservatively, that surface water supplies from the TID will be reduced by 25 percent during the second and third dry years. To offset reduced surface water supplies and to meet water demands during this period, the City will increase groundwater production. It is anticipated that groundwater levels will increase significantly in the years 2020 through 2035 as surface water is added to the City’s water supply portfolio and groundwater pumping is reduced. Using its water supplies conjunctively, this “banked” groundwater could be used to offset the reduction in surface water supply.

Rather than addressing a theoretical shortage, the City will respond to any problem of dropping water levels in the wells by lowering the elevation of pumps within their well casings to maintain current pumping rates. If there are multiple well failures for any reason, the Emergency Water Shortage Plan will take effect with mandatory restrictions until full water supplies can be restored.

**Table 3.13-12  
Supply and Demand Comparison – Multiple Dry Year Events**

		2015	2020	2025	2030	2035 (Optional)
Multiple Dry Year First Year Supply	Groundwater Supply	26,959	12,479	16,328	20,416	25,308
	Surface Water Supply	0	16,803	16,803	16,803	16,803
	Recycled Water Supply	1,228	1,228	1,228	1,228	1,228
	Supply Totals	28,187	30,510	34,359	38,447	43,339
	Demand Totals	28,187	30,510	34,359	38,447	43,339
	Difference	0	0	0	0	0
Multiple Dry Year Second Year Supply (assumes 25 percent reduction in surface water supply)	Groundwater Supply	26,959	16,680	20,528	24,616	29,509
	Surface Water Supply	0	12,602	12,602	12,602	12,602
	Recycled Water Supply	1,228	1,228	1,228	1,228	1,228
	Supply Totals	28,187	30,510	34,359	38,447	43,339
	Demand Totals	28,187	30,510	34,359	38,447	43,339
	Difference	0	0	0	0	0
Multiple Dry Year Third Year Supply (assumes 25 percent reduction in surface water supply)	Groundwater Supply	26,959	16,680	20,528	24,616	29,509
	Surface Water Supply	0	12,602	12,602	12,602	12,602
	Recycled Water Supply	1,228	1,228	1,228	1,228	1,228
	Supply Totals	28,187	30,510	34,359	38,447	43,339
	Demand Totals	28,187	30,510	34,359	38,447	43,339
	Difference	0	0	0	0	0

Units are in acre-feet per year

Source: City of Turlock, 2010 Urban Water Management Plan, 2011

### WATER SHORTAGE CONTINGENCY PLANNING

The UWMPA requires that the UWMP include an urban water shortage contingency analysis that addresses a catastrophic interruption of water supplies. The City has a Water System Emergency Response Plan, which prepares for an interruption in the drinking water supply and potential consequences to water system integrity and public health. This plan was prepared in June 2004 and updated in January 2008. Further, Turlock Municipal Code (Section 6-7-401) contains an “Emergency Water Shortage Plan” which is implemented in response to water shortages, including those precipitated by a catastrophic interruption.

The City’s use of groundwater as its primary water source creates redundancy to limit dependence of a geographic area on a single water supply source (i.e., areas are served by multiple groundwater wells). The City maintains redundant power supplies at a number of its

well sites through the use of emergency power generators. Emergency actions are implemented by the Municipal Services Department.

In 1991, the City adopted a “Water Conservation and Education Ordinance” that included a program of mandatory prohibitions related to water conservation. The City adopted this ordinance in response to the water shortage emergency associated with the drought of 1987 through 1991. This ordinance constitutes the City’s water shortage contingency plan. Recognizing that water is a diminishing resource, the City has elected to remain in State 1 “Mandatory Compliance” since the ordinance was first adopted. There are several prohibitions that go into effect during water shortages. As any water shortage becomes more severe, the penalties and prohibitions increase.

### ***Wastewater***

The Turlock Regional Water Quality Control Facility (TRWQCF) provides tertiary treatment of wastewater from the City of Turlock, Ceres and the community service districts of Keyes and Denair. Effluent from the facility discharges to the Turlock Irrigation District (TID) Lateral No. 5 Drain (also known as the Harding Drain). The Harding Drain is an open, multipurpose drain that intercepts and conveys irrigation return flows as well as storm drain runoff and the TRWQCF’s effluent. The Harding Drain discharges to the San Joaquin River. The San Joaquin River is designated an impaired water body under the authority of the Clean Water Act, Section 303(d). When a water body is listed as an impaired water body, the regulations require that no additional pollutants be discharged to the water body. Dilution credits will no longer be allowed for the effluent discharge from the TRWQCF, as the RWQCB determined that the TID Lateral No. 5 Drain was a tributary to the San Joaquin River. The regional Basin Plan requires that tributaries receive the same level of protection as the major water bodies. The discharge requirements include tertiary treatment (coagulation/flocculation and filtration), lower levels of biochemical oxygen demand (BOD), total suspended solids (TSS), ammonia, and more efficient disinfection.

The City of Turlock Water Quality Control Facility Treatment Facilities Improvement Capacity Assessment identified the current capacity of the TRWQCF to be about 14 million gallons per day (mgd) on an annual average flow basis. The flow in 2008, 2009, and 2010 were 13.7 mgd, 12.6 mgd, and 11.6 mgd, respectively. These flows include the flow from Denair and Keyes. Additionally, the TRWQCF also receives 1 mgd of primary treated wastewater from Ceres. The current flows are slightly below the existing capacity of the TRWQCF, and capacity expansions will be needed to serve the future growth of the City (both infill and for the General Plan Master Planning Areas). The flow from just Turlock for 2009 was 11.9 mgd. The total flow to the TRWQCF in 2030 is estimated to be about 23.8 mgd and 26.6 mgd at full buildout of the General Plan. These estimated future flows include the buildout flow from Denair and Keyes and 2 mgd of primary treated wastewater from Ceres. The Capacity Assessment also estimated the 2030 buildout flow to be 23.0 mgd (including the flows from Denair, Keyes, and 2 mgd of primary treated wastewater from Ceres). The Capacity Assessment also identified improvements that would be needed at the TRWQCF to achieve an annual average flow capacity of 20 mgd. This capacity expansion also allows the TRWQCF to treat 2 mgd of primary treated wastewater from Ceres for a total capacity of 22 mgd. The plant site includes about 140 acres, but the

current and planned treatment facilities only occupy about 60 acres of the site. Consequently, even after all the required facilities have been built to provide a capacity of 22 mgd, there will still be about 80 acres at the plant site that could be used to further expand the plant capacity to over 26.6 mgd.

#### **Storm Drainage**

The City currently protects surface water quality by requiring the implementation of Best Management Practices (BMPs) during the construction of new development projects and requires projects to comply with post-construction BMPs, as identified in the City's National Pollutant Discharge Elimination System (NPDES) Phase 2 Storm Water Management Plan. Surface water quality is also protected by complying with the current State of California Construction General Permit Order 2009-0009-DWQ.

The City's existing storm water system includes about 130 miles of storm drain collection/conveyance piping, with sizes ranging from 6 to 60-inches in diameter; 49 pump stations, several detention basins, and use of the TID open channels. Currently, most of Turlock's stormwater drains to detention basins located throughout the City. Because groundwater levels are close to the ground surface, these basins are relatively shallow and it is necessary to pump runoff into many of the basins during storm events. After the storm passes, runoff is drained or pumped back into the trunk storm drain system and flows to the southwest corner of the City to a large stormwater basin near the TRWQCF, where it is either pumped into TID Lateral 4 or the Harding Drain. To avoid overloading the trunk storm drains, it is necessary to drain several of the detention basins in the north part of town sequentially, starting with the more downstream basins and progressing to the more upstream basins. The City has determined that this approach of using detention basins with sequential draining of the basins can continue to be used to provide stormwater storage and disposal as the City grows to buildout of the 2030 General Plan.

#### **Solid Waste**

The City of Turlock contracts with a franchise hauler to collect garbage and recyclables at curbside. Garbage is taken to the transfer station on Walnut Road, and from there hauled to the Fink Road landfill near Crows Landing, or to the Stanislaus Resource Recovery Facility (SRRF), a waste-to-energy facility, adjacent to the landfill. The waste-to-energy facility reduces the volume of waste going into the landfill by about 90 percent. According to the Solid Waste Management Division of the Stanislaus County Department of Environmental Resources, the Fink Road landfill—the only one operating in Stanislaus County—had capacity until 2017 for garbage (Class III waste) and 2023 for the waste-to-energy ash (Class II waste) as originally designed, with a total landfill capacity is 6.8 million tons. However, based on lower disposal rates, the County recently revised its projections for the life of the landfill to 2029 for Class III waste and 2043 for Class II. In addition, the County has initiated plans for an expansion and reconfiguration of the existing facility to extend its useful life by another 10 to 15 years beyond the revised projections. The expansion project would be complete prior to the scheduled original closure date of the landfill. In accordance with Public Resources Code Section 41000 et seq., a goal of 50 percent waste stream diversion through reduction and recycling has been established.

In May 1992, the City's franchise waste hauler implemented a dramatic new program to reduce Turlock's waste stream. Instead of voluntary separation by the resident, the program provides three separate bins to each home throughout the City. The largest of these is a 90-gallon container reserved exclusively for compostable green waste. Next is a 65-gallon container for all recyclable materials, which are separated by the refuse company after pick-up. Finally, each household is limited to one 32-gallon container for non-recyclable household wastes.

## **LANDFILLS**

### ***Waste Diversion Targets***

Public Resources Code Sections 41000 and 41300 et seq. require each city and county in the State to prepare a Source Reduction and Recycling Element (SRRE) to meet waste diversion reduction goals of 25 percent by 1995 and 50 percent by 2000. Turlock's SRRE was adopted by the City Council in 1994. The SRRE was later reviewed and approved by the California Integrated Waste Management Board (CIWMB) in 1995. The SRRE included source reduction, including recycling and composting activities for solid waste generated within the City. The study also detailed means of reducing commercial and industrial sources of solid waste. Funding and public information components were also included.

Waste diversion in Turlock has been steadily improving. The amount of waste diverted in the City of Turlock was 40 percent in 1997 and 47 percent in 2000. In 2001, the Regional Solid Waste Planning Agency (RSWPA) was formed including Stanislaus County and the eight cities within the county. According to CalRecycle, the RSWPA's current per capita target is 6.3 pounds per person per day and employment target is 21.2 pounds per employee per day. In 2010, the RSWPA achieved 3.9 pounds per person per day and 16.0 pounds per employee per day.

### ***Energy***

The Turlock Irrigation District (TID) provides electricity to the City of Turlock. Pacific Gas & Electric (PG&E) provide natural gas service to the City of Turlock. Below is a discussion of each energy source.

## **ELECTRICITY**

Turlock receives its electricity supply from the Turlock Irrigation District (TID). Established in 1887 as the state's first publicly-owned irrigation district, TID supplies water to farmers and retail power to homes, businesses, and farms in Turlock and the surrounding area. TID was able to offer hydroelectric power beginning in 1923 with the construction of the Don Pedro dam. Approximately 40 percent of TID's electricity is generated at the Don Pedro Dam and Powerhouse. To supplement power generated at Don Pedro, TID built numerous small hydroelectric plants on its canals, which use the gravity-fed system to generate power during periods of peak demand.

Natural gas power plants represent approximately 19 percent of TID’s power generation capacity. TID operates three such plants: the Walnut Energy Center, the Walnut Power Plant, and the Almond Power Plant. TID also purchases power from numerous sources in northern California and the Pacific Northwest.

TID’s electricity supply is split between power that the District generates and that which is purchased from other suppliers. TID generates just over half of its own supply and purchases the remainder. TID estimates that current electricity sources are not adequate to maintain a sufficient level of service over the next 20 years. However, TID is in the process of adding additional resources as part of its normal planning process and expects to be capable of maintaining sufficient service in future years.

### ***Renewables***

Currently, 6.5 percent of TID’s electricity supply comes from renewable energy sources. Seventy percent of their renewable power supply is generated from geothermal energy, and TID also owns some solar, wind, and fuel cell facilities in the Napa area. TID is also investing in a large wind power site in the Columbia River Gorge, which will allow them to meet their state renewable requirement through 2025. Current state requirements are for power suppliers to deliver at least 20 percent renewable energy by 2017 and 33 percent by 2020. TID’s goal is to increase their renewable percentage by one to two percent per year in order to meet the requirement. TID is also currently working with the City of Turlock to develop a fuel cell plant in conjunction with the City’s new wastewater treatment facility, which would utilize the facility’s methane output to create energy.

## **NATURAL GAS**

PG&E provides natural gas to all or part of 39 counties in California, including the project site, comprising most of the northern and central portions of the State. PG&E obtains more than 70 percent of its natural gas supplies from western Canada and the balance from U.S. sources. PG&E operates approximately 48,000 miles of transmission and distribution pipelines.

### **3.13.3 REGULATORY SETTING**

#### ***Federal***

#### **UNIFORM FIRE CODE**

The National Fire Protection Association publishes the Uniform Fire Code with provides standards for fire protection. The nationally recognized standards require that fire departments “have the capability to deploy an initial full alarm assignment within eight (8) minute response time to 90 percent of the incidents.” (NFPA 1710)

## **CLEAN WATER ACT**

The Clean Water Act is the principal federal law that addresses water quality. The primary objectives include the regulation of pollutant discharges to surface water, financial assistance for public wastewater treatment systems, technology development, and non-point source pollution prevention programs. The Clean Water Act also requires that states adopt water quality standards to protect public health and welfare and enhance the quality of water.

## **SAFE DRINKING WATER ACT**

The Safe Drinking Water Act (SDWA), administered by the U.S. EPA in coordination with the states, is the main federal law that ensures the quality of drinking water. Under the SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The Department of Public Health administers the regulations contained in the Act in the State of California.

## **RESOURCE CONSERVATION AND RECOVERY ACT (AMENDED 1986)**

The Resource Conservation and Recovery Act is a federal act regulating the potential health and environmental problems associated with solid waste hazards and non-hazardous wastes. Specific regulations addressing solid waste issues are contained in Title 40, Code of Federal Regulations.

### **State**

## **CALIFORNIA BUILDING STANDARDS CODE**

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes;
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions; and
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

The California Fire Code is a component of the California Building Standards Code and contains fire safety-related building standards.

## **CALIFORNIA GREEN BUILDING STANDARDS CODE**

The California Green Building Standard Code was adopted January 12, 2009. The purpose of this code is to improve public health, safety, and general welfare by enhancing the design and

construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories:

- Planning and design;
- Energy efficiency;
- Water efficiency and conservation;
- Material conservation and resource efficiency; and
- Environmental air quality.

The Code addresses exterior envelope, water efficiency, and material conservation components. The aim is to reduce energy usage in non-residential buildings by 20 percent by 2015 and help meet reductions contemplated in AB 32.

#### **TITLE 24, CALIFORNIA’S ENERGY EFFICIENCY STANDARDS FOR RESIDENTIAL AND NONRESIDENTIAL BUILDINGS**

Title 24, Part 6, of the California Code of Regulations establishes California’s Energy Efficiency Standards for Residential and Nonresidential Buildings. The standards were updated in 2005 and recently amended in 2008. The 2008 standards set a goal of reducing growth in electricity use by 561.2 gigawatt-hours per year (GWh/y) and growth in natural gas use by 19 million therms per year (therms/y).

#### **CALIFORNIA URBAN WATER MANAGEMENT PLANNING ACT**

The Urban Water Management Planning Act (California Water Code Sections 10610–10656) requires that all urban water suppliers with at least 3,000 customers prepare urban water management plans and update them every 5 years. The act requires that urban water management plans include a description of water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions. Specifically, urban water management plans must:

- Provide current and projected population, climate, and other demographic factors affecting the supplier’s water management planning;
- Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier;
- Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage;
- Describe plans to supplement or replace that source with alternative sources or water demand management measures;
- Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis (associated with systems that use surface water);
- Quantify past and current water use;

- Provide a description of the supplier’s water demand management measures, including schedule of implementation, program to measure effectiveness of measures, and anticipated water demand reductions associated with the measures;
- Assess the water supply reliability.

Pursuant to the Urban Water Management Planning Act, the City of Turlock prepared and maintains an Urban Water Management Plan. The most recent Urban Water Management Plan was adopted in 2011.

### **MODEL WATER EFFICIENT LANDSCAPE ORDINANCE**

The Model Water Efficient Landscape Ordinance was adopted by the Office of Administrative Law in September 2009 and requires local agencies to implement water efficiency measures as part of its review of landscaping plans. All local agencies must adopt a water efficient landscape ordinance by January 1, 2010. The local agencies may adopt the state Model Ordinance, or craft an ordinance to fit local conditions. In addition, several local agencies may collaborate and craft a region-wide ordinance. In any case, the adopted ordinance must be as effective as the Model Ordinance in regard to water conservation.

### **CALIFORNIA WATER CODE**

California Water Code (Porter-Cologne Act) establishes a program to protect water quality and beneficial uses of state water resources and addresses groundwater and surface water. The State Water Resources Control Board and the Regional Water Quality Control Boards (RWQCBs) are the principal state agencies responsible for control of water quality.

### **CALIFORNIA DEPARTMENT OF PUBLIC HEALTH**

A major component of the State Department of Public Health, Division of Drinking Water and Environmental Management, is the Drinking Water Program which regulates public water systems. Regulatory responsibilities include the enforcement of the federal and state Safe Drinking Water Acts, the regulatory oversight of public water systems, issuance of water treatment permits, and certification of drinking water treatment and distribution operators. State regulations for potable water are contained primarily within Titles 22 and 17, Chapter 5 of the California Code of Regulations.

The regulations governing recycled water are found in a combination of sources including the Health and Safety Code, Water Code, and Titles 22 and 17 of the California Code of Regulations. Issues related to treatment and distribution of recycled water are generally under the influence of the RWQCB, while issues related to use and quality of recycled water are the responsibility of the California Department of Public Health.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT, SB 610, AND SB 221**

Section 15083.5 of the CEQA Guidelines requires the City to request certain information from the public water supply system(s) serving the planning area. This requested information includes: an indication of whether the projected water demand associated with the General Plan was included in its last urban water management plan; and, an assessment for any major development projects “whether its total projected water supplies available during normal, single-dry, and multiple-dry water years as included in the 20-year projection contained in its urban water management plan will meet the projected water demand associated with the proposed project, in addition to the system’s existing and planned future uses.”

Senate Bill 610 became effective January 1, 2002, and requires cities in connection with CEQA review to consider water supply assessments to determine whether projected water supplies can meet the project’s anticipated water demand. SB 610 also requires additional factors to be considered in the preparation of urban water management plans and water supply assessments.

SB 610 and CEQA Guidelines Section 15083.5 identifies major development projects generally as a residential development of more than 500 dwelling units; a commercial or industrial business employing more than 1,000 persons; or any other project that would have a water demand at least equal to a 500 dwelling unit project. SB 221 contains similar provisions as SB 610 but is intended for use with large residential subdivisions and a water supply assessment is usually required at the time of tentative tract map approval.

## **CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT**

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed Assembly Bill 939, the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. The legislation requires each local jurisdiction in the State to set diversion requirements of 25 percent in 1995 and 50 percent in 2000; establishes a comprehensive statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities; and authorizes local jurisdictions to impose fees based on the types or amounts of solid waste generated. In 2007, Senate Bill (SB) 1016, (Wiggins, Chapter 343, Statutes of 2008) introduced a new per capita disposal and goal measurement system which moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a per capita disposal rate factor. As such, the new disposal-based indicator (pounds per person per year) uses only two factors: a jurisdiction’s population (or in some cases employment) and its disposal as reported by disposal facilities. The City of Turlock’s disposal rate goal is 6.3 pounds per person per day and employment target is 21.2 pounds per employee per day.

## **CALIFORNIA PUBLIC UTILITIES COMMISSION**

The California Public Utilities Commission (CPUC) regulates privately owned telecommunication, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. It is the responsibility of the CPUC to (1) assure California utility customers safe, reliable utility service at reasonable rates; (2) protect utility customers from fraud; and (3)

promote a healthy California economy. The Public Utilities Code, adopted by the legislature, defines the jurisdiction of the CPUC.

### **AB 2926 SCHOOL IMPACT FEES**

As of January 1987, State law allows school districts to levy three different levels of development fees directly on new residential, commercial, and industrial development (Government Code Section 65995). Level-one fees cannot exceed \$2.97 per square foot of residential construction and \$0.47 per square foot of commercial/industrial construction for K-12 facilities. Districts set their own fees within this limit based on a nexus study establishing their funding requirements. Since Proposition 1A was passed by the voters and SB 50 was passed by the State Legislature in 1996, school fees generated by new development are deemed legally sufficient mitigation of any impacts based on generation of students on school facilities.

### **SB 50**

The Leroy F. Greene School Facilities Act of 1998 (SB 50) and the bond procedures under Proposition 1A of 1998 regulate school facilities financing and mitigation of land use approvals by setting fee caps, removing entitlement application denial authority from lead agencies, and setting the CEQA standard for full and complete mitigation for school facilities. Prior to enactment of the legislation, a city or county had the authority to deny or require full mitigation for projects that required an amendment to a General Plan and/or a zone change. State law now prohibits a local agency from either denying approval of a land use project because of inadequate school facilities, or imposing school impact mitigation measures other than the designated fees provided for in the Government Code. Effective subsequent to 2006, if a statewide bond measure fails, SB 50 would again permit a city or county to deny or refuse to approve a development project that requires a legislative act on the basis of the inadequacy of school facilities. However, the city or county will not be able to require a higher fee than provided for in the original legislation.

### **QUIMBY ACT**

Passed in 1975, the Quimby Act (California Government Code Section 66477) authorizes local agencies to establish an ordinance requiring new development to pay an in-lieu fee or dedicate land for park and recreation facilities to serve the subdivision. The required dedication and/or fee is based on the residential density, park land cost and other factors. Public land dedicated and/or fees collected pursuant to the Quimby Act may only be used for the purpose of developing new or rehabilitating existing park or recreational facilities. The dedication and/or fee allowed under State law is equivalent to providing three (3) to five (5) acres maximum of park land per one thousand (1,000) persons.

**Local**

**CITY OF TURLOCK URBAN WATER MANAGEMENT PLAN, 2010**

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610 - 10656). The Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act describes the contents of the Urban Water Management Plans as well as how urban water suppliers should adopt and implement the plans.

The City of Turlock prepared the most recent update of its Urban Water Management Plan during 2011. The updated plan was adopted by the City Council in July 2011 and was submitted to the California Department of Water Resources.

The City is evaluating wellhead treatment at two wells for the treatment of arsenic at an initial cost of \$1 million per well – this would allow the two wells to be taken off stand-by mode and returned to full operation. According to the City’s Water Master Plan, additional wells and reservoirs are necessary in the future, but no new wells or additional facilities are being actively planned at this time.

In 2006, the Turlock Regional Water Quality Control Facility (RWQCF) was upgraded to tertiary treatment, producing recycled water for beneficial reuse as the recycled water from the RWQCF complies with Title 22 standards. Currently, two million gallon per day (MGD) of recycled water is supplied to the TID for cooling purposes at the Walnut Energy Center. Approximately 20 million gallons of recycled water per year is used for irrigation purposes at Pedretti Baseball Park. The City does use a number of non-potable wells for irrigation purposes only in a number of City parks, sports facilities and other landscaped areas. In 2010, 188.3 million gallons of non-potable water were used to irrigate public green spaces.

**CITY OF TURLOCK WATER MASTER PLAN UPDATE, MAY 2009**

The Municipal Services Department uses the Master Plan as the basis for projecting water demand and needed infrastructure capacity improvements. The document also includes an evaluation of water supply and demand through 2020 and identifies infrastructure necessary within the City to integrate the RSWSP into the City’s existing water system.

**CITY OF TURLOCK SEWER SYSTEM MANAGEMENT PLAN, 2007**

The Sewer System Management Plan describes the activities that the City performs to effectively manage its sanitary sewer system. It assigns specific responsibilities for management and operation of the system to City staff and identifies a time schedule for complying with the current and future regulatory requirements for owners of sanitary sewer systems.

**CITY OF TURLOCK WATER QUALITY CONTROL FACILITY, TREATMENT FACILITIES IMPROVEMENT, TURLOCK CAPACITY ASSESSMENT, FINAL REPORT, MARCH 2007**

This document evaluates the existing capacity of the TRWQCF, summarizes existing flow to the facility, projects future flows to the facility through the year 2030, and identifies the facility improvements required to treat the future flows.

**CITY OF TURLOCK GENERAL PLAN**

The City of Turlock General Plan establishes the following applicable policies related to public services and utilities that relevant to the project:

***Chapter 3 – New Growth Areas and Infrastructure***

**Policy 3.1-a Proactively manage growth.** Proactively manage and plan for growth in an orderly, sequential, and contiguous fashion

**Policy 3.1-b Minimize negative effects through use of fiscal and infrastructure tools.** Plan and implement growth so as to minimize negative effects on existing homes and businesses within and outside the City. This shall include working with the County to establish fiscal and infrastructure tools to ensure that improvements to County roads and other infrastructure are being made as new development proceeds

**Policy 3.1-c Promote good design in new growth areas.** Design new growth and development so that it is compact; preserves natural, environmental, and economic resources; and provides the efficient and timely delivery of infrastructure, public facilities, and services to new residents and businesses.

**Policy 3.1-f Provide adequate public services.** Ensure the adequacy and quality of public services and facilities for all residents.

**Policy 3.1-g Parks and trails provided in new neighborhoods.** The master plan areas will include park sites, a pedestrian/bicycle network of trails, and a multi-use agricultural buffer along the edge (serving park, stormwater detention, trail, and buffer purposes). When a school is present, a neighborhood park shall be located adjacent to it whenever feasible. The minimum amount of gross land area in a master plan devoted to parks and public facilities shall be 10 percent, and should generally be higher.

**Policy 3.2-h Schools in new neighborhoods.** Neighborhoods shall include sufficient schools to support the residential population. Schools shall be located along local, collector, or arterial streets, but entrances may not be located on arterials.

- Policy 3.2-i Dedication for public uses.** Based on the proportional impacts of development on the demand for public services and facilities, a portion of any new residential neighborhood shall be conveyed or voluntarily committed in fee simple title to the City for public uses, including but not limited to schools, libraries, and police and fire stations. These conveyances must be in a development agreement or other form approved by the City Attorney.
- Policy 3.3-a Protect Water Quality and Supply.** Continue efforts to safeguard the quality and availability of Turlock’s water supply.
- Policy 3.3-b Use Groundwater at a Sustainable Rate.** Undertake steps to ensure the use of groundwater does not exceed the sustainable by verifying the estimated sustainable supply of 24,550 acre-feet per year and limiting groundwater use to the sustainable supply.
- Policy 3.3-c Sustainable water supply.** Ensure that a new system for potable water provision, either through implementation of the Regional Surface Water Supply Project or other means, is in place by the time that Turlock’s projected annual potable water demand exceeds the sustainable annual groundwater supply level of 24,550-acre-feet, estimated to occur in 2020.
- Policy 3.3-d Meet projected needs.** Promote the orderly and efficient expansion of public utilities and the storm drainage system to adequately meet projected needs, comply with current and future regulations, and maintain public health, safety, and welfare.
- Policy 3.3-e Coordinate infrastructure provision with growth.** Coordinate capital improvements planning, design, and construction for all municipal service infrastructure with the direction, extent, and timing of growth.
- Policy 3.3-f Utility Rates.** Continue to establish water and wastewater rates that are sufficient to operate, maintain, and upgrade (for current and future regulatory requirements) the City’s water, wastewater, and stormwater infrastructure.
- Policy 3.3-g Development Impact Fees.** Continue to equitably distribute costs associated with serving new development through the Development Impact Fee program.
- Policy 3.3-h Meet State waste reduction goals.** Reduce the generation of solid and hazardous waste and promote recycling in order to achieve the State’s solid waste management goals.
- Policy 3.3-l Infrastructure Construction.** Design and construct water system infrastructure as needed to meet current and future water demands and system requirements.
- Policy 3.3-v Infrastructure Construction.** Design and construct wastewater system infrastructure as needed to safely convey, treat and recycle, and dispose of current

and future wastewater flows and achieve future regulatory and system requirements.

**Policy 3.3-y Infrastructure Construction.** Design and construct stormwater system infrastructure as needed to safely convey, detain, and dispose of current and future stormwater flows, protect water quality, and meet regulatory requirements.

**Policy 3.3-ai Construction and Demolition Waste.** Adopt a construction and demolition waste recycling ordinance which will require that, except in unusual circumstances, all construction, demolition and renovation projects meeting a certain size or dollar value, to divert from the waste stream 100 percent of all Portland cement concrete and asphalt concrete and an average of at least 50 percent of all remaining debris from construction, demolition and renovation projects.

#### *Chapter 4 – Parks, Schools, and Community Facilities*

**Policy 4.1-d Park Fees and Land Dedication.** Follow the City’s Park Improvement Fee Nexus Study in determining the collection and use of park fees and park land dedication, and periodically update to ensure the equitable distribution of cost between existing and new residents, businesses, and property owners.

**Policy 4.1-l Community and Neighborhood Parks.** Provide 3.5 acres of park land per 1,000 residents, aiming for a citywide ratio of between 2-to-1 and 3-to-1 for neighborhood and community park land. Neighborhood parks include public neighborhood-serving city parks, neighborhood school parks, and recreation corridors.

**Policy 4.1-r Fees for Non-Residential Development.** Levy a parks and recreation fee on both residential and non-residential development commensurate with expected use of such facilities by residents and employees of non-residential developments.

**Policy 4.2-a Facilities to Serve Community Needs.** Support the development of community facilities to enhance the City’s identity and meet the civic and social needs of the community.

**Policy 4.3-f New School Sites.** Require that school sites are designated and reserved for school use as part of future master plans. The General Plan anticipates one future elementary school in each of the following Master Plan areas: Southeast 1, 2, 3, and 5, and Northwest; and one within the existing City. A new high school and middle school in the Southeast 3 Master Plan Area is also anticipated. The middle and high school sites should be acquired by the end of the 2012-13 fiscal year, as stated in the 2008 Capital Facility Financing Plan; future capital plans should detail a schedule for additional site acquisition. Provide needed facilities concurrent with phased development.

**Policy 4.3-h School Impacts.** Support necessary and reasonable efforts by the school districts to obtain funding for capital improvements required to meet school facility needs, including adoption and implementation of local financing mechanisms such as community facility districts, and the assessment of school impact fees. Only residential development requests which have recognized and fully mitigated any significant impacts on school facilities shall be approved.

*Chapter 6 – City Design*

**Policy 6.3-j Undergrounding of utility wires.** Continue to require undergrounding of utility lines in new developments.

**Policy 6.4-c Conserve energy and water.** Reduce demand for consumption of energy and water through site planning techniques.

**Policy 6.4-i Reduce water demand for landscaping in public and private areas.** In order to reduce water demand, drought-tolerant, drought-resistant, and native plants, as well as artificial turf, should be used for landscaping. Use of natural turf in public areas should be restricted to playfields and other high-activity locations.

**Policy 6.7-k Design for public safety.** Promote public safety and welfare through urban design. New development should be designed in such a way that emphasizes access and connectivity, minimizes dead-end streets, provides ample visibility and lighting in public spaces, and encourages social interactions.

*Chapter 10 – Safety*

**Policy 10.4-b Provide High-Quality Public Safety Services.** Continue to provide a level of service standard that meets or exceeds the national average in response to police protection and fire protection/prevention through efficient organization, administration and annual funding.

**Policy 10.4-c Expand Services in Coordination With Growth.** Continue to promote the orderly and efficient expansion of public safety facilities to adequately meet the needs of the community while minimizing adverse fiscal and environmental impacts. Continue to coordinate capital improvements planning for public safety facility needs with implementing policies set forth in the General Plan with respect to the direction, extent, and timing of Turlock’s growth.

**Policy 10.4-d Establish Equitable Funding Mechanisms.** Continue to implement and review existing, and consider establishing new, equitable methods for minimizing public facility and service costs associated with new development. Take advantage of State and federal funding and grant opportunities as they become available.

**Policy 10.4-n Enforce Fire Safety Codes.** Continue enforcement of all aspects of Chapter 4-3 of the Municipal Code, Fire Codes, and Administration.

**Policy 10.4-q Evaluate Beat System to Optimize Police Service.** Continue to monitor and revamp as necessary the Police Department’s beat system to provide high quality and efficient crime deterrence, ensure a minimal response time, and optimize police available time throughout the City as it grows.

**Policy 10.4-w Coordinate Facilities Planning With Urban Expansion.** When preparing master plans, assess the ability of the Police Department to maintain service levels, and identify strategies to mitigate potential service impacts. Ensure that the Capital Facility Fee program, the Community Facilities District #2 and any other funding mechanisms are updated to provide adequate funding of required facilities, equipment, apparatus and services.

## **CITY OF TURLOCK MUNICIPAL CODE**

### ***Water System***

The Turlock Municipal Code contains regulations related to the water system in Title 6, Chapter 5. The Subdivision Ordinance contains the specific water pipelines system requirements for development projects.

### ***Sewer System***

The Turlock Municipal Code contains regulations related to the sewer system, including sewage disposal and service fees, in Title 6, Chapter 4. The Subdivision Ordinance contains the specific sanitary sewer system requirements for development projects.

### ***Water Efficient Landscape Ordinance***

The City of Turlock adapted the California Model Water Efficient Landscape Ordinance (WELO) to adopt its Water Efficient Landscape Ordinance in September 2009. For new landscaping projects of 2,500 square feet or more that require a discretionary or ministerial approval, the applicant is required to submit a detailed Landscape Documentation Package that discusses water efficiency, soil management, and landscape design elements.

## **3.13.4 METHODOLOGY**

This section is based on information provided by a number of sources, which are described below.

Quad Knopf consulted with the Turlock Fire Department and the Turlock Police Department about their ability to serve the proposed project. The Turlock Unified School District provided their verbal comments at the Scoping Meeting held on February 23, 2012. The agency responses are provided in Appendix A.

A Water Supply Assessment was prepared to evaluate the ability of the City of Turlock to meet the water supply demand associated with the proposed project. A water supply assessment is

required to comply with water supply planning requirements of the California Water Code and Government Code. Water supply assessments are required for residential developments of more than 500 dwelling units. Much of the information required in the Water Supply Assessment is included in the City of Turlock 2010 Urban Water Management Plan. Additional information was obtained from the City of Turlock Water Master Plan Update. The complete Water Supply Assessment is provided as Appendix H.

Quad Knopf obtained information regarding wastewater from the City of Turlock Sewer System Management Plan and the City of Turlock Water Quality Control Facility, Treatment Facilities Improvement, Turlock Capacity Assessment.

Quad Knopf also reviewed relevant city documents, including the General Plan, the Municipal Code, and the Urban Water Management Plan.

### **3.13.5 IMPACT EVALUATION CRITERIA**

According to the CEQA Guidelines, a project will normally have significant adverse impacts associated with public services if it would:

- a) 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 service ratios, response times of other performance objectives for any of the public services:
  - Fire protection;
  - Police protection;
  - Schools;
  - Parks (Refer to Section 3.14 Recreation of this Draft EIR); and
  - Other public facilities.

To determine whether impacts to utilities and services are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

- e) 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.
- f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- g) Comply with federal, state, and local statutes and regulations related to solid waste.
- h) Result in the inefficient, wasteful, or unnecessary consumption of energy?

### 3.13.6 IMPACT ANALYSIS

#### **Impact #3.13.1 - Increased Demand for Fire Protection Services and Personnel.**

This impact assesses whether the proposed project would result in a need for new or expanded fire protection and emergency medical service facilities.

The Fire Department provided written responses to a questionnaire regarding impacts to fire protection and emergency medical services. The responses are summarized below and a copy of the document is provided in Appendix A.

The Fire Department estimated that it would receive 450 calls annually from the project at buildout. The Department based its estimate on the increase in residences and population in the area of between five and 11 percent of the overall city housing and population numbers. The estimated calls by call type that the proposed project would generate on an annual basis are described as follows:

- EMS - 325 calls;
- Fire – 10 calls; and
- Other Type – 115 calls.

Fire Stations 1 and 2 are the closest fire stations to the project site; both are approximately 2.2 miles from the Master Plan area. The Fire Department indicated that development of the proposed project will increase the demand for additional fire protection services in southeast Turlock. This could require the City to hire more personnel and purchase additional equipment. The City has determined that implementation of the Morgan Ranch Master Plan will be the benchmark to trigger an analysis by the Fire Department to determine the location for Fire Station 5.

The City has Development Impact Fees to address the provision of public services to new development. In order to implement the goals and objectives of the City's General Plan, and to mitigate the impacts caused by future development in the city, fire department facilities must be constructed. The City Council has determined that Development Impact Fees are needed in order to finance these facilities and to pay for each development's fair share of the facilities' construction and acquisition costs. The development of new fire facilities would be subject to

CEQA review, accordingly any future fire facilities would be required to mitigate potentially significant impacts to the extent feasible. Adherence to the existing policies of the City of Turlock General Plan and payment of fire development impact fees will ensure that additional fire protection services and personnel are provided (when needed) and that new development will not proceed until sufficient fire protection services are ensured.

**Conclusion:** By complying with existing regulations and payment of standard fees the potential impact will be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

### **Impact #3.13.2 - Increased Demand for Law Enforcement Services.**

This impact assesses whether the proposed project would result in a need for new or expanded police protection facilities.

The Police Department provided written responses to a questionnaire regarding impacts to police protection. The responses are summarized below and a copy of the document is provided in Appendix A.

According to the written response dated May 14, 2012 (Appendix A), the proposed project would add an estimated 3,000 to 5,000 calls for service. The Turlock Police Department is committed to providing quality law enforcement services to all community members within the City of Turlock. The addition of the project would not change this commitment; however, development of the proposed project will increase the demand for additional law enforcement services in southeast Turlock. Upon buildout, the Morgan Ranch Master Plan area would obviously expand areas the Police officers would have to cover. As such, the response times to the project area and existing areas within the City may increase. This could require the City, which will provide law enforcement protection to the project site to hire more personnel and purchase additional equipment.

General Plan Policy 10.4q requires the City to evaluate the beat system to optimize police services and Policy 10.4-w requires the coordination of facilities planning with urban expansion. Policy 10.4-v states that when preparing master plans, projects should assess the ability of the Police Department to maintain service levels, and identify strategies to mitigate potential service impacts. The Police Department has indicated that anticipated increases in response times can be mitigated by adding additional staffing so that more offices are available to police a larger area.

The City has Development Impact Fees to address the provision of public services to new development. The purpose of the fees is to implement the goals and objectives of the City's General Plan, and to mitigate the impacts caused by future development in the city. The project would mitigate its impacts through payment of these fees.

**Conclusion:** By complying with existing regulations and payment of standard fees the potential impact will be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.13.3 - Increased Demand on Public Schools.**

This impact assesses whether the proposed project would result in a need for new or expanded school facilities.

The proposed project would include the development of 1,660 dwelling units, which would directly cause population growth and increase enrollment in the Turlock Unified School District (TUSD).

TUSD indicated in its verbal comments at the Scoping Meeting that adequate capacity exists to serve middle school and high school facilities from the project area, but that a new elementary school would be necessary. The Morgan Ranch Master Plan includes an area that is designated for a future 11.1 acre elementary school site that would serve 300 students. TUSD indicated that they have been investigating locating a school site in the Morgan Ranch Master Plan area for some time, but has not yet acquired the school site.

The proposed project would mitigate its impact on the need for new school facilities through the payment of school fees in accordance with the latest adopted fee schedule at the time building permits are sought. These fees would be used for capital improvements to school facilities and may be used to fund the construction of the planned elementary and high schools in the project vicinity.

Government Code Section 65995 prohibits a local agency from either denying approval of a land use project because of inadequate school facilities or imposing school impact mitigation measures other than designated fees. Therefore, payment of development fees to TUSD would address the proposed project's impacts on schools.

**Conclusion:** By complying with existing regulations and payment of standard fees the potential impact will be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.13.4 - Increased Demand on Library Services.**

This impact assesses whether the proposed project would result in a need for new or expanded library facilities. The proposed project would have a total population of 4,953 persons at buildout (based on DOF's 2.984 persons per household estimate multiplied by 1,660 household units), which would result in increased use of local libraries.

Turlock's public library facility does not currently meet its service standard for City residents. It comprises 10,000 square feet, which translates to 0.12 square feet per person, short of both the current system-wide ratio and the Library's planning standard. Turlock's library is inadequate to serve the current population, a condition that will worsen as the population grows with new development such as the proposed project. To meet the Stanislaus County Library 2011-15

Strategic Plan system-wide standard of 0.40 to 0.45 square feet per resident, the City would need between 50,800 and 82,500 square feet of library space in 2030, or between 40,800 and 72,550 square feet in addition to the existing library. The Library will likely pursue development of a library in the range of 25,000 to 30,000 square feet in Turlock, as soon as is feasible. The Turlock General Plan calls for the City to explore creation of a joint school/community library as part of the new middle or high school. This could be done in partnership with the School District and potentially the County Library. The General Plan also identified the nearly 53,000-square foot California State University, Stanislaus Library as another resource for free community use, although there is a small annual fee for community members to check out materials. Together, a new library in the 25,000 to 30,000 square foot range and a new joint-use library of at least 25,000 square feet would meet projected demand in Turlock. Alternatively, the joint-use library could be smaller and the CSUS Library could be counted on to meet some demand. The Turlock General Plan concluded that it may reasonably be anticipated that Turlock will gain a new, larger library during the planning period. These facilities are supported by General Plan policies, and would serve the growing demand for services in the Turlock area including the Master Plan area. Adherence to General Plan policies would reduce impacts to library services to a less than significant level.

**Conclusion:** Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.13.5 - Exceed wastewater treatment requirements of the Regional Water Quality Control Board, Central Valley Region.**

Buildout of the General Plan including the Morgan Ranch Master Plan Area, which was identified as Master Plan Area (MPA) Southeast1 (SE1), could result in increased sanitary sewer overflows. To collect and convey the wastewater generated by the buildout of the General Plan will use existing sanitary sewers for infill development and new sanitary sewers for the NW and SE MPAs. The proposed sewer system for the SE MPAs was sized to convey all of the wastewater from the new growth in the SE MPAs.

Use of existing sewers is not required to convey the wastewater from the SE MPAs. There are already 8-inch sewer lines in the portions of Glenwood Avenue where there are residences fronting the street. However, these lines are to service existing residences only. New development in the project area will install a new system of sewer lines that will be connected to the City's existing collection system. The nearest sewer trunk line is a 24-inch line in Linwood Avenue. This line runs east-west approximately ¼ mile north of the project area. The sewer trunk line currently terminates approximately 700 feet west of the Linwood Avenue / Golf Road intersection.

The Linwood Avenue trunk line will be extended to Golf Road and then will be further extended south in Golf Road to the Golf Road / Glenwood Avenue intersection. At that location, a sewer lift station will be installed. From there, a trunk line would continue from the Golf Road / Linwood Avenue intersection to the new Golf Road / Morgan Ranch Arterial intersection. Local collection lines serving properties south of the Morgan Ranch Arterial would connect at this

point, while properties north of the Morgan Ranch Arterial would connect from the lift station via Glenwood Avenue.

The project applicant would be responsible for paying the required sewer connection and capacity fees. The project’s internal wastewater conveyance system would be designed and constructed in conformance with the City’s standards. Project land uses would discharge into the onsite collection lines that will extend and connect to the City’s sewer system.

Table 3.13-13 summarizes the proposed project’s estimated wastewater generation based on demand factors used in the General Plan EIR. The estimated wastewater generated is consistent with estimates in the General Plan EIR for the MPA SE1.

**Table 3.13-13  
Wastewater Generation**

Land Use	Dwelling Units / Square Feet	Acres	Average Flow Factor (gpd/acre)	Average Flow (mgd)
Medium Density Residential	1322	120.2	2640	0.317
High Density Residential	338	15	5400	0.081
Community Commercial	96,921 sf	8.9	1100	0.010
Office	16,335 sf	1.5	1100	0.002
Park	--	8.7	100	0.001
Detention Basin	--	4.4	0	0.000
Public (School)	300 students	11.1	1100	0.012
<b>Total</b>				<b>0.423</b>

Notes: gpd = gallons per day, mgd = million gallons per day  
Source: City of Turlock General Plan Draft EIR, 2012

To treat the wastewater generated by the buildout of the General Plan, the existing TRWQCF will have to be expanded to 23.8 mgd by the year 2030 and to 26.6 mgd at full buildout of the General Plan. The City already has a plan for expanding the capacity of the TRWQCF to 22 mgd. Also, there is land available at the TRWQCF to further expand the capacity to well above 26.6 mgd. The TRWQCF operates in compliance with all federal and state water quality standards. Future expansion in the capacity of the TRWQCF would be in accordance with federal and state water quality standards in effect at the time of expansion, including obtaining new waste discharge permits which would dictate waste discharge requirements (WDR) for the facility.. Accordingly, the expansion of the TRWQCF would not exceed wastewater discharge requirements of the Regional Water Quality Control Board.

**Conclusion:** Development within the Morgan Ranch Master Plan area would be required to pay their sewer connection and capacity fees in accordance with the adopted fee schedule at the time building permits are sought which ensures that the TRWQCF is expanded in accordance with the Sewer Master Plan and in compliance with regulatory standards. Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.13.6 - Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.**

## **WASTEWATER**

As discussed above under Impact 3.13.5, the proposed project represents growth in accordance with the General Plan; the future growth as a result of the General Plan was determined to result in the need to expand the capacity of the TRWQCF. Development within the Morgan Ranch Master Plan area would be required to pay their sewer connection and capacity fees in accordance with the adopted fee schedule at the time building permits are sought which ensures that the TRWQCF is expanded in accordance with the Sewer Master Plan and in compliance with regulatory standards. Impacts would be *less than significant*.

## **WATER**

The Morgan Ranch Master Plan will require a water supply system of 10-inch and 12-inch lines to be constructed and looped into the City's existing water system and four connection points. A new City water well will be drilled within the project area at the northwest corner of SR 99 and Golf Road, near the overpass.

Development with the Master Plan area will be required to pay for any expansion or improvements to the water distribution system. Water distribution system improvements required for the developments will include the extension of existing water lines to the development. The specific water distribution system requirements can only be determined when tentative maps are submitted for approval and may require water system modeling. Adherence to General Plan policies and the WELO will ensure that the proposed project's impacts to water facilities are reduced to a level of less than significant.

**Conclusion:** Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.13.7 - Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.**

Development of the Morgan Ranch Master Plan would increase impervious surface coverage on the project site. The increase in impervious surface coverage would create the potential for greater runoff to leave the project site and enter downstream waterways, which could cause flooding and erosion problems. No detailed drainage plans have been prepared for the proposed project at the time of this writing.

Current conceptual drainage plans for the majority of the project area will drain to the new park/pond basin located on the southerly side of the project area adjacent to SR 99. The exceptions are the existing gas station and car wash sites that currently drain to existing storm

drain lines in Lander Avenue, and the north side of Glenwood Avenue, which drains to drop inlets with lines that carry storm water to existing basins in the existing neighborhoods north of the project area. There will be a 30-inch overflow line that runs from the outfall structure at the new basin to an existing 42-inch storm drainage line in Lander Avenue.

At the time tentative maps are submitted for approval, the project applicant will be required to prepare and submit a drainage plan that identifies onsite drainage facilities that impound runoff and ensure that it is released at a rate no greater than that of the pre-development condition of the project site.

Construction of new stormwater infrastructure will be in accordance with City policies and regulations. Adherence to these policies and regulations would reduce potential impacts from construction of the new stormwater infrastructure to a less than significant level. Additionally, the project will be required to pay its fair share of impact fees to drainage facilities.

**Conclusion:** Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.13.8 - Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.**

The Water Supply Assessment’s water demand projections for the proposed project are summarized in Table 3.13-14. The water demand estimate is based on the Water Supply Assessment contained in Appendix H.

**Table 3.13-14  
Proposed Project – Water Demand**

Land Use	Dwelling Units/SF	Acres	Demand Factor ac-ft/yr/acre	Water Demand (ac-ft/year)
Medium Density Residential	1,322	120.2	3.98	478
High Density Residential	338	15	11.76	176
Community Commercial	96,921 sf	8.9	1.9	17
Office	16,335 sf	1.5	1.9	3
Park	--	8.7	3.29	29
Detention Basin	--	4.4	3.29	14
Public (School)	300 students	11.1	1.9	21
<b>Total</b>				<b>739</b>

Notes: SF = square feet, ac-ft/year = acre-feet per year  
Source: City of Turlock General Plan Draft EIR, 2012

Based on the demand factors used in the General Plan Draft EIR, the proposed project would demand 739 acre-feet per year (659,737 gallons per day or 458 gallons per minute). According to the General Plan Draft EIR, the Morgan Ranch Master Plan area, identified as SE1 in the General Plan would have an annual demand of 737 acre-feet per year, which is consistent with the estimate in Table 3.13-14. The estimated annual consumption using the General Plan

demand factors is the equivalent of 3.4 percent of the current 21,771 acre-feet per year the City produced from its groundwater supply.

The population increase as a result of the Morgan Ranch Master Plan implementation is within the planned population growth for the City, which anticipates a population of 126,800 at build-out. This population increase is accounted for in the supply and demand projections shown in Tables 3.13-10, 3.13-11, 3.13-12 for a normal year, single-dry year, and multiple-dry year, respectively. The City expects to be able to meet water demand through groundwater extraction through 2020 by adding wells to extract the available water and infrastructure to deliver the water to the new facilities as the demand increases with buildout of the General Plan. By 2020, the City plans to supplement its groundwater with surface water from the RSWSP. Buildout of the General Plan without the RSWP will result in the depletion of the groundwater supply and a lowering of the local groundwater table level.

The Draft EIR for the General Plan includes mitigation measures to ensure that the RSWSP and other water supplies will be implemented before the time that groundwater exceeds 24,550 acre-feet per year (estimated to be the year 2017). Because availability of water supplies is not completely assured, the City found the impact of General Plan buildout to be a significant impact on water supplies.

The following are the findings of the water supply assessment for the Morgan Ranch Master Plan project:

- The projected water demand of the proposed project was accounted for in the City of Turlock 2010 Urban Water Management Plan;
- The projected water demand for the proposed project is approximately 739 acre-feet per year;
- Groundwater may not be available in sufficient supply to meet the project and other planned future water demands. However, the City is planning for the option of supplementing groundwater with recycled and surface water supplies;
- If the City is able to augment its water supply through the RSWSP, the groundwater supply will be sufficient in a normal-year, single-dry-year, and multiple-dry-year scenarios; and
- If the City is able to augment its water supply through the RSWSP, the proposed project will have no impact on the overall water balance in the Turlock Subbasin.

Compliance with water conservation requirements of the Building Code and the WELO is expected to result in a 20 percent reduction in indoor water use and a 6.1 percent reduction of outdoor water use. This will result in an impact that is less than significant.

**Conclusion:** Impacts would be *less than significant*.

**Mitigation Measures:** None required.

**Impact #3.13.9 - 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.**

As discussed above under Impact 3.13.5, the proposed project represents growth in accordance with the General Plan; the future growth as a result of the General Plan was determined to result in the need to expand the capacity of the TRWQCF. Development within the Morgan Ranch Master Plan area would be required to pay their sewer connection and capacity fees in accordance with the adopted fee schedule at the time building permits are sought which ensures that the TRWQCF is expanded in accordance with the Sewer Master Plan and in compliance with regulatory standards. In addition, as noted in Impact #3.13.9, Building Code and WELO requirements will reduce both indoor and outdoor water use. Impacts would be *less than significant*.

**Conclusion:** Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.13.10 - Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs.**

This impact assesses whether the proposed project would be served by a landfill with adequate capacity.

Construction and operational solid waste generation characteristics are discussed separately below.

**CONSTRUCTION WASTE GENERATION**

Short-term construction waste generation is summarized in Table 3.13-15. The estimate of 13,046.3 tons was calculated using demolition and residential and non-residential construction waste generation rates provided by the U.S. Environmental Protection Agency.

**Table 3.13-15  
Demolition and Construction Solid Waste Generation**

Activity	Waste Generation Rate	Square Feet	Waste Generation (Tons)
Demolition	115 lbs/square foot	65,000	3,737.5
Construction – Residential	4.38 lbs/square foot	4.15 million	9,088.5
Construction-Non-residential	3.89 lbs/square foot	113,256	220.3
<b>Total</b>	-	-	<b>13,046.3</b>

Notes: Project site building estimated to total approximately 65,000 square feet based on visual observation. Because exact square footage for residential dwelling is not known at this time, an average square footage of 2,500 square feet was used for the 1,660 dwelling units.

1 ton = 2,000 pounds

Source: U.S. Environmental Protection Agency, 1998

Given the amount of construction waste that would be generated, there is the potential that this could impair the City’s ability to meet its state-mandated solid waste targets. As such, mitigation is proposed that would require construction and demolition debris recycling to be implemented. The implementation of this mitigation measure would reduce potential impacts to a level of less than significant.

Table 3.13-16 summarizes operational waste associated with the proposed project. The single-family residential dwelling units would be served with curbside solid waste and recycling collection service, which is a standard municipal service provided to all single-family residences. As such, it can be reasonably assumed that the single-family dwelling units would have convenient access to recycling services. However, multi-family residential and commercial uses typically employ centralized solid waste collection facilities and do not always offer convenient recycling options. To ensure that the multi-family residential uses provide onsite recycling collection facilities, mitigation is proposed requiring the provision of such facilities.

**Table 3.13-16  
Operational Solid Waste Generation**

Land Use	Waste Generation Rate	Units	Waste Generation	
			Daily	Annually
Single-Family Residential	10 pounds/dwelling unit/day	1,322 dwelling units	13,220 pounds (6.61 tons)	2,413 tons
Multiple-Family Residential	4 pounds/dwelling unit/day	338 dwelling units	1,352 pounds (0.67 tons)	247 tons
Non-residential	4.8 pounds/square foot/year	113,256 square feet	1,489 pounds (0.74 tons)	272 tons
<b>Total</b>			<b>16,061 pounds (8.03 tons)</b>	<b>2,932 tons</b>

Notes: 1 ton = 2,000 pounds  
Source: CalRecycle, 2010

As discussed in the Environmental Setting, the City of Turlock contracts with a franchise hauler to collect garbage and recyclables at curbside. Garbage is taken to the transfer station on Walnut Road, and from there hauled to the Fink Road landfill near Crows Landing, or to the Stanislaus Resource Recovery Facility (SRRF), a waste-to-energy facility, adjacent to the landfill. The Fink Road Landfill should have sufficient capacity to accommodate the proposed project, however given that the capacity depends on continued lower disposal rates and expansion of the existing facility, Mitigation Measures #3.13.10a and #3.13.10b are proposed requiring that the project implement appropriate and feasible measures to reduce solid waste.

**Conclusion:** Impacts would be *potentially significant*.

**Mitigation Measure #3.13.10a:** Prior to issuance of building permits for any building developed pursuant to the Master Plan, the project applicant shall retain a qualified contractor to perform construction and demolition debris recycling. Following the completion of construction activities, the project applicant shall provide documentation to the satisfaction of the City of Turlock demonstrating that construction and demolition debris was recycled.

**Mitigation Measure #3.13.10b:** Prior to issuance of final certificate of occupancy for each multi-family residential and commercial building, the project applicant shall install onsite recycling collection facilities. Such facilities shall be provided in centralized locations within enclosed facilities. Signage shall clearly identify accepted materials, and recycling collection vessels (i.e., dumpsters, receptacles, bins, totes, etc.) shall be distinctly different in appearance from solid waste collection vessels.

**Effectiveness of Measures:** With the implementation of the above measures, impacts to landfills would be reduced to a level of *less than significant*.

**Impact #3.13.11 - Comply with federal, state, and local statutes and regulations related to solid waste.**

Solid waste disposal must follow the requirements of the contracted waste hauler, which follows federal, state, and local statutes and regulations related to the collection of solid waste. The proposed project would comply with all state and local waste diversion requirements regarding trash and recycling areas.

**Conclusion:** Impacts would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.13.12 - Result in the inefficient, wasteful, or unnecessary consumption of energy?**

The Turlock Irrigation District (TID) would serve the project with electricity and Pacific Gas and Electric (PG&E) would serve the proposed project with natural gas. Table 3.13-17 provides an estimate of the proposed project's annual electricity and natural gas consumption. These figures were derived from energy consumption rates provided by the United States Energy Information Administration and the California Energy Commission. The consumption rates are based on national and state figures for residential and commercial uses. As shown in the table, the proposed project would annually use 9.92 GWh of electricity and 49,705 MBtu of natural gas.

**Table 3.13-17  
Project Energy Demand**

Energy Source	Land Use (Quantity)	Annual Consumption Rate	Annual Consumption
<b>Electricity</b>	Single Family Residential (875)	4,168 kWh/unit-year	5.51 GWh
	Multifamily Residential (450)	8,374 kWh/unit-year	2.83 GWh
	Commercial (96,921 square feet)	13.63 kWh/square foot	1.32 GWh
	Office (16,335 square feet)	16.08 kWh/square foot	0.26 GWh
<b>Total Electricity</b>	-	-	<b>9.92 GWh</b>
<b>Natural Gas</b>	Single Family Residential (875)	234 Therms/household	30,981 MBtu
	Multifamily Residential (450)	471 Therms/household	15,913 MBtu
	Commercial (96,921 square feet)	25.99 kBtu/sf	2,519 MBtu
	Office (16,335 square feet)	17.90 kBtu/sf	292 MBtu
<b>Total Natural Gas</b>	-	-	<b>49,705 MBtu</b>

## Notes:

kWh = kilowatt hour      GWh = gigawatt hour      kBtu = kilo British Thermal Unit      MMBTU = million British Thermal Unit

Sources: Electricity: California Energy Commission, Residential Appliance Saturation Survey, 2004. <http://www.energy.ca.gov/appliances/rass/>; Table E-1 from California Energy Commission. California Commercial End-Use Survey. Consultant Report. March 2006. CEC-400-2006-005 [www.energy.ca.gov/2006publications/CEC-400-2006-005/CEC-400-2006-005.PDF](http://www.energy.ca.gov/2006publications/CEC-400-2006-005/CEC-400-2006-005.PDF)

Natural Gas: Table E-1 from California Energy Commission. California Commercial End-Use Survey. Consultant Report. March 2006. CEC-400-2006-005, California Energy Commission, Residential Appliance Saturation Survey, 2004. <http://www.energy.ca.gov/appliances/rass/>

The proposed project design standards will be subject to the most recently adopted edition of the Title 24 energy efficiency standards at the time building permits are sought. The Title 24 standards include a number of requirements associated with energy conservation and, therefore, ensure that the proposed project would not result in the inefficient, wasteful, or unnecessary use of energy.

**Conclusion:** Impacts would be *less than significant*. Energy conservation is discussed in detail in Chapter 6, Other CEQA Considerations, of this EIR.

**Mitigation Measures:** No mitigation measures are required.

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## **3.14 Recreation**

### **3.14.1 INTRODUCTION**

This section presents information on existing public services in the project vicinity with regard to parks and recreation, and describes the potential environmental effects of the proposed project related to the provision of these services.

### **3.14.2 ENVIRONMENTAL SETTING**

#### ***Existing Parks***

Turlock’s park system comprises community parks, neighborhood-serving city parks, neighborhood school parks, and recreation corridors. According to the General Plan, in 2010, the City of Turlock had 164 acres of neighborhood park land and 85 acres of community park land, for a total of 249 acres. Dual use storm drainage basins that provide opportunities for recreational use made up another 90 acres of land. With a population of 71,100 in 2010, the City provided 3.5 acres of park land per 1,000 residents (does not include dual-use storm drainage basins).

#### ***Community Parks***

Community parks serve all ages and may include facilities for low-intensity/passive recreation use, lighted fields, courts, swimming pools, and areas and buildings for community festivals and civic events, as well as for organized sport and athletic competitions. Generally restrooms and some off-street parking are provided. While community parks serve larger areas of the City than do neighborhood-serving city parks, they may also meet the recreation/open space needs of the adjacent neighborhood. Turlock has three community parks, ranging in size from approximately 25 to 32 acres (not including ponds or storm drainage basins). Turlock’s 85 acres of community park land represent one third of all park land in the City. Donnelly Park is primarily devoted to passive activities such as picnicking and walking paths, while Pedretti Park and the Regional Sports Complex are almost entirely devoted to playing fields used for organized recreational activities. Pursuant to the General Plan, facilities that are not generally available for public use are not considered appropriate for community parks.

#### ***Neighborhood Parks***

### **NEIGHBORHOOD-SERVING CITY PARKS**

Neighborhood-serving City parks consist of parks devoted primarily to serving a small portion of the City. Park facilities are usually oriented toward the recreational needs of children, but may also include volleyball courts, half-size basketball courts, and picnic and play areas that serve all age groups. Turlock’s 24 existing neighborhood-serving city parks are as small as half an acre to as large as 7 acres in size (not including dual-use storm drainage basins). Five of Turlock’s neighborhood-serving parks are less than an acre in size, and may be considered “pocket parks.” These are not classified separately, but have a somewhat different character. Two other

neighborhood-serving city parks have under an acre of land that serves only as a park land, but much larger areas of storm drainage basin improved for recreational use.

### **NEIGHBORHOOD SCHOOL PARKS**

Neighborhood School parks consist of recreational parks or playgrounds built adjacent to educational buildings and facilities. A school park provides for neighborhood recreation as well as the needs of the adjacent schools. The City has a shared facility use agreement with the Turlock Unified School District; therefore, the recreational grounds of Turlock’s public schools are also included in the parks and open space inventory and are available for general community use. Parks associated with elementary schools are between four and six acres in size, while parks associated with middle and high schools are as large as 20 acres. There are currently 15 parks in this category.

### **RECREATION CORRIDORS (GREENWAY SYSTEM)**

The master-planned neighborhoods developed in recent years in north and northeast Turlock feature recreation paths and greenbelts at the City’s edge and “paseos” in the neighborhood interior, totaling about 13 acres. Neighborhood-Serving City Parks, Neighborhood School Parks, and Recreation Corridors comprise the Neighborhood Parks category. Altogether, Turlock has 164 acres of existing Neighborhood Parks, representing two thirds of the City’s parkland.

### **SPORTS AND RECREATIONAL FACILITIES**

The City provides athletic and recreational facilities for residents such as Little League baseball fields, softball fields for adults, bicycle paths and walking trails, gymnasiums, and other facilities. The City relies on its multi-use agreement with the School District for shared use of swimming pools and gymnasiums at Turlock and Pitman High Schools, and for most of the City’s youth baseball fields and tennis courts.

#### ***Project Site***

The Morgan Ranch Master Plan provides areas for two parks that will serve residents in Morgan Ranch as well as residents in adjacent neighborhoods. One park will be located at the southeast corner of the Glenwood Avenue/English Avenue intersection, directly west of the proposed elementary school site. The second park will be located east of the detention basin in the south central portion of Morgan Ranch.

The 6.5-acre neighborhood park will be located next to the elementary school site in order to take advantage of the ability to share facilities. The elementary school will provide outdoor basketball courts and ball fields for baseball, soccer and other organized and semi-organized team sports. The neighborhood park will provide children’s play areas, shaded landscaping, benches and picnic areas. Together the two sites will provide facilities for the full range of outdoor park activities. Through arrangements between the School District and City, the school can use the neighborhood park during the weekday for outdoor learning activities and the public can use the school playground facilities after school and on weekends for sports activities.

The roughly one-acre pocket park south of the Morgan Ranch Arterial also will expand its utility by being designed together with the storm water drainage basin needed for the Master Plan Area. The park will be built at street level with children’s play area, benches and picnic tables. The storm water drainage basin will be built next to it in a shared use format that allows for park use in the basin when there are no storm events. Typically, this can be done with a two tiered basin. This park/pond concept has been successfully used in other areas of the City.

Connectivity to the parks and open space is a priority of the Morgan Ranch Master Plan. The Plan provides pedestrian/bicycle links from neighborhoods to the recreation facilities with safe and easy access.

### **3.14.3 REGULATORY SETTING**

#### ***Federal***

#### **SECTION 4(f) OF THE DEPARTMENT OF TRANSPORTATION ACT (49 U.S.C SECTION 303)**

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 23 U.S.C 138 and 49 U.S.C. 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation land, wildlife and waterfowl refuges, and historic sites.” Section 4(f) states that the Secretary of Transportation “may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

1. there is no prudent and feasible avoidance alternative to the use of the land from the Section 4(f) property; and
2. the program or project includes all possible planning to minimize harm to the Section 4(f) property resulting from the use.

#### **SECTION 6(f) LAND AND WATER CONSERVATION FUND ACT OF 1965 (PUBLIC LAW 88-578, 16 U.S.C SECTION 460L-4 – 460L-11)**

The purpose of the Land and Water Conservation Fund (LWCF) Act is to assist in preserving, developing, and ensuring accessibility to outdoor recreation resources as to strengthen the health and vitality of the citizens of the United States by providing funds, planning, acquisition, and development of facilities. Recreation facilities awarded such funds are subject to the provisions of this Act. The LWCF’s most important tool for ensuring long-term stewardship is its “conversion protection” requirement. Section 6(f)(3) strongly discourages conversions of state and local park and recreation facilities to other uses. Conversion of property acquired or developed with assistance under the program requires approval of the NPS and substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location.

### **NATIONAL PARK SERVICE ORGANIC ACT (16 U.S.C. SECTIONS 1 TO 4)**

This act created the NPS, an agency within the Department of the Interior, to administer the nation’s national parks, which are areas of national significance afforded special recognition and protection in accordance with various acts of Congress. This act also sets the purpose of the park system as follows: “The fundamental purpose of the parks is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” The NPS is required to keep park units in an unimpaired state in perpetuity and to provide the highest quality of use and enjoyment of the entire system by today’s visitors as well as those in the future. Areas in parks designated as natural zones must be managed to ensure that natural ecological processes operate unimpaired unless otherwise specifically provided for in the law creating them, and the NPS is required to manage native animal life for its essential role in natural ecosystems. Historic zones must be managed to provide full protection for cultural resources.

### **WILDERNESS ACT (16 U.S.C. SECTIONS 1131 TO 1136)**

This act establishes a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as “wilderness areas.” Congress administers the system for the use and enjoyment of the American people in such manner as will leave those areas unimpaired for future use (for example, wilderness) and to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness.

#### **State**

### **CALIFORNIA PUBLIC PARK PRESERVATION ACT (CALIFORNIA PUBLIC RESOURCES CODE SECTIONS 5400 TO 5409)**

This act provides that a public agency that acquires public parkland for non-park use must either pay compensation that is sufficient to acquire substantially equivalent substitute parkland or to provide substitute parkland of comparable characteristics. If less than 10 percent of the parkland, but not more than 1 acre is acquired, the operating entity may improve the portion of the parkland and facilities not acquired using the funds received.

### **QUIMBY ACT**

The 1975 Quimby Act (California Government Code section 66477) authorized cities and counties to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. The Act states that the dedication requirement of parkland can be a minimum of 3 acres per thousand residents or more, up to 5 acres per thousand residents if the existing ratio is greater than the minimum standard. Revenues generated through in lieu fees collected and the Quimby Act cannot be used for the operation and maintenance of park facilities. In 1982, the act was substantially amended. The amendments further defined acceptable uses of or restrictions on Quimby funds, provided acreage/population standards and

formulas for determining the exaction, and indicated that the exactions must be closely tied (nexus) to a project’s impacts as identified through studies required by the California Environmental Quality Act (CEQA).

## **STATE OPEN SPACE STANDARDS**

State planning law (Government Code Section 65560) provides a structure for the preservation of open space by requiring every city and county in the State to prepare, adopt, and submit to the Secretary of the Resources Agency a “local open-space plan for the comprehensive and long-range preservation and conservation of open-space land within its jurisdiction.” The following open space categories are identified for preservation:

- Open space for public health and safety, including, but not limited to, areas that require special management or regulation due to hazardous or special conditions;
- Open space for the preservation of natural resources, including, but not limited to, natural vegetation, fish and wildlife, and water resources;
- Open space for resource management and production, including, but not limited to, agricultural and mineral resources, forests, rangeland, and areas required for the recharge of groundwater basins;
- Open space for outdoor recreation, including, but not limited to, parks and recreational facilities, areas that serve as links between major recreation and open space reservations (such as trails, easements, and scenic roadways), and areas of outstanding scenic and cultural value; and
- Open space for the protection of Native American sites, including, but not limited to, places, features, and objects of historical, cultural, or sacred significance such as Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property (further defined in California Public Resources Code Sections 5097.9 and 5097.993).

### ***Local***

## **CITY OF TURLOCK GENERAL PLAN**

The City of Turlock General Plan includes the following relevant policies related to recreation that are applicable to the proposed project:

### ***Chapter 4 – Parks, Schools, and Community Facilities***

**Policy 4.1-a High-Quality Park System.** Develop a high quality, diversified public park system that provides a variety of recreational opportunities for all City residents.

- Policy 4.1-c Cooperation with School District.** Continue cooperative efforts with the Turlock school district through joint use agreements for park and recreational facilities.
- Policy 4.1-d Park Fees and Land Dedication.** Follow the City’s Park Improvement Fee Nexus Study in determining the collection and use of park fees and park land dedication, and periodically update to ensure the equitable distribution of cost between existing and new residents, businesses, and property owners.
- Policy 4.1-h Neighborhood-Serving City Parks.** Acquire and develop six new neighborhood-serving city parks, including two each in the Southeast 1 and Southeast 2 Master Plan Areas, and two in the Montana-West Master Plan Area. Place neighborhood parks at the core of new neighborhoods and co-locate neighborhood-serving city parks and neighborhood school parks wherever possible, as depicted on the Parks diagram.
- Policy 4.1-i Neighborhood School Parks.** Maintain joint-use relationship with Turlock Unified School District allowing public access to and use of school playfields during non-school hours. Coordinate with the School District in the location and design of school properties to facilitate flexible use of play fields.
- Policy 4.1-j Pocket Parks.** Work with neighborhood groups that wish to establish new pocket parks, in areas with a shortage of park space based on service area standards. The General Plan anticipates a structure whereby park land is purchased by local benefit assessment districts, while the City may agree to maintain new pocket parks. In the downtown core, pursue opportunities to acquire and develop small public spaces.
- Policy 4.1-l Community and Neighborhood Parks.** Provide 3.5 acres of park land per 1,000 residents, aiming for a citywide ratio of between 2-to-1 and 3-to-1 for neighborhood and community park land. Neighborhood parks include public neighborhood-serving city parks, neighborhood school parks, and recreation corridors.
- Policy 4.1-n Location Criteria.** Locate public parks in visible and accessible locations, in accordance with location criteria specified in this Element. Park locations may be adjusted within each master plan sub-area, but must remain within the boundaries of the sub-area.
- Policy 4.1-o Minimum Park Buildout.** All new parks must be developed to the minimum standards established in the Park Improvement Nexus Fee Study. These standards may be periodically updated.
- Policy 4.1-q Park Improvement Fees.** Following specifications of the Park Improvement Nexus Fee Study, calculate park fees to enable purchase of acreage and provision of off-site park improvements for 3.5 acres of parkland per 1,000 residents added

and require payment of these fees and/or land deduction as a condition of all new residential development. This park land may not be used for dual-use storm drainage basins.

**Policy 4.1-r Fees for Non-Residential Development.** Levy a parks and recreation fee on both residential and non-residential development commensurate with expected use of such facilities by residents and employees of non-residential developments.

Consistency with General Plan policies is evaluated in Chapter 3, Section 3.10 Land Use and Planning.

## **CITY OF TURLOCK MUNICIPAL CODE**

### ***Park Standards***

Turlock’s Subdivision Regulations (Turlock Municipal Code Sections 11-7-201 et seq.) stipulate that new residential subdivisions must dedicate parkland at a ratio equal to that specified in the latest adopted General Plan, or pay an in-lieu fee. The General Plan established the park acreage standard at 3.5 acres per 1,000 residents, not including storm drainage basins.

### **3.14.4 METHODOLOGY**

Quad Knopf reviewed relevant city documents, including the Existing Conditions Report, General Plan, and Park Master Plan to determine applicable regulations. Acres of park land needed for the park standard were calculated by dividing the projected new population at buildout (4,953) by 1,000, multiplying by 3.5 acres, and subtracting the proposed park land within the Master Plan area. An increase in population without progress toward meeting park land standards or identified recreational needs is taken as a significant impact. It is assumed that a significant decrease in the park land ratio would increase park deterioration.

### **3.14.5 IMPACT EVALUATION CRITERIA**

The state CEQA Guidelines set forth criteria for the determination of whether a project’s effect will significantly impact recreation. A project’s effect will normally be considered potentially significant if the following apply:

- 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 recreation facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

### 3.14.6 IMPACT ANALYSIS

**Impact #3.14.1 - 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.**

As referenced above under the Regulatory Setting, the City of Turlock has established a park standard of 3.5 acres of park land per 1,000 residents. The proposed project would have a total population of 4,953 persons at buildout (based on DOF’s 2.984 persons per household estimate multiplied by 1,660 household units). This would equate to a need for 17.3 acres of parkland based on the City’s standard.

Policy 4.1-q establishes park fees to enable purchase of acreage and provision of off-site park improvements for 3.5 acres of parkland per 1,000 residents added and requires payment of these fees and/or land deduction as a condition of all new residential development. Policy 4.1-r levies a parks and recreation fee on both residential and non-residential development commensurate with expected use of such facilities by residents and employees of non-residential developments.

The proposed project will provide 8.7 acres of park land within the Master Plan area, thus requiring the need to provide fees or land dedication to provide an additional 8.6 acres of park land. Pursuant to City General Plan policies, the proposed project will construct parkland and/or pay park impact fees for the acquisition and development of parks and recreation facilities to meet the project’s needs. In accordance with City of Turlock requirements the applicant will pay all park-related development fees at the time building permits are sought. The payment of these fees and adherence to the City of Turlock General Plan policies with regard to parks and recreation facilities will result in the provision of adequate park and recreational facilities. Accordingly, the project would not adversely impact existing parks and recreational facilities through increased use.

**Conclusion:** The impact will be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.14.2 - Does the project include recreation facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.**

As described under Impact 3.14.1, up to 4,953 new residents are anticipated to reside within the Morgan Ranch Master Plan area upon buildout. The proposed project would develop 8.7 acres of park land within the Morgan Ranch Master Plan area. The proposed project would also provide 4.4 acres of a dual-use detention basin, which is not counted towards the parkland total.

The General Plan specifically identified a new neighborhood-serving city park within Southeast 1 Master Plan Area (project site). Development of the parks within the Morgan Ranch Master Plan area will be in accordance with General Plan policies and standards, which address appropriate park sizes, park service areas, and park amenities. These policies and standards are

intended to ensure that parks are highly usable by all segments of the population, and that different types of parks serve specific roles in the parks and recreation system.

The development of parks within the Master Plan area has the potential for adverse effects to the local environment. For example, construction could negatively impact habitats for vegetation and wildlife or replace productive agricultural land. These types of impacts are considered in detail in other chapters of this Draft EIR. Adherence to General Plan policies and implementation of mitigation measures identified in other sections of the Draft EIR will ensure that the potential physical effects of park/recreational facility construction are reduced to a less than significant level.

**Conclusion:** This impact would be *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

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### 3.15 Transportation/Traffic

#### 3.15.1 INTRODUCTION

This section analyzes the existing transportation system in the proposed project area and addresses the potential transportation and circulation impacts resulting from development of the proposed project. OMNI-MEANS, Ltd. Engineers & Planners completed a traffic impact study (TIS) for the proposed project that serves as the basis for this section. The complete analysis, inclusive of technical data sheets, is provided as Appendix I.

The proposed project will include residential units (consisting of both single-family and multi-family structures), a public school, and commercial uses on a total of 170 acres in the southern portion of Turlock. The circulation system within the proposed project will consist of dedicated public streets, and will incorporate one roundabout, stop-signed controlled intersections and internal traffic signals. A series of trails and bike lanes are anticipated that will link the various neighborhoods to each other and to the planned parks and school.

Site access to the proposed project will be oriented to Golf Street, E. Glenwood Avenue, and Lander Avenue intersections, and to the proposed Morgan Ranch Arterial and 5<sup>th</sup> Street (Figure 3.15-1, Study Intersections and Road Segments). Morgan Ranch Arterial is planned to connect Golf Road on the eastern perimeter with Glenwood Avenue and Lander Avenue at the northwest corner of the project. 5<sup>th</sup> Street will connect Glenwood Avenue to the north and with Morgan Ranch Arterial on the south, providing access to the planned public school to its west. On-site access streets will connect Gold Road, Morgan Ranch Arterial, 5<sup>th</sup> Street, and E. Glenwood Avenue with access to the various project neighborhoods and amenities. Table 3.15-1 details the proposed development densities, per the City’s General Plan.

**Table 3.15-1  
Project Area General Plan Land Uses**

<b>Land Use Designation</b>	<b>Proposed Acres</b>	<b>Proposed Units</b>	<b>Density</b>	<b>Allowed Density</b>
Medium Density Residential	120.0	875 DU	9.0 DU/Acre	7.5-9.0 DU/Acre
High Density Residential	15.0	450 DU	30. DU/Acre	17-30 DU/Acre
Community Commercial	8.9	96.9 KSF	25% FAR	25% FAR
Office	1.5	16.3 KSF	25% FAR	35% FAR
Park	8.7	-	-	-
Detention Basin	4.4	-	-	-
Public (School)	11.1	-	-	-
<b>Total</b>	<b>169.8</b>			

Source: City of Turlock, 2012.

For purposes of this analysis, it is assumed that the proposed project will have constructed the following improvements:

- Construction of Morgan Ranch Arterial, including the realignment of E. Glenwood Avenue from Lander southerly, then continuing through the middle of the proposed project to Golf Road on the eastern project boundary;



- New intersection at Morgan Ranch Arterial and Golf Road, to be constructed as a three-way intersection, with Morgan Ranch Arterial forming the stop-sign controlled eastbound third leg; and
- New intersection at Morgan Ranch Arterial and E. Glenwood Avenue, to be constructed as a three-way intersection, with westbound E. Glenwood realigned to form the third stop-sign controlled southbound leg. Eastbound E. Glenwood Avenue should be realigned in the east-west direction to connect directly to the proposed Morgan Ranch Arterial.

### 3.15.2 ENVIRONMENTAL SETTING

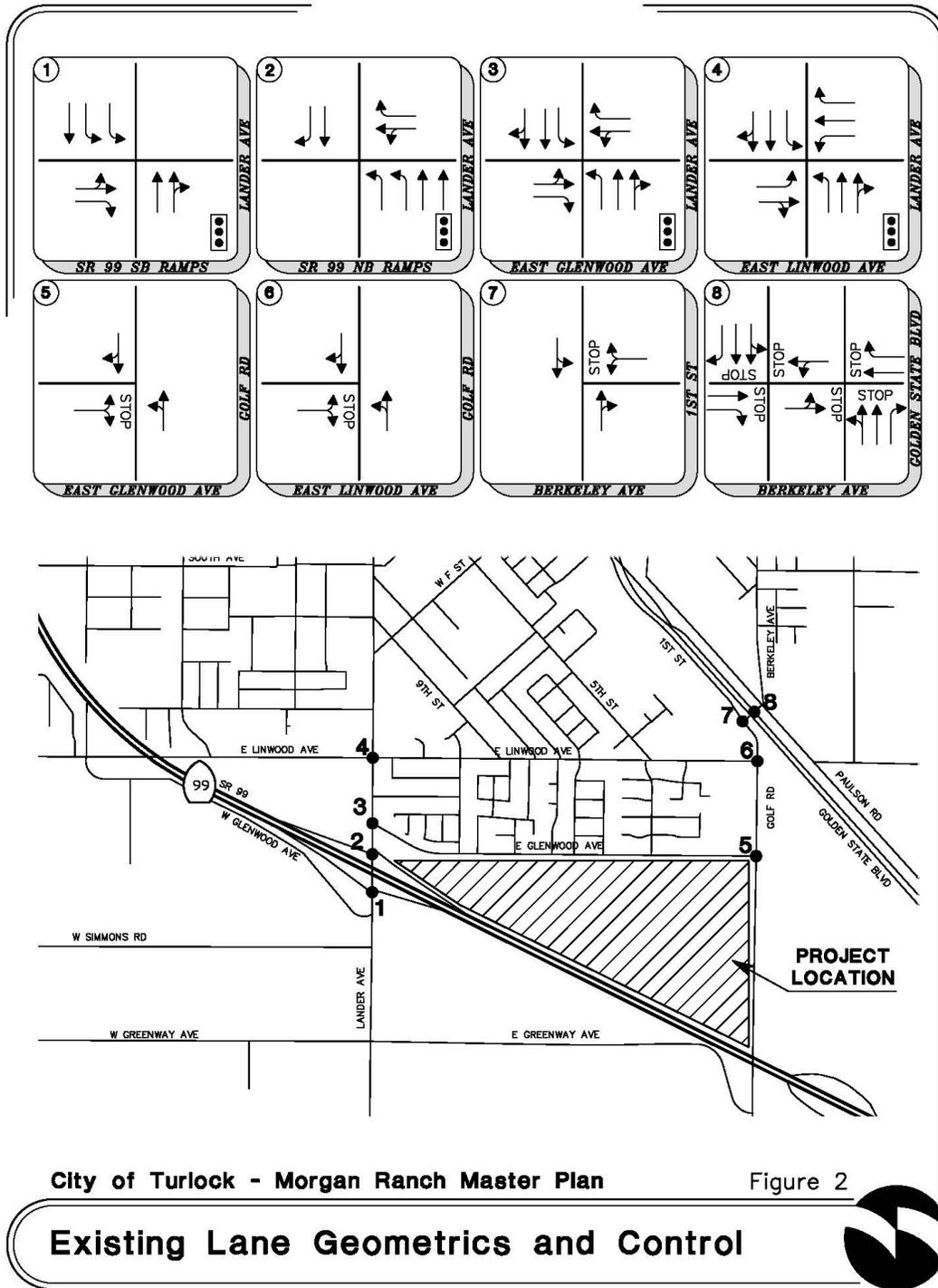
#### *Existing Roadway Network*

Turlock is located along State Route 99 (SR 99), approximately 15 miles south of Modesto and approximately 25 miles north of Merced. SR 99 is the primary north-south State highway providing access to Turlock as a whole, as well as connecting the city with other parts of the Central Valley and the state. The proposed project study area includes 11 intersections, including one planned roundabout, and five road segments. Turlock falls under the jurisdiction of Caltrans District 10. The roadways described below provide primary circulation within the vicinity of the Morgan Ranch project. The proposed project location, study intersections, and study road segments are illustrated in Figure 3.15-1 and listed in Section 3.15.4. The existing lane configurations and intersection control at the study intersections are illustrated in Figure 3.15-2. The major roadways in the study area are described below.

Turlock's roadway system is based on a hierarchy of street types, known as functional classifications. These classifications are designed to provide access to current and future development and to maintain acceptable levels of service throughout the city. A route's design, including the number of lanes needed, is determined both by its classification and the projected traffic level on the street generated by existing and new land uses.

**Freeways** provide for intra- and inter-regional mobility, generally having four to six lanes. Access is restricted primarily to arterials via interchanges. State Route 99 is the only freeway in the project area.

**State Route 99 (SR 99)** is a major state freeway facility that traverses in the north-south direction through Central and Northern California. SR 99 serves as the principal inter-regional auto and truck travel route that connects the Central Valley population centers, including the cities of Stockton, Modesto, Merced, and Fresno within the Sacramento urban area to the north and the Los Angeles/Bakersfield urban basin to the south. SR 99 provides the primary connection between the cities of Modesto and Turlock within Stanislaus County. SR 99 serves as a major commuter route providing vital north-south circulation within the city of Turlock. SR 99 has a general six-lane divided freeway type cross-section with posted speed limits of 65 mph within Turlock City limits. SR 99 forms a full-access interchange with SR 165/Lander Avenue immediately west of the Morgan Ranch project area.



**EXISTING LANE CONFIGURATIONS AND INTERSECTION CONTROL**

**Figure 3.15-2**

**Expressways** provide for movement of through traffic both within the city and to other nearby regional locations. Typically, direct access is not provided to adjacent land uses. Expressways generally range from two to four lanes, with some six-lane segments near freeway interchanges.

**Golden State Boulevard**, also referred to as “Old Highway 99,” is a four- to six-lane divided expressway/arterial facility that runs parallel to both SR 99 and a major north-south Union Pacific Railroad mainline. Golden State Boulevard represents a major arterial route within the city and connects to SR 99 at both ends. In the project area, Golden State Boulevard represents an important link from its southern interchange at SR 99 to the majority of Turlock to the north.

**Arterials** collect and distribute traffic from freeways and expressways to collector streets and vice versa. Major arterials in Turlock are four lane facilities, while minor arterials are two lane facilities.

**State Route 165 (SR 165)/Lander Avenue** (within Turlock city limits) is a major arterial in the project area. This State highway facility traverses north-south through Merced and Stanislaus counties and also intersects with Interstate 5 (I-5), approximately 10 miles south of the town of Los Banos. SR 165 intersects with SR 99 in Turlock at its northern terminal. SR 165 becomes Lander Avenue north of the SR 165 and SR 99 interchange at the western boundary of the project area. Lander Avenue is a major four-lane divided arterial traversing north-south through central Turlock. Lander Avenue is the primary north-south access to the western portion of the project site.

**Collectors** provide a link between residential neighborhoods and arterials, and are typically two lane facilities. They usually include on-street parking and bicycle lanes, and provide access to adjacent properties, so that driveway access is not restricted but should be discouraged. This roadway classification is intended to funnel traffic from local streets to arterials and expressways.

**Linwood Avenue** is a principal east-west collector that currently serves the southern portion of the city. This roadway has a general two-lane cross-section and provides a connection between areas east of SR 99 in the southern portion of the city to areas west of SR 99.

**East Glenwood Avenue** is a two-lane connector traversing in the east-west direction and represents the primary access road and northern boundary to the proposed development property. E. Glenwood Avenue connects to Lander Avenue to the west and Golf Road to the east.

**Golf Road** is a two-lane, north-south collector located on the eastern boundary of the project, and represents the primary access road to the proposed development property. To the north, Golf Road becomes First Street, which intersects with Berkeley Avenue, a principal northwest-southeast arterial that provides access into central Turlock.

#### **Existing Traffic Volumes**

Existing AM and PM peak hour traffic volume counts (turning movements) were conducted by OMNI-MEANS in March 2007 at the study intersections and roadway segments listed above.

Typically, traffic counts older than three years are not considered current for the purposes of traffic impact study baseline conditions. However, statewide traffic levels have come to a plateau and in some cases decreased since that time. A memorandum, which summarized “spot” 2012 traffic counts at selected locations, dated, March 28, 2012 by OMNI-MEANS confirms that 2012 traffic volumes were generally lower than 2007 traffic volumes in the Study Area. From this assessment, 2007 counts were used at earlier key intersections to provide a reasonably conservative estimate of baseline conditions for the traffic study.

The AM peak hour is defined as the one-hour of peak traffic flow (which is the highest total volume count over four consecutive 15-minute count periods) counted between 7:00 AM and 9:00 AM on a typical weekday. The PM peak hour is defined as the one-hour of peak traffic flow (which is the highest total volume count over four consecutive 15-minute count periods) counted between 4:00 PM and 6:00 PM on a typical weekday. For the roadway segments, the daily traffic counts obtained over a continuous 24-hour period (and recorded at 15-minute intervals) on a typical weekday were reported as the average daily traffic (ADT).

**Existing-Conditions Intersection LOS and Signal Warrant Analysis**

Existing AM and PM peak hour intersection traffic operations were quantified utilizing the existing traffic volumes and the existing intersection lane geometrics and control. The results of the existing-conditions intersection LOS analyses and the peak-hour traffic signal warrants analyses are summarized in Table 3.15-2.

As indicated in the table, all study intersections are currently operating at acceptable LOS “D” or better on a daily basis with the existing capacity configurations.

**Table 3.15-2  
Intersection Analysis Summary – Existing Conditions**

Intersection	Control	Target	A.M. Peak Hour			P.M. Peak Hour		
			LOS	Delay (sec)	Signal Warrant	LOS	Delay (sec)	Signal Warrant
Lander Avenue/SR 99 SB Ramps	Signal	D	C	21.0	-	C	25.0	-
Lander Avenue/SR 99 NB Ramps	Signal	D	B	16.5	-	B	14.3	-
Lander Avenue/E. Glenwood Ave.	Signal	D	C	21.0	-	C	20.3	-
Lander Avenue/Linwood Ave.	Signal	D	C	23.5	-	C	23.4	-
Golf Road/E. Glenwood Ave.	TWSC	D	B	10.5	No	B	11.4	No
Golf Road/Linwood Ave.	TWSC	D	C	19.2	No	C	19.1	No
1 <sup>st</sup> Street/Berkeley Ave.	TWSC	D	C	17.2	No	C	22.7	No
Golden State Blvd/Berkeley Ave.	AWSC	D	C	16.6	No	C	17.0	No

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2013.

**Existing Conditions Road Segment Analyses**

Existing daily roadway segment traffic operations have been quantified utilizing roadway ADT-based LOS thresholds described earlier. Table 3.15-3 contains a summary of the existing roadway segment LOS conditions.

**Table 3.15-3  
Existing Conditions: Roadway Segment Levels of Service**

<b>Roadway Segment</b>	<b>Capacity Configuration</b>	<b>Target</b>	<b>ADT</b>	<b>LOS</b>
Lander Ave., from SR 99 to E. Glenwood Ave.	Four-Lane Divided Arterial	D	19,600	A
Lander Ave., from E. Glenwood Ave. to Linwood Ave.	Four-Lane Divided Arterial	D	19,900	A
E. Glenwood Ave., from Lander Ave. to Golf Road	Two-Lane Collector	D	2,300	A
Golf Road, from E. Glenwood Ave. to Linwood Ave.	Two-Lane Collector	D	4,300	A
Golf Road, from E. Glenwood Ave. to SR 99 Overcross	Two-Lane Collector	D	2,900	A

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2013.

Roadway segments are also operating at acceptable levels of service, or LOS “D” or better on a daily basis with the existing capacity configurations.

Issues raised by the City of Turlock as significant concerns are the neighborhood traffic capacity and safety impacts to E. Glenwood Avenue. This two-lane collector is more accurately classified as a local residential road and has existing single-family residences that front the road. The impact of traffic volumes along E. Glenwood Avenue should not be quantified by the capacity-based criteria presented by HCM 2000 alone, but should also consider the impacts of traffic speed and volume on pedestrian safety and area noise levels. Traffic calming concepts consider a “livability” limit of 3,000 vehicles per day as the maximum traffic volume on a residential roadway before residents begin to consider traffic volumes “excessive” or “unsafe.” The diversion of existing traffic along E. Glenwood Avenue is projected to result in noise levels and safety conditions within acceptable limits for residents occupying the existing residential units fronting E. Glenwood Avenue.

**Existing Transit Service**

Bus service is not currently provided to the proposed project site.

**Existing Bicycle and Pedestrian Facilities**

The Turlock General Plan classifies bicycle facilities as follows:

- Class I – Off-Street Path: Dedicated and paved pathway right-of-way separated from vehicle traffic;
- Class II – On-Street Lanes: Paved dedicated bicycle lanes that are striped next to motorized traffic lanes; and
- Class III – On-Street Route: Bike facilities share street and include signage and arrow only.

Bicycle and pedestrian facilities do not currently exist in the vicinity of the project site.

**Airports**

Turlock Airpark is bounded by State Highway (SR) 99 to the north, Lander Avenue to the east, and East Greenway Avenue to the south. The proposed Morgan Ranch Master Plan is

immediately north of SR 99 and north to northeast of the Airpark. Turlock Airpark is a private airport, with a single runway that is 2,075 feet long and 60 feet wide with a load bearing capacity of 4,000 pounds for single-wheel aircraft. The Airpark averages fewer than 10 aircraft operations per week and has 12 single engine aircraft and 20 ultra lights based on the field.

The runways, designated as 13 and 31, are oriented north-northwest to south-southeast. The western regional climatic center reports annual wind for this area prevailing from the northwest. This would result in the majority of flights taking off and landing from south to north, and flight traffic patterns to the north, south and west of the airport. Further discussion is provided in Chapter 3, Section 3.8 of this EIR.

### **3.15.3 REGULATORY SETTING**

#### ***Federal***

#### **FEDERAL CLEAN AIR ACT**

The federal Clean Air Act and foreseeable legislation, requires that the Regional Transportation Plan integrate transportation and air quality during the planning process. The 1990 California Clean Air Act (CCAA) Amendment requires the following stipulations in order to receive federal funding:

- Establish a permitting program that achieves no net increase in stationary source emissions;
- Develop a strategy to reduce vehicle trips, use and miles traveled;
- Increase average vehicle ridership to 1.5 persons per vehicle during commute hours;
- Establish Best Available Retrofit Control Technology (BARCT) requirements for all permitted sources; and
- Development of indirect and area source programs.

Failure to meet federal and State requirements of the CAA may result in the following disciplinary actions:

- Limitations on the use of federal funds for highway construction;
- Cut off of federal grants for construction of sewage treatment plants; and
- Prohibition of development of new stationary sources of air pollution.

**State**

**CALTRANS**

The Caltrans *Guide for the Preparation of Traffic Impact Studies*, dated December 2002, indicates that Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State facilities (e.g., SR99).

On State facilities a significant impact is recognized if a proposed project will decrease the LOS below C or if a project will exacerbate an existing intersection operating at LOS D, E, or F by decreasing the LOS at the intersection.

***SB 375***

Following the passage of Assembly Bill 32 (AB 32) – The California Global Warming Solutions Act of 2006, which specifies that by the year 2020, greenhouse gas (GHG) emissions within California must be at 1990 levels. Senate Bill 375 (SB 375) – The Sustainable Communities and Climate Protection Act of 2008 – was signed into law as the framework for achieving greenhouse gas emissions reductions from land use and transportation planning.

SB 375 includes four primary findings related to the RTP/SCS development process:

- That the California Air Resources Board (CARB) develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including Fresno COG;
- That the Stanislaus Council of Governments (StanCOG), during the next RTP update (2014) is required to prepare an SCS that specifies how the GHG emission reduction target set by ARB will be achieved. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by StanCOG;
- Streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the StanCOG SCS or APS (as determined by CARB) to achieve regional GHG emissions reduction target; and
- Requires that StanCOG conduct the Regional Housing Needs Assessment (RHNA) process consistent with the RTP/SCS process and that the RHNA allocations be consistent with the development pattern in the SCS.

***AB 1358 – California Complete Streets Act***

On September 30, 2008 Governor Arnold Schwarzenegger signed Assembly Bill 1358, the California Complete Streets Act. The Act states: “In order to fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health by encouraging physical activity, transportation

planners must find innovative ways to reduce vehicle miles traveled (VMT) and to shift from short trips in the automobile to biking, walking and use of public transit.”

The legislation impacts local general plans by adding the following language to Government Code Section 65302(b)(2)(A) and (B):

- (A) Commencing January 1, 2011, upon any substantial revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan; and
- (B) For the purposes of this paragraph, “users of streets, roads, and highways” means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.

### ***California State Aeronautics Act***

The State Aeronautics Act, Public Utilities Code (PUC) Section 21001, et seq. is the foundation for the California Department of Transportation’s Division of Aeronautics aviation policies. The Division issues permits for and annually inspects hospital heliports and public-use airports, makes recommendations regarding proposed school sites within 2 miles of an airport runway, and authorizes helicopter-landing sites at/near schools. Aviation system planning provides for the integration of aviation into transportation system planning on a regional, statewide, and national basis. The Division administers noise regulation and land use planning laws that foster compatible land use around airports and encourages environmental mitigation measures to lessen noise, air pollution, and other impacts caused by aviation. The Division also provides grants and loans for safety, maintenance, and capital improvement projects at airports.

### ***Regional***

## **REGIONAL TRANSPORTATION PLAN**

The adopted Regional Transportation Plan (RTP) (2011) establishes regional transportation policy for the Stanislaus County region. The RTP focuses on achieving a coordinated and balanced multimodal transportation system, while maintaining the integrity of the existing system. The RTP includes projects located throughout the Stanislaus County region for all forms or modes of transportation, including automobiles, transit, nonmotorized (including bicycle), passenger rail, freight, and aviation facilities. The RTP reflects a fiscally constrained environment and identifies those projects (considered as Tier 1 projects) that have a secure or approved funding source.

*Local*

**CITY OF TURLOCK MUNICIPAL CODE**

Title 7 of the City of Turlock Municipal Code addresses the general provisions for sidewalks, streets, parkways, and underground utilities. Title 4 addresses traffic and circulation.

**CITY OF TURLOCK 2030 GENERAL PLAN**

The most applicable policies of the City’s General Plan with regard to the proposed project and traffic/circulation are listed below:

Policies not included in the TIS have Policy # in Red. These policies may address ROWs, medians, bike routes, public transit.

**Policy 2.5-h Transit and pedestrian accessibility from housing.** Work with developers of affordable and multifamily housing to encourage the construction of transit-oriented and pedestrian-oriented amenities and appropriate street improvements that encourage walking and transit use.

**Policy 3.2-j Consistency with General Plan circulation diagram.** In order to ensure connectivity to the existing city, through new neighborhoods, and to the freeway, collector and arterial streets in master plan areas must be designed, and sufficient right-of-way reserved, to comply with the citywide circulation plan described in Chapter 5. Minor deviations may be approved provided that they have no negative impact on the overall circulation network.

**Policy 3.2-1 Limit Cul-de-sacs.** Cul-de-sacs, hammerheads, or similar dead-end streets shall not make up more than 10 percent of the total length of all streets in a master plan area. Pedestrian connections through the ends of cul-de-sacs to adjacent through streets are encouraged, especially where such pathways would facilitate connections to parks or schools.

**Policy 3.2-n Pedestrian and bicycle connections.** Continuous and convenient pedestrian and bicycle connections shall be provided from every home in a master plan area to the nearest neighborhood center, school, and park. Pedestrian connections may be in the form of sidewalks, linear parks, or Class I multi-use trails. Bicycle connections may be in the form of Class I, Class II, or Class III bicycle facilities (refer to Section 5.3), and local streets.

**Policy 5.2-a A safe and efficient roadway system.** Promote a safe and efficient roadways system for the movement of both people and goods.

**Policy 5.2-b Implement planned roadway improvements.** Use Figure 5-2: Circulation System, and Table B-1 in Appendix B, Major Circulation Improvements, to identify, schedule, and implement roadway improvements as development occurs in the future; evaluate future development and roadway improvement plans against standards for the classifications as set forth in Tables 5-4, 5-5, and 5-6.

- Policy 5.2-c Complete streets.** Maintain and update street standards that provide for the design, construction, and maintenance of “Complete Streets.” Turlock’s Complete Streets shall enable safe, comfortable, and attractive access for all users: pedestrians, motorists, bicyclists, and transit riders of all ages and abilities, in a form that is compatible with and complementary to adjacent land uses, and promotes connectivity between uses and areas.
- Policy 5.2-d Design for street improvements.** The roadway facility classifications indicated on the General Plan circulation diagram (Figure 5-2) shall be the standard to which roads needing improvements are built. The circulation diagram depicts the facility types that are necessary to match the traffic generated by the General Plan 2030 land use buildout, and therefore represent the maximum standards to which a road segment or intersection shall be improved. LOS is *not* used as a standard for determining the ultimate design of roadway facilities.
- Policy 5.2-e: Use of existing facilities.** Make efficient use of existing transportation facilities, and improve these facilities as necessary in accordance with the circulation diagram.
- Policy 5.2-g Reduce Vehicle Miles Traveled.** Through layout of land uses, improved alternate modes, and provision of more direct routes, strive to reduce the total vehicle miles traveled.
- Policy 5.2-h Circulation System Enhancements.** Maintain projected levels of service where possible, and ensure that future development and the circulation system are in balance. Improve the circulation system as necessary, in accordance with the circulation diagram and spacing/access standards, to support multimodal travel of all users and goods.
- Policy 5.2-r Follow circulation plan diagram:** Locate freeways, expressways, and arterials according to the general alignment shown in the Circulation Plan Diagram. Slight variation from the depicted alignments for collectors will not require a General Plan amendment.
- Policy 5.2-s Trigger for improvements.** Require improvements to be constructed where adequate ROW is available and impacts to adjacent land uses can be avoided or adequately mitigated to General Plan standards when LOS is projected to drop below LOS D (on an average daily trips basis).
- Policy 5.2-t Follow adopted City standards.** Build freeways, expressways, arterials, and collector streets in accordance with adopted city standards. Where these standards deviate from those set forth in the General Plan, amend the city standards to be consistent with the General Plan.
- Policy 5.2-u Roundabouts.** Roundabouts may be used in place of signalized intersections on any roadway facility or intersection type. Roundabouts are particularly encouraged at the intersection of two collector streets.

- Policy 5.2-aa Exceptions to Standards.** In infill areas, where existing rights of way may not conform to the roadway standards set forth in the General Plan, but where improvements are necessary, reasonable deviations from roadway standards may be allowed by the City Engineer.
- Policy 5.2-ab Downtown exempted from LOS trigger.** Exempt Downtown from LOS trigger for improvements in order to encourage infill development, the creation of a pedestrian friendly urban design character, and the densities and intensities of development necessary to support transit and local business development. Development decisions Downtown should be based on community design and livability goals, rather than traffic LOS. Downtown is defined by the Downtown designation on the Land Use Diagram (Figure 2-2).
- Policy 5.2-ac Impacts of new development.** No new development will be approved unless it can show that required service standards (accessibility, spacing and capacity in the circulation diagram and in Section 5.2) are provided on the affected roadways.
- Policy 5.2-ag New development pays fair share.** Continue to require that new development pay a fair share of the costs of street and other local transportation improvements based on traffic generated and impacts on service levels. New development in unincorporated areas that benefit from Turlock’s transportation infrastructure shall also pay to support the system, through the Area of Influence fee (see Policy 5.2-p).
- Policy 5.2-ar Right of Way consistency.** To the extent possible, new roadways shall be designed so that they maintain a consistent right of way along the length of the facility, regardless of adjacent land use changes. In other words, for example, a two-lane collector that passes through a residential area and then a commercial area shall not change width as the land uses change.
- Policy 5.3-a Promote walking and bicycling.** Promote walking and bike riding for transportation, recreation, and improvement of public and environmental health.
- Policy 5.3-c Develop a safe and efficient non-motorized circulation system.** Provide safe and direct pedestrian routes and bikeways between places.
- Policy 5.3-e Provision of bicycle facilities.** Facilities for bicycle travel (Class I bike/multiuse paths; Class II bike lanes, and Class III bike routes) shall be provided as shown on Figure 5-3. Bike lane width shall follow the standards in tables 5-4 and 5-5. In cases where existing right of way constraints limit development of Class II facilities, Class III signage and demarcation may be permitted at the discretion of the City Engineer. Deviations from these standards and from the routing shown on the diagram shall only be permitted at the discretion of the City Engineer.
- Policy 5.3-h Universal design.** Provide pedestrian facilities that are accessible to persons with disabilities and ensure that roadway improvement projects address accessibility and use universal design concepts.

- Policy 6.3-e Block size and maximum street spacing.** Streets in neighborhoods should be designed to maximize connectivity for automobiles, cyclists, and pedestrians. Maximum spacing between local streets, or intersections of local streets with larger roads, shall be 660 feet. The preferable, typical block size in a residential neighborhood is in the range of 200 by 600 feet. As a condition of project approval, require circulation patterns of all residential and neighborhood centers to conform to maximum spacing between through-streets (exclusive of alleys), as depicted in Figure 6-5 and Section 5.2, unless access conditions and standards prevent their attainment. Culs-de-sac are generally discouraged.
- Policy 6.7-f Support transit.** Ensure that neighborhoods are designed to support transit stops in proximity to neighborhood centers and/or clusters of higher density residences.
- Policy 6.7-j Multi-modal access and movement.** Require new projects to facilitate pedestrian and bicycle movement and aid transit.
- Policy 8.2-m Pedestrian-Oriented Site Design.** Orient development to encourage pedestrian and transit accessibility. Strategies include locating buildings and primary entrances adjacent to public streets; placing parking at the rear of sites or in structures above retail; and providing clear and direct pedestrian paths across parking areas.

## FUNDING FOR TRANSPORTATION PROJECTS

The City of Turlock will use a combination of development impact fees, community facilities district fees, and landscape and lighting district fees to fund the construction and maintenance of the public facilities in the Plan Area. Many of these fee programs serve as mitigation for impacts caused by the new development within the Plan Area; others pay for the backbone infrastructure and ongoing services required to support development in the master plan area.

Development Impact Fees are one-time charges applied to new development, redevelopment, expansions, and tenant improvements. The fees are collected by the City at the issuance of a building permit to provide funding for the improvement and expansion of City infrastructure, such as streets, water, parks, public safety facilities, and other local government facilities. Each quarter the City updates the development impact fee schedules to account for the increase in the cost of infrastructure construction.

Turlock has a three-tier development impact fee system. There are fees that apply consistently to any new development in the city, fees that apply based on which zone of the city the development is located in, and fees that apply only to development in a master plan area. City-wide impact fees fund public utilities, and do not typically include local and collector streets. Fees are used to support transportation facilities, police and fire facilities, and general government facilities. Fees based on the master plan area typically cover costs for major road improvements and new water and sewer facilities that are specific to the needs of the master plan area. As was done with other master plans in Turlock, an infrastructure analysis and impact fee study will be prepared immediately following adoption of the Morgan Ranch Master Plan to

determine the exact facilities that will be included in the Master Plan fee program. Likely facilities to be included are:

- Morgan Ranch Arterial;
- Golf Road Widening;
- New traffic signals in the Plan Area; and
- New off-site traffic signals and road widening, as determined by the Traffic Impact Study and Environmental Impact Report.

Consistent with 2030 General Plan policies, no mitigation measures besides payment of appropriate development impact fees are required for the proposed Plan Area under General Plan Buildout Conditions.

#### **3.15.4 METHODOLOGY**

##### ***Study Area Roadways and Intersections***

The study intersections and road segments used in the traffic impact analysis were determined by OMNI-MEANS in consultation with the City of Turlock and the California Department of Transportation (Caltrans). The study locations were determined considering various factors, such as the volume of project traffic expected, the volume of background traffic expected, and the existing or anticipated future level of service. The analyses were performed in general conformance with the Caltrans Guide for the Preparation of Traffic Impact Studies (2002).

The TIS analyzed the following intersections:

- SR 99 SB Ramps (State Route 99)/Lander Avenue;
- SR 99 NB Ramps/Lander Avenue;
- Lander Avenue/E. Glenwood Avenue;
- Lander Avenue/Linwood Avenue;
- E. Glenwood Avenue/Golf Road;
- E. Linwood Avenue/Golf Road;
- Berkeley Road/First Street;
- Berkeley Road/Golden State Boulevard;
- Morgan Ranch Arterial/Golf Road (analyzed under Build-Out conditions); and
- Morgan Ranch Arterial/E. Glenwood Avenue (analyzed under Build-Out conditions).

The TIS also analyzed the following street segments on a daily volume-to-capacity ratio basis in coordination with the City of Turlock and Caltrans:

- Lander Avenue, from SR 99 SB ramps to E. Glenwood Avenue;
- Lander Avenue, from E. Glenwood Avenue to Linwood Avenue;
- E. Glenwood Avenue, east of Lander Avenue;
- Golf Road, from E. Glenwood Avenue to Linwood Avenue; and
- Golf Road, south of E. Glenwood Avenue.

The locations of the study intersections and road segments are presented in Figure 3.15-1.

Three traffic scenarios were analyzed, as follows: *Existing Conditions*, *Existing Plus Project Conditions*, and *Cumulative General Plan Buildout Conditions*. Cumulative traffic volumes are forecasted using the recently updated City of Turlock General Plan, assuming full build-out of areas within both the city and the adopted specific plans outside the city limits. This scenario simulates the future traffic scenario with the project-generated trips associated with full development of Morgan Ranch.

Existing AM and PM peak hour traffic volume counts (turning movements) were conducted in 2007; although these data are over three years old, because traffic volumes have not increased since this time, the data remain valid.

Generally-accepted traffic engineering principles and methods were employed to estimate the amount of traffic expected to be generated by the project and to analyze the traffic conditions expected to exist in the future.

The project is expected to create significant impacts or contribute to cumulative impacts as various stages of development occur. The project will be required to mitigate the significant impacts as described herein. Impacts after mitigation are found to be less than significant as determined by the TIS.

The operation of the internal project streets has been analyzed based on project assumptions. The City of Turlock may require additional traffic analyses focused on internal streets and site access intersections when tentative maps and/or site plans are submitted to further subdivide and/or develop particular parcels created by the recording of the Final Map for Vesting of the Tentative Tract.

Abbreviations and acronyms used in the TIS that may be used in the text of this EIR are listed in Table 3.15-4.

**Level of Service**

The Transportation Research Board *Highway Capacity Manual*, 2010, (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.”

Automobile mode LOS characteristics for both unsignalized and signalized intersections are presented in Tables 3.15-5 and 3.15-6. Automobile mode LOS characteristics for uninterrupted flow two-lane highways are presented in Table 3.15-7.

**Table 3.15-4  
Common Transportation Abbreviations and Acronyms**

<b>Abbreviations and Acronyms</b>			
NB	Northbound	SB	Southbound
EB	Eastbound	WB	Westbound
NBL	Northbound left	LOS	Level of service
NBR	Northbound right	OWS	One-way stop control
SBL	Southbound left	TWSC	Two-way stop control
SBR	Southbound right	AWSC	All-way stop control
EBL	Eastbound left	HCM	Highway Capacity Manual
EBR	Eastbound right	PHF	Peak Hour Factor
WBL	Westbound left	sec	seconds
WBR	Westbound right	TWLTL	Two-way left-turn lane
SR –	State Route	SOI	Sphere of Influence
TGH	Trip Generation Handbook	TAZ	Traffic Analysis Zone
ITE	Institute of Transportation Engineers	n/r	Not required
Int	Interchange	U	Undivided
FAR	Floor Area Ratio	DU	dwelling units
sq. ft.	square feet	DNE	Does not exist
ADT	Average Daily Traffic	-	-
GHG	Greenhouse Gas	ARB	Air Resources Board
RTP	Regional Transportation Plan	SCS	Sustainable Communities Strategy
VMT	Vehicle Miles Traveled	TIAR	Transportation Impact Analysis Report
StanCOG	Stanislaus County Council of Fresno County Governments	CMUTCD	California Manual on Uniform Traffic Control Devices

1/1 – Peak hour traffic signal warrant satisfied for condition in which both the major and minor streets have one lane per approach.  
 2/1 – Peak hour traffic signal warrant satisfied for condition in which the major street has two lanes per approach and the minor street has one lane per approach.  
 2/2 – Peak hour traffic signal warrant satisfied for condition in which both the major and minor streets have at least two lanes per approach.

Source: Department of Transportation Caltrans, 2013; OMNI-MEANS, Ltd. Engineers and Planners, 2013.

**Table 3.15-5  
Level of Service Characteristics for Unsignalized Intersections**

<b>Level of Service</b>	<b>Average Vehicle Delay (seconds)</b>
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Source: Transportation Research Board, 2010.

**Table 3.15-6  
Level of Service Characteristics for Signalized Intersections**

Level of Service	Description	Average Vehicle Delay (seconds)
A	Volume-to-capacity ratio is low. Progression is exceptionally favorable or the cycle length is very short.	<10
B	Volume-to-capacity ratio is low. 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 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

Source: Transportation Research Board, 2010.

**Table 3.15-7  
Level of Service Characteristics for Roadways**

Level of Service	Description
A	High operating speeds with a small amount of platooning.
B	Speed reductions are present and platooning is noticeable.
C	Most vehicles traveling in platoons with speeds noticeably curtailed.
D	Platooning increases significantly.
E	Demand approaching capacity. Speeds seriously curtailed.
F	Demand exceeds capacity and heavy congestion exists.

Source: Transportation Research Board, 2010.

The Caltrans *Guide for the Preparation of Traffic Impact Studies*, dated June 2001, indicates that Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D. On State facilities a significant impact is recognized if a proposed project will decrease the LOS below C or if a project will exacerbate an existing intersection operating at LOS D, E, or F by decreasing the LOS at the intersection.

The City of Turlock no longer uses LOS as a standard for determining roadway performance and planning improvements. Moreover, in support of the new Complete Streets legislation and SB 375, the 2030 General Plan moves away from the LOS standard as this measure has a tendency to promote urban sprawl. Rather, roads will be constructed in accordance with the designs specified in the Circulation Diagram (Figure 5-2 of the General Plan) and with the improvements detailed in the General Plan and consistent with the access, spacing, and intersection configurations outlined therein.

For purposes of the TIS, and consistent with City and Caltrans policies, LOS “D” has been taken as the minimum acceptable LOS standard at critical study intersections and roadway segments falling within City and State rights-of-way. Appropriate circulation, capacity and/or control

improvements have been identified for instances when study area facilities are projected to operate below acceptable standards.

### INTERSECTION AND ROADWAY LOS METHODOLOGIES

The LOS were calculated for all intersection control types using the methods documented in the Transportation Research Board Publication *Highway Capacity Manual, Fourth Edition, 2000*. For signalized intersections and All-Way-Stop-Controlled (AWSC) intersections, the intersection delays and LOS are average values for all intersection movements. For Two-Way Stop-Controlled (TWSC) intersections, the intersections, the intersection delays and LOS are representative of those for the worst-case movement. LOS definitions for different types of intersection controls are outlined in Table 1 of the TIS and the average daily traffic based roadway LOS thresholds are shown in Table 2 of the TIS. The existing AM and PM Peak Hour LOS and the Target LOS are shown in Table 3.15-8 for each intersection in and around the Plan Area. Table 3.15-9 provides the existing and target LOS for each roadway segment.

**Table 3.15-8  
Minimum Acceptable Intersection Levels of Service**

Intersection	Signal Type	LOS		
		AM Peak	PM Peak	Target
Lander Avenue/SR 99 SB Ramps	Signal	C	C	D
Lander Avenue/SR 99 NB Ramps	Signal	B	B	D
Lander Avenue/E. Glenwood Avenue	Signal	C	C	D
Lander Avenue/Linwood Avenue	TWSC	C	C	D
Golf Road/E. Glenwood Avenue	TWSC	B	B	D
Golf Road/Linwood Avenue	TWSC	C	C	D
1st Street/Berkeley Avenue	TWSC	C	C	D
Golden State Blvd/Berkeley Avenue	TWSC	C	C	D

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2013.

**Table 3.15-9  
Minimum Acceptable Road Segment Levels of Service**

Roadway Segment	Capacity Configuration	LOS	
		Existing	Target
Lander Ave., from SR 99 to E. Glenwood Ave.	Four-lane Divided Arterial	A	D
Lander Ave., from E. Glenwood Ave. to Linwood Ave.	Four-lane Divided Arterial	A	D
E. Glenwood Ave. from Lander Ave. to Golf Road	Two-Lane Collector	A	D
Golf Road from E. Glenwood Ave. to Linwood Ave.	Two-Lane Collector	A	D
Golf Road from E. Glenwood Ave. to SR 99 Overcrossing	Two-Lane Collector	A	D

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2013.

### TRAFFIC SIGNAL WARRANTS

A supplemental traffic signal “warrant” analysis was completed to determine whether “significance” should be associated with unsignalized intersection operations. The term “signal warrants” refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the need for installation of a traffic signal at an otherwise

unsignalized intersection. This study has employed the signal warrant criteria presented in the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD) for all study intersections. The signal warrant criteria are based upon several factors, including the volume of vehicular and pedestrian traffic, frequency of accidents and location of school areas.

If one or more of the signal warrants are met, signalization of the intersection may be appropriate. However, a signal likely should not be installed if none or few of the warrants are met since the installation of signals may increase delays on the previously uncontrolled major street and may contribute to an increase in accidents. Specifically, this study utilizes the peak hour volume-based Warrant 3 as one representative type of traffic signal warrant analysis. Since Warrant 3 provides specialized warrant criteria for intersections with rural characteristics, study intersections which use these specialized criteria are clearly identified.

### **TRANSIT, BICYCLE, AND PEDESTRIAN FACILITIES CRITERIA**

A significant impact is determined if a proposed project would disrupt or impede existing or planned transit, bicycle, or pedestrian facilities. A significant impact is also determined if a proposed project does not connect to adjacent existing facilities or does not implement approved plans for these facilities. Finally, a significant impact is created if a project does not create a school route as described in the latest edition of the California Department of Transportation *California Manual on Uniform Traffic Control Devices for Streets and Highways* (CMUTCD).

#### **3.15.5 IMPACT EVALUATION CRITERIA**

According to Appendix G of the CEQA Guidelines, a project will normally have significant adverse impacts associated with traffic/transportation if it would:

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- e) Result in inadequate emergency access.

- f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.
- g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

**3.15.6 IMPACT ANALYSIS**

***Project Trip Generation***

Data provided in the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, are typically used to estimate the number of trips anticipated to be generated by proposed projects. The ITE Trip Generation is a standard reference used by jurisdictions throughout the country for the estimation of trip generation potential of proposed developments. Table 3.15-1 includes the proposed number and density of residential dwelling units and other land uses. The proposed project is estimated to build out 875 medium density residential units, 450 high-density units, 113,000 square feet of commercial space, and 11 acres for a public school. A detention basin and park are also planned.

Table 3.15-10 provides a listing of proposed land uses and summarizes the trip generation rates used to project the trip generation volumes from currently vacant lands within the project area. Residential dwelling unit quantities were taken from the project description. The commercial land use quantities were adjusted using a 25 percent Floor Area Ratio (FAR), a typical ratio used to reflect the actual retail sales floor area compared to the plot size.

**Table 3.15-10  
Project Trip Generation Rates**

Land Use Category (ITE Code)	Unit	Daily Trip Rate/Unit	AM Trip Rate/Unit			PM Trip Rate/Unit		
			Total	In%	Out%	Total	In%	Out%
Single Family Residential (ITE 210)	DU	9.52	0.75	25%	75%	1.01	63%	37%
Multi Family Residential (ITE 220)	DU	6.65	0.51	20%	80%	0.62	65%	35%
School	Site	1.29	0.33	55%	45%	0.24	45%	55%
Shopping Center (ITE 820, PRJ)	KSF	68.65	1.58	62%	38%	6.06	48%	52%
General Office Building (ITE 710)	KSF	20.26	2.75	88%	12%	5.94	17%	83%
County Park (ITE 412)	Acre	2.28	0.02	61%	39%	0.09	61%	39%

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2014.

Trip generation volumes were estimated based upon trip rate data presented in the ITE Publication. The trip generation volumes, which are derived by multiplying the trip generation rates with the proposed land use quantities are presented in Table 3.15-11.

**Table 3.15-11  
Proposed Project Trip Generation**

Land Use Description	Quantity in Units	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			Total	In	Out	Total	In	Out
<b>Project Buildout</b>								
Medium Density Residential	875 DU	8,330	656	164	492	884	557	327
High Density Residential	450 DU	2,993	230	46	184	279	181	98
Elementary School		387	100	55	45	71	32	39
Community Commercial	96.9 KSF	6,654	153	95	58	587	282	305
Office	16.3 KSF	331	45	40	5	97	16	81
Park	8.7 Acres	20	0	0	0	1	1	0
<b>Total Morgan Ranch</b>	1325 DU	11,323	886	210	676	1,163	738	425
<b>Residential</b>								
School Trip Matching	50%	194	50	28	22	35	16	19
Commercial Trip Matching	5%	566	44	11	34	58	37	21
<b>Morgan Ranch Commercial</b>	113.3 KSF	6,985	198	135	63	684	298	386
Internal Trip Matching Reduction	5%	566	44	34	11	58	21	37
Pass-by Trip Reduction	15%	963	23	15	8	94	42	52
<b>Net Trip Total</b>		<b>16,019</b>	<b>923</b>	<b>257</b>	<b>664</b>	<b>1,602</b>	<b>920</b>	<b>682</b>

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2014.

Notes: Remaining school trips are absorbed by nearby surrounding residential areas.

As shown in Table 3.15-11, build-out of the Morgan Ranch project site is estimated to result in approximately 16,019 daily, 923 AM peak hour, and 1,602 PM peak hour trips. The proposed Morgan Ranch GPA trips were checked and found consistent with build-out assumptions forecasted in the City of Turlock Travel Demand Model.

**Project Site Access**

The Morgan Ranch Specific Plan area will be accessed via both East Glenwood Avenue and a proposed new roadway, hereafter referred to as the “Morgan Ranch Arterial.” The creation of this new roadway was specifically designed to minimize traffic impacts to the neighborhood along the existing East Glenwood Avenue. East Glenwood Avenue will be realigned within the project area to intersect the new Morgan Ranch Arterial, to maintain existing traffic flow through existing neighborhood without increasing traffic. At project opening, Morgan Ranch Arterial will be constructed with roundabouts at East Glenwood Avenue and at the proposed extension of 5<sup>th</sup> Avenue through the project site. These are considered the major internal intersections of the project.

Ultimately, roundabouts will also be constructed at the intersections of Morgan Ranch Arterial and Golf Road, and at East Glenwood Avenue and Golf Road. The construction of these intersections is not considered a part of the proposed project, but they will be assumed to be constructed at buildout of the City’s circulation plan (Year 2030 conditions).

**1. Morgan Ranch Arterial / Golf Road** – This intersection should be constructed as a three-way intersection, with Morgan Ranch Arterial Extension forming the stop-sign controlled eastbound third leg. The intersection geometrics are as follows:

- Northbound Golf Road – One left turn lane, one through lane;
- Southbound Golf Road – One through-right turn lane; and
- Eastbound Morgan Ranch Arterial– One left turn lane, one through-right turn lane. Stop-sign controlled.

**2. Morgan Ranch Arterial / East Glenwood Avenue** - This intersection should be constructed as a three-way intersection, with westbound E. Glenwood Avenue realigned to form the third stop sign controlled southbound third leg. Eastbound E. Glenwood Avenue should be realigned in the east-west direction to connect directly to the proposed Morgan Ranch Arterial. The intersection geometrics are as follows:

- Southbound E. Glenwood Avenue – One left-turn lane, one right-turn lane. Stop sign controlled;
- Eastbound E. Glenwood Avenue – One left-turn lane, one through lane; and
- Westbound Morgan Ranch Arterial Extension – One through lane, one right turn lane.

**Impact #3.15.1 – Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.**

*[Evaluation Criteria (a)]*

**Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

*[Evaluation Criteria (b)]*

The TIS provides an analysis and discussion of the project impacts on existing AM and PM peak hour intersection and daily roadway segment operations, projected cumulative peak hour intersection and daily roadway segment operations with current general plan land uses and at the project site, and project-related improvements needed to mitigate project impacts at the study intersections and roadway segments, under conditions without and with the development of the proposed project.

***Existing Plus Project Conditions: Intersection Levels of Service***

The *Existing Plus Project Conditions: Intersection Levels of Service* listed in Table 3.15-12 adds the project-generated trips to the existing traffic volume counts to simulate a near-term traffic scenario with the project. The analysis was completed and is provided on page 20 of the TIS (Appendix I). Although analysis of this scenario identifies the extent of impacts of the project on its own without any other development, these conditions are generally not realistic as the project will require 10 or more years to complete, a time in which roads and intersections will be impacted by other future development. Although, with that said, for purposes of ensuring the EIR does not underestimate impacts, the EIR assumes full build-out by 2020.

**Table 3.15-12  
Existing Plus Project Conditions: Intersection Levels of Service**

Intersection	Control Type	Target LOS	A.M. Peak Hour			P.M. Peak Hour		
			Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
Lander Avenue/SR 99 SB Ramps	Signal	D	20.5	C	-	37.8	D	-
Lander Avenue/SR 99 NB Ramps	Signal	D	13.3	B	-	21.2	C	-
Lander Avenue/E. Glenwood Ave.	Signal	D	32.3	C	-	67.7	E	-
Lander Avenue/Linwood Ave.	Signal	D	22.9	C	-	25.9	C	-
Golf Road/E. Glenwood Ave.	TWSC	D	14.1	B	-	22.6	C	-
Golf Road/Linwood Ave.	TWSC	D	43.0	E	No	133.2	F	Yes
1 <sup>st</sup> Street/Golf Road.	TWSC	D	33.0	D	-	226.1	F	Yes
Golden State Blvd/Berkeley Ave.	AWSC	D	35.7	E	Yes	38.0	E	Yes
Arterial/Golf Road	TWSC	D	12.1	B	-	17.2	C	-
Morgan Ranch Arterial/E. Glenwood Avenue	RDBT	D	6.4	A	-	6.5	A	-

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2014.

Notes: RDBT= Roundabout, TWSC=Two Way Stop Control, AWSC=All Way Stop Control, LOS=Worst Case Movement's LOS for TWSC intersections, OVR=Overflow, Warrant=Caltrans Peak Hour Volume Based Signal Warrant.

As indicated in Table 3.15-12, the following intersections are projected to operate at unacceptable LOS during at least one peak hour period under *Existing Plus Project* Conditions; Intersection Levels of Service conditions:

- Lander Avenue/E. Glenwood Avenue (PM peak hour only);
- Golf Road/Linwood Avenue (AM and PM peak hour);
- First Street/Berkeley Avenue (AM and PM peak hour); and
- Golden State Boulevard/Berkeley Avenue (AM and PM peak hour).

All unsignalized intersections operating at unacceptable LOS are projected to meet MUTCD Peak Hour Volume Warrant-3 (Urban Areas) based upon at least one peak hour intersection traffic demand volume.

All recommended mitigation measures are discussed later in Section 3.15. Table 3.15-13 summarizes the recommended intersection improvements and mitigated LOS conditions.

**Table 3.15.13  
Existing Plus Project: Mitigated Intersection Levels of Service**

Intersection	Control Type	Target LOS	A.M. Peak Hour			P.M. Peak Hour		
			Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
Lander Avenue/SR 99 SB Ramps	Signal	D	-	-	-	-	-	-
Lander Avenue/SR 99 NB Ramps	Signal	D	-	-	-	-	-	-
Lander Avenue/E. Glenwood Ave.	Signal	D	-	-	-	51.5	D	-
Lander Avenue/Linwood Ave.	Signal	D	-	-	-	-	-	-
Golf Road/E. Glenwood Ave.	TWSC	D	-	-	-	-	-	-
Golf Road/Linwood Ave.	Signal	D	12.5	B	-	15.2	B	-
1 <sup>st</sup> Street/Berkeley Ave.	Signal	D	20.1	C	-	24.0	C	-
Golden State Blvd/Berkeley Ave.	Signal	D	41.3	D	-	36.8	D	-
Morgan Ranch Arterial/Golf Road	TWSC	D	-	-	-	-	-	-
Morgan Ranch Arterial/E. Glenwood Avenue	RDBT	D	-	-	-	-	-	-

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2014.

Notes: BDBT=Roundabout, TWSC=Two Way Stop Control, AWSC=All Way Stop Control, LOS=Worst Case Movement's LOS for TWSC intersections, OVR=Overflow, Warrant=Caltrans Peak Hour Volume Based Signal Warrant.

**Existing Plus Project Conditions: Roadway Levels of Service**

The *Existing Plus Project* conditions for the roadway LOS were quantified utilizing roadway ADT-based LOS thresholds presented in Table 2 of the TIS. Table 3.15-14 lists each roadway segment along with its capacity configuration and target LOS, as well as the ADT and resulting LOS for the *Existing Plus Project* conditions.

As indicated in Table 3.15-14, the E. Glenwood roadway segment, between Lander and Morgan Ranch Arterial is forecasted to operate with unacceptable LOS. The Morgan Ranch Arterial is forecasted to divert approximately 10,000 daily trips from E. Glenwood Avenue, which should alleviate traffic impacts for residents occupying the existing residential units fronting E. Glenwood Avenue.

**Table 3.15-14  
Existing Plus Project Conditions: Roadway Levels of Service**

Roadway Segment	Capacity Configuration	Target LOS	Average Daily Traffic (ADT)	LOS
Lander Avenue, from SR 99 to E. Glenwood Avenue	Four-Lane Divided Arterial	D	25,900	C
Lander Avenue, from E. Glenwood Avenue to Linwood Avenue	Four-Lane Divided Arterial	D	24,100	B
E. Glenwood Ave., from Lander Ave. to Morgan Ranch Arterial	Two-Lane Collector	D	12,900	F
E. Glenwood Avenue, from Morgan Ranch Arterial to Golf Road	Two-Lane Collector	D	3,500	A
Golf Road, from E. Glenwood Avenue to Linwood Avenue	Two-Lane Collector	D	9,800	D
Golf Road, from E. Glenwood Avenue to SR 99 Overcrossing	Two-Lane Collector	D	8,300	C
Morgan Ranch Arterial, from E. Glenwood Ave. to Golf Rd.	Two-Lane Divided Arterial	D	10,300	A

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2014.

As indicated in Table 3.15-14, the East Glenwood roadway segment, between Lander and Morgan Ranch Arterial is forecast to operate with unacceptable LOS. The Morgan Ranch Arterial is forecast to divert approximately 10,000 daily trips from East Glenwood Avenue, which should alleviate traffic impacts for residents occupying the existing residential units fronting on East Glenwood Avenue. All other study roadway segments are estimated to operate at an acceptable LOS under *Existing Plus Project* Conditions. A summary of the mitigated roadway LOS is presented in Table 3.15-15.

**Table 3.15-15  
Existing Plus Project: Mitigated Roadway Levels of Service**

Roadway Segment	Capacity Configuration	Target LOS	Average Daily Traffic (ADT)	LOS
Lander Avenue, from SR 99 to E. Glenwood Avenue	Four-Lane Divided Arterial	-	-	-
Lander Avenue, from E. Glenwood Avenue to Linwood Avenue	Four-Lane Divided Arterial	-	-	-
E. Glenwood Ave., from Lander Ave. to Morgan Ranch Arterial	Two-Lane Divided Arterial	D	12,900	C
E. Glenwood Avenue, from Morgan Ranch Arterial to Golf Road	Two-Lane Collector	-	-	-
Golf Road, from E. Glenwood Avenue to Linwood Avenue	Two-Lane Collector	-	-	-
Golf Road, from E. Glenwood Avenue to SR 99 Overcrossing	Two-Lane Collector	-	-	-
Morgan Ranch Arterial, from E. Glenwood Ave. to Golf Rd.	Two-Lane Divided Arterial	-	-	-

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2014.

**Cumulative General Plan Build-Out Conditions**

*Cumulative General Plan Build-Out* conditions refer to analysis scenarios at a future planning horizon year, typically assumed to be approximately 20 years in the future. This time frame is consistent with the recently adopted 2030 General Plan. Within this analysis, the *Cumulative General Plan Build-Out* condition is a year 2030 scenario that analyzes the build-out of the 2030 General Plan that includes full development of the proposed Morgan Ranch site and all other land uses inside the General Plan study area boundary. In the 2030 General Plan, the Morgan Ranch project site is identified as “Southeast 1” Master Plan area. The long-term future year traffic forecasts for this study have been developed using the City of Turlock’s traffic model (last major update in 2008). The project area was modeled with improvements to the transportation network consistent with the City of Turlock’s 2030 General Plan and Circulation Element. Figure 9 of the TIS shows future roadway facilities from the City’s General Plan Update while Figure 10 of the TIS shows future lane geometrics and control at the study intersections. The circulation improvements near the project area include the following:

- Construct a grade separated interchange at Youngstown Road and SR 99 (will not have a connection to City of Turlock streets north of SR 99).
- Connect East Linwood Ave across Golden State Blvd via a grade separated overcrossing. Reconstruct the East Linwood Ave / Golf Road intersection and Golf Road alignment to match the new facility.
- Improve East Linwood Ave between 5th St and Verduga Road to a four-lane divided Arterial.
- Improve East Glenwood Avenue between Lander Avenue and the East Glenwood Avenue / Morgan Ranch Arterial intersection to a four-lane divided arterial.
- Improve Golf Road between East Glenwood Avenue and Golden State Blvd to a four-lane divided arterial.
- Construct a signalized intersection and at-grade railroad crossing at Golden State Blvd /Berkeley Ave. Reconstruct the 1st St / Berkeley Ave intersection to match the new facility.
- Construct roundabout at East Glenwood Avenue / Golf Road and at Morgan Ranch Arterial / Golf Road.

**Cumulative Conditions: Intersection Levels of Service**

*Cumulative General Plan Build-Out* AM and PM peak hour intersection traffic operations were quantified utilizing the *Cumulative General Plan Build-Out* peak hour intersection traffic volumes shown on Figure 11 of the TIS and cumulative year network lane geometrics and control (Figure 10 of the TIS) at the study intersections. Table 3.15-16 contains a summary of the resulting intersection LOS conditions.

As indicated in Table 3.15-16, all the study intersections are projected to operate at acceptable LOS D or better during the peak hour period under Cumulative General Plan Build-Out conditions.

**Table 3.15-16  
Cumulative Buildout Conditions: Intersection Levels of Service**

Intersection	Control Type	Target LOS	A.M. Peak Hour			P.M. Peak Hour		
			Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
Lander Avenue/SR 99 SB Ramps	Signal	D	17.2	B	-	46.4	D	-
Lander Avenue/SR 99 NB Ramps	Signal	D	12.7	B	-	10.5	B	-
Lander Avenue/E. Glenwood Ave.	Signal	D	26.0	C	-	33.4	C	-
Lander Avenue/Linwood Ave.	Signal	D	36.1	D	-	40.2	D	-
Golf Road/E. Glenwood Ave.		D	5.2	A	-	5.3	A	-
Golf Road/Linwood Ave.	Signal	D	23.9	C	-	25.5	C	-
1 <sup>st</sup> Street/Berkeley Ave.	Signal	D	17.5	B	-	17.5	B	-
Golden State Blvd/Berkeley Ave.	Signal	D	22.7	C	-	23.1	C	-
Morgan Ranch Arterial/Golf Road	RDBT	D	7.1	A	-	6.9	A	-
Morgan Ranch Arterial/E. Glenwood Avenue	RDBT	D	6.6	A	-	6.8	A	-

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2014.

Notes: BDBT=Roundabout, TWSC=Two Way Stop Control, AWSC=All Way Stop Control, LOS=Worst Case Movement's LOS for TWSC intersections, OVR=Overflow, Warrant=Caltrans Peak Hour Volume Based Signal Warrant.

**Cumulative Conditions: Roadways Levels of Service**

Cumulative General Plan Build-Out daily roadway segment traffic operations were quantified utilizing roadway ADT-based LOS thresholds. Table 3.15-17 contains a summary of the Cumulative General Plan Build-Out roadway segment LOS conditions.

**Table 3.15-17  
Cumulative General Plan Buildout Conditions: Roadway Levels of Service**

Roadway Segment	Capacity Configuration	Target LOS	Average Daily Traffic (ADT)	LOS
Lander Avenue, from SR 99 to E. Glenwood Avenue	Four-Lane Divided Arterial	D	35,200	E
Lander Avenue, from E. Glenwood Avenue to Linwood Avenue	Four-Lane Divided Arterial	D	29,300	D
E. Glenwood Ave., from Lander Ave. to Morgan Ranch Arterial	Four-Lane Divided Arterial	D	14,300	A
E. Glenwood Avenue, from Morgan Ranch Arterial to Golf Road	Two-Lane Collector	D	7,600	C
Golf Road, from E. Glenwood Avenue to Linwood Avenue	Two-Lane Divided Arterial	D	13,900	A
Golf Road, from E. Glenwood Avenue to SR 99 Overcrossing	Two-Lane Divided Arterial	D	11,700	B
Morgan Ranch Arterial, from E. Glenwood Ave. to Golf Rd.	Two-Lane Divided Arterial	D	13,600	C

Source: OMNI-MEANS, Ltd. Engineers and Planners, 2014.

As indicated in Table 3.15-17, all roadway segments, with the exception of Lander Avenue from SR 99 to E. Glenwood Avenue are projected to operate at LOS D or better under *Cumulative General Plan Build-Out* conditions.

Consistent with 2030 General Plan policies, no mitigation measures besides payment of appropriate development impact fees are required for the proposed project under General Plan Buildout Conditions. Although the Lander Avenue roadway segment from SR 99 to E. Glenwood Avenue is projected to operate at LOS E, the roadway segment is already built as a 4-Lane Arterial and therefore no further improvements are required, as described in Policy 5.2-d of the General Plan Circulation Element.

**Conclusion:** Generally-accepted traffic engineering principles and methods were employed to estimate the amount of traffic expected to be generated by the project and to analyze the traffic conditions expected to exist in the future. According to the TIS, *Existing Plus Project* conditions and *Cumulative General Plan Build-Out* conditions both would result in an increase of LOS that will exceed the City of Turlock’s recommended LOS which is D. However, the mitigation measures below would reduce the LOS at the intersections at: Lander Avenue/E. Glenwood Avenue, Golf Road/Linwood Avenue, First Street/Berkeley Avenue, and Golden State Boulevard/Berkeley Avenue from F for each intersection to D, B, C, and D, and at the Glenwood Avenue, from Lander Avenue to Morgan Ranch Arterial road segment from a LOS F to C. Consistent with 2030 General Plan policies, no mitigation measures besides payment of appropriate development impact fees are required for the proposed project under General Plan Buildout Conditions. Without mitigation, impacts are *potentially significant* at several study area intersections for all study scenarios.

**Mitigation Measures:**

***Existing Plus Project Conditions***

**Mitigation Measure #3.15.1a: Lander Avenue/E. Glenwood Avenue.** The proposed project’s mitigation measure is to construct the recommended improvements, as noted below. The timing of the improvement’s construction will be determined by a separate traffic analysis prepared as specific development proposals are received for individual projects within the Morgan Ranch Master Plan. When a traffic analysis determines the improvement is needed to support a specific development proposal, the improvement must be constructed.

- Widen the northbound approach (Lander Avenue) to provide an exclusive right turn lane. With this improvement the northbound approach includes one left turn only lane, two through lanes, and one right turn only lane.

**Mitigation Measure #3.15.1b: Golf Road/Linwood Avenue.** The proposed project’s mitigation measure is to construct the recommended improvement, as noted below. The timing of the improvement’s construction will be determined by a separate traffic analysis prepared as specific development proposals are received for individual projects within the Morgan Ranch Master Plan. When a traffic analysis determines the improvement is needed to support a specific development proposal, the improvement must be constructed.

- Signalize the intersection.

**Mitigation Measure #3.15.1c: Golden State Boulevard and Berkeley Avenue/Golf Road; First Street and Golf Road.** The proposed project’s mitigation measure is to construct the recommended improvement, as noted below or similar improvements as determined by the City and/or Stanislaus County. The timing of the improvement’s construction will be determined by a separate traffic analysis prepared as specific development proposals are received for individual projects within the Morgan Ranch Master Plan. When a traffic analysis determines the improvement is needed to support a specific development proposal, the improvement must be constructed.

**Golden State Boulevard and Berkeley Avenue/Golf Road**

- Signalize the intersection;
- Widen the eastbound and westbound approach (Berkeley Avenue) to provide an exclusive left turn lane. With this improvement, both approaches includes one left turn lane, one through lane and a right turn lane; and
- Realign Golf Road and Paulson Road in order to provide adequate spacing between these intersections and the Golden State Boulevard intersection.

**First Street/Golf Road**

- Signalize and realign the intersection.

These intersections are in the jurisdiction of Stanislaus County.

**Mitigation Measure #3.15.1d: Glenwood Avenue, from Lander Avenue to Morgan Ranch Arterial.** The proposed project’s mitigation measure is to construct the recommended improvement, noted below. The timing of the improvement’s construction will be determined by a separate traffic analysis prepared as specific development proposals are received for individual projects within the Morgan Ranch Master Plan. When a traffic analysis determines the improvement is needed to support a specific development proposal, the improvement must be constructed.

**Policy 5.2-s: Trigger for improvements.** Require improvements to be constructed when LOS is projected to drop below LOS C (on an average daily trips basis).

- Widen E. Glenwood Avenue to a two-lane arterial.

***Cumulative General Plan Buildout Conditions***

**Mitigation Measure #3.15.1e:** The project shall pay appropriate development impact fees towards General Plan circulation system improvements.

**Effectiveness of Mitigation:** The mitigation measures that have been identified would improve all of the unacceptable operations to acceptable levels. For these constrained intersections, the impact would be *less than significant* with mitigation. The impact would be reduced to a less-than-significant level by attaining acceptable LOS for roadway segments with completion of Mitigation Measures #3.15.1a through #3.15.1c. The payment of traffic fees as outlined in Mitigation Measure #3.15.1d is an accepted form of mitigation for traffic impacts under CEQA. Though the applicant will pay its fair share fee for the identified improvements, the City of Turlock cannot ensure that the improvements will be fully funded sufficient to facilitate construction prior to the project's contribution to the impact. If a proposed improvement is not fully funded and constructed before completion of the project, significant impacts to the intersection or roadway could occur until the City completes the improvements. Therefore, in accordance with the legal principles that underpin CEQA, the residual significance of this impact is *significant and unavoidable*.

**Impact #3.15.2: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.**

**[Evaluation Criteria (c)]**

Currently, the airport owner has indicated that there are no plans to improve the facilities or expand operations, and the airport could be closed within the next several years. Although there is no guarantee, by definition private use airports are to be used only by personal aircraft and occasional invited guests (transient aircraft). Additionally, the airpark is not large enough to accommodate commercial-sized aircraft which would result in increased traffic levels.

In regards to substantial safety risks, as discussed in Chapter 3, Section 3.8 of this EIR, a portion of Morgan Ranch Master Plan overlaps Zone Two (Inner Approach/Departure Zone) of the Turlock Airpark. This area extends out and around the sides of the Runway Protection Zone (RPZ) and contains the area in which 30 to 50 percent of near-airport accident sites occur. With exception of agriculture parcels, residential uses should be prohibited, along with any nonresidential uses which attract more than a few people (e.g., shopping malls, schools, eating establishments, labor intensive offices and plants, etc.) in the Inner Approach/Departure Zone. The Master Plan contemplates medium-density residential, high-density residential and commercial uses within this area. The following safety related limitations on the Morgan Ranch Master Plan are necessary more as a matter of public safety than for protection of the airport from encroachment by incompatible land uses. As long as Turlock Airpark remains open for operations, Mitigation Measures #3.8.4a and #3.8.4b listed in Chapter 3, Section 3.8 of this report would reduce impacts.

**Conclusion:** Although an increase in population will occur from the proposed project, the Turlock Airpark is privately owned and can only accommodate personal or occasional transient aircraft. There would not be an increase in traffic levels. However, because a portion of the Morgan Ranch Master Plan overlaps Zone Two there could be substantial safety risks. Without incorporation of Measures #3.8.4a and #3.8.4b in Chapter 3, Section 3.8 impacts would be *potentially significant*.

**Mitigation Measures:** See Section 3.8, Mitigation Measures #3.8.4a and #3.8.4b.

**Effectiveness of Mitigation:** Substantial safety risks resulting from the proposed project's location, which overlaps Zone Two (Inner Approach/Departure Zone), will also be reduced to *less than significant* with mitigation incorporated.

**Impact #3.15.3: Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).**  
[Evaluation Criteria (d)]

All roadways and access points would be designed according to current City of Turlock's roadway improvement standards and to the satisfaction of the City's Public Works Department.

Agricultural uses exist on all sides of the proposed project site, except for the southeast to northwest property line which fronts SR 99. Farm equipment could use the roads in the project's vicinity. During improvements, flagmen would be utilized to direct traffic as required by the City of Turlock. After the improvements are completed, farm equipment could safely travel on the shoulder of both roadways unless otherwise prohibited. This would ensure that the proposed project would not create safety hazards associated with incompatible uses. Therefore, impacts related to design features or incompatible uses would be *less than significant*.

**Conclusion:** The impact is *less than significant*.

**Mitigation Measures:** No mitigation is required.

**Impact #3.15.4: Result in inadequate emergency access.**  
[Evaluation Criteria (e)]

The proposed project has the potential to result in inadequate emergency access. However, construction activities would have to comply with the City of Turlock's regulations. Currently, there are no development proposals included as part of the proposed project. At the time of development however, construction equipment and supplies would be hauled in and located in staging areas on the project site. Therefore, emergency access would not be blocked by equipment using public roads on a daily basis. Also, as mentioned previously, during construction flagmen would be used to direct traffic where required by the City. Workers entering the sites would have to comply with California Vehicle Code (CVC) section pertaining to emergency vehicles responding Code 3, Section 21806(a) (1) CVC:

- When approached by an emergency vehicle, which is sounding a siren and displaying a forward facing red-light (Code 3), all vehicular traffic shall yield the right-of-way and drive to the right side of the roadway and stop until the emergency vehicle has passed.

Workers would also utilize the staging area to park their vehicles.

**Conclusion:** Emergency access would not be blocked by construction equipment as staging areas will be setup during construction. Flagmen will be used to direct traffic. Workers will be required to yield the right-of-way and drive to the right side of the roadway and stop for emergency vehicles. As is standard practice, proposed project site plans will be required to be

reviewed by the City fire and police departments to ensure adequate emergency access. Through this standard review process impacts will be reduced to a *less than significant* level.

**Mitigation Measures:** No mitigation measures are required.

**Impact #3.15.5: Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks).**

**[Evaluation Criteria (f) and (g)]**

The proposed project will include a Class III bike lane along the entire length of Plan Area Glenwood Avenue and a Class II lane along Golf Road and the proposed Morgan Ranch Arterial Road. A map of the proposed routes is located in the City’s 2013 General Plan.

Starting at east Linwood Avenue and Golf Road traveling west up to West Avenue there are several bus stops belonging to the Local Bus Transit. The Merced County Transit Route 6 is available along Lander Avenue along borders the northwest of the proposed project site. Chapter 5, Figures 5-3 and 5-5 of the 2013 Turlock General Plan provides detailed maps of bike trails and transit stops.

The proposed project does not conflict with the General Plan’s policies regarding bike trails or transit stops. The applicant will be subject to all City policies and regulations regarding inclusion of bike lanes and other facilities to support alternatives to automotive travel within the proposed development. Therefore, the proposed project does not conflict with adopted policies, plans or programs supporting alternative transportation.

**Conclusion:** This impact is *less than significant*.

**Mitigation Measures:** No mitigation measures are required.

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**CHAPTER FOUR**  
**CUMULATIVE EFFECTS**

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## CHAPTER FOUR – CUMULATIVE EFFECTS

### 4.1 Introduction

According to the California Environmental Quality Act (CEQA) Guidelines (Section 15355), cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts”. A cumulative impact would occur from “the change in the environment which results from the increased 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” (CEQA Guidelines Section 15355[b]).

Consistent with Section 15130(a) of the CEQA Guidelines, the discussion of cumulative impact in this Draft EIR focuses on significant and potentially significant cumulative impacts. Section 15130(b) of the CEQA Guidelines states:

The discussion of cumulative impact shall reflect the severity of the impact and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of the other projects which do not contribute to the cumulative impact.

The CEQA Guidelines identify two basic methods for establishing the cumulative environment in which the proposed project is to be considered: 1) the use of a list of projects and 2) the use of adopted projections for a general plan, certified EIR, or other adopted planning document. A combination of these two approaches may also be used in order to most accurately characterize the projects that may contribute to the cumulative impact of the proposed project. For this analysis, the list method has been employed.

### 4.2 List of Related Projects

The City of Turlock has maintained a list of past, present, and probable future projects producing cumulative impacts affecting the City and its immediate environs. The list of those projects is used for the cumulative analysis of the proposed project. For the purpose of this discussion, the projects that may have a cumulative effect on resources in the project vicinity are referred to as related projects. Brief descriptions of the related projects are provided in Table 4-1. A list of other past, present, and probable future projects within the County of Stanislaus was not available at the time of writing this EIR. A quick review of the County’s website for active planning projects close to the City’s limits resulted in one project just north of the City which has been included in Table 4.1-1 (The majority of projects currently being proposed in the County are occurring around the City of Modesto).

**Table 4-1  
Summary of Related Projects in Turlock**

<b>Project Name and Location</b>	<b>Acres</b>	<b>Dwelling Units</b>	<b>Square Feet (Comm/Indust)</b>	<b>Status</b>
<b>City of Turlock</b>				
Avena Bella – 500 Linwood Ave.	6.7	141	-	80 units expected to be occupied by 10/21/13. Schedule for construction of remainder approx 3-5 years out.
Monte Vista Crossings South – 2701 Countryside Dr.	19	-	153,785	Olive Garden Restaurant (7,685 sq. ft.) is operational. Schedule for remainder is uncertain.
Cottage Park - near N. Golden State Blvd. and W. Tuolumne Rd.	-	82	-	28 of the 82 lots have been sold and constructed.
PrimeShine Car Wash – 980 W. Monte Vista Ave.	1.13	-	4,699	In plan check process for building permit.
Park Villas - N. Golden State Blvd at Atherstone Rd.	10	140	36,500	20,000 sq. ft. of commercial space built but not occupied. No dwellings yet.
Sutter Gould Medical Building – 3100 W. Christoffersen Pkwy.	-	-	38,000	Under construction.
Blue Diamond – 1300 N. Washington Rd.	-	-	451,637	Phase 1 expected to be operational in 2013.
Yosemite Farm Credit – 900 W. Monte Vista Ave.	-	-	17,000 + 4,000	Under construction.
10 Pin Fun Center – 1010 W. Monte Vista Ave.	-	-	51,826	Not constructed.
Mi Pueblo – 1300 W. Main St.	-	-	37,000	Status uncertain.
Lander Crossings – 1851 Lander Ave.	-	-	Retail + 85-unit hotel	Active; status uncertain
West Main Shopping Center – 2218 and 2300 W. Main St.	-	-	100,000	Entitlement extended to March 2014; no building permit applications submitted.
Enterprise Park – 1100 W. Glenwood Ave.	-	-	12-lot industrial	Tentative map extended to March 2016.
Northeast Turlock Master Plan – Northeast quadrant of Turlock.	255	728	83,635	Subdivisions in various stages of construction.
East Tuolumne Master Plan - Northeast quadrant of Turlock	100	3,000 potential		Tentative map extended to 2016.
Avila and Sons EIR-1301 N. Washington Road.	-	-	180,000 agricultural warehouse + other improvements	EIR being prepared as of January 2014.
Dust Bowl – Fulkerth Rd. at Dianne Rd.	-	-	55,000	Potential brewery and warehouse.
Countryside Housing Project – Countryside Dr. at W. Tuolumne Rd.	15	105 potential	-	Potential residential development with a small commercial parcel.

Project Name and Location	Acres	Dwelling Units	Square Feet (Comm/Indust)	Status
<b>County of Stanislaus</b>				
Use Permit Application No. PLN2012-0034-Taylor Veterinary Emergency Hospital-1231 W Taylor Rd	1.37	-	6000	Expansion of an existing 1.09 acre veterinary hospital to add 1.37 acres (total 2.46) to include a metal building.
Totals	-	4,196	1,219,182	-

Source: City of Turlock, 2013; County of Stanislaus, 2014.

As shown in Table 4-1, over 1.2 million square feet of industrial and retail commercial development and over 4,000 dwelling units are expected to be constructed in Turlock or close to the City, based on currently available data.

### 4.3 Cumulative Impacts Analysis

#### 4.3.1 AESTHETICS

Areas surrounding the project site make up the cumulative aesthetics analysis geographic scope. As noted in Section 3.1, the visual features of the proposed project would include residential, commercial, office, and school buildings and structures, ancillary structures and facilities, surface parking areas, and other roadway improvements (e.g. curb, gutter, sidewalk and street paving). The proposed project would be in accordance with development standards and design guidelines outlined in Chapter 3, Land Use and Development Standards of the Morgan Ranch Master Plan. Compliance with these standards and guidelines would ensure that buildings and structures proposed within the project site would be developed to be sensitive to and compatible with existing and future surrounding land uses, while providing high-quality architecture and design. With the implementation of these design features and mitigation measures, visual impacts were found to be less than significant. Therefore, the project, in conjunction with other planned or approved projects (Table 4-1), would have *less than cumulatively considerable* aesthetic impacts.

#### 4.3.2 AGRICULTURAL RESOURCES

The California Department of Finance (DOF) Demographic Research Unit forecasts that the Central Valley's populations will more than double by the year 2040 to almost 10 million people. According to the American Farmland Trust, if current land use trends continue, nearly 900,000 acres of Central Valley farmland would thus be converted to urban uses and ranchette development, most of it high quality farmland.

As noted in Section 3.2, the proposed project would result in the loss of approximately 137 acres of land designated Prime Farmland and Farmland of Statewide Importance. The proposed project, as well as many other projects, will take Prime Farmland, Unique Farmland, and Farmland of Statewide Importance out of agricultural production. The agricultural production geographic areas affected by this loss include Stanislaus County, the Central Valley, and the State of California. Therefore, in combination with the projects in Table 4-1, the proposed

project will result in a potentially significant, unavoidable, and irreversible **significant cumulative impact**.

#### 4.3.3 AIR QUALITY

As growth continues in the San Joaquin Valley, attainment of air quality standards will become more difficult, even though overall air quality has improved. Currently approved and proposed cumulative development planned in the Central Valley Counties will result in thousands of new homes and retail square footage.

The proposed project would contribute to cumulative air emissions by allowing for substantially greater development in the project area than currently exists. The amount of mobile and stationary emissions would be greater than what would be generated under existing conditions, or future conditions if the project area were to remain vacant. The SJVAPCD has adopted a cumulative threshold of significance of 10 tons per year of ozone precursors (ROG and NOx). Project emissions of these two pollutants, after mitigation, would exceed this threshold. Consequently, the proposed project would contribute to air quality degradation, and impede the San Joaquin Valley's ability to attain air quality standards. The geographic area for cumulative air quality analysis is therefore the San Joaquin Valley.

The cumulative construction and operational air quality impacts of the project, together with other foreseeable regional development (including those listed in Table 4-1), would be significant and unavoidable, and the project's contribution would be cumulatively considerable. Although the mitigation measures included in Section 3.3 are applicable to the project's cumulative impact, this impact cannot be mitigated to a less than cumulatively considerable level and thus is **cumulatively considerable**.

#### 4.3.4 BIOLOGICAL RESOURCES

Due to existing intensive urbanization and agricultural use in the project area, there are few biological resources remaining. However, some special-status species occur in the vicinity of the project. The increase in urbanization facilitated by the project would contribute to the cumulative loss of biological resource habitat in the San Joaquin Valley. Direct impacts to biological resources will be mitigated to a less than significant level by compliance with the City of Turlock General Plan policies and standards and the Federal and State agency-mandated laws and mitigation measures for special-status species (they are identified in Section 3.4, Biological Resources). Other projects in the vicinity of the proposed project site will be required to comply with laws and regulations protecting biological resources. Such compliance will contribute to limiting direct cumulative impacts on biological resources. However, despite the limited value of the habitat loss occasioned by the project, deemed less than significant as a direct effect, the cumulative habitat loss of this and all other urbanization projects in the San Joaquin Valley, dictate that for the central valley the cumulative impact will be significant, **cumulatively considerable**. There are no project-related mitigation measures, which will reduce this impact.

#### 4.3.5 CULTURAL RESOURCES

According to this EIR's cultural resources records search and cultural resources survey, there is no evidence of a historical, archaeological, paleontological, unique geological feature, or any known human remains within the proposed project site. Although there are existing structures within the project site that are greater than 45 years in age, they do not appear to meet the eligibility requirements for listing on the California Register of Historic Resources. While grading and other construction activities have the potential to impact cultural resources, City of Turlock General Plan policies and compliance with federal and State regulations reduce the project-specific impact to a less than significant level. Regional development could also affect cultural resources located in other parts of Stanislaus County. However, development in these areas would also be subject to federal and State laws protecting such resources. Mitigation measures outlined in Section 3.5 are also applicable to cumulative impacts. As a result ***no significant cumulative impact*** will occur in the City, Stanislaus County, or the State.

#### 4.3.6 GEOLOGY AND SOILS

New developments in the project area can be affected to varying degrees by geologic and soil-related hazards. Soil-related hazards are site specific. Development in Stanislaus County and the Central Valley region will continue to expose people and property to seismic hazards. Compliance with the policies contained in the City of Turlock General Plan and with federal, State and local regulations addressing building construction, reduce project-level impacts associated with geology and soils to a less than significant level. Development projects in other communities would also be subject to local and State laws and regulations and local general plan policies. Review and permitting of specific development projects, including environmental review in accordance with CEQA, will involve characterization and consideration of site-specific geologic and soils conditions, and implementation of individual project mitigation where needed. As a result, a ***less than significant cumulative impact*** related to seismic and soils hazards would result.

#### 4.3.7 GREENHOUSE GAS EMISSIONS

In accordance with the San Joaquin Valley Air Pollution Control District and State's guidance for addressing GHG emission impacts, the proposed project applied the 29 percent reduction from business as usual levels and compared construction emission totals with cap and trade program threshold levels. With mitigation measures applied from Section 3.3, GHG emissions from construction of the proposed project would be reduced to less than significant. Operational emissions are reduced by 29% from business as usual. However, cumulative emissions are responsible for the increasing change in GHG concentrations in our atmosphere. In turn, these emissions are responsible for the environmental impacts associated with climate change. Therefore, in combination with other projects in the City (Table 4-1), State, and around the World the cumulative geographic impacts are ***cumulatively considerable***.

#### 4.3.8 HAZARDS AND HAZARDOUS MATERIALS

As discussed in Section 3.8, a record search and site reconnaissance identified several issues associated with past and present uses of the project site that could potentially result in the

exposure of persons and environment to hazardous materials including: hazardous waste containing building materials, pesticides, abandoned wells, and USTs. However, mitigation measures reduce these potential impacts to less than significant. In addition to hazardous materials, the proposed Morgan Ranch Master Plan is immediately north of SR 99 and north to northeast of the Turlock Airpark. The westerly segment of Morgan Ranch Master Plan breaches three Safety Compatibility Zones for a low-activity general aviation runway. The Stanislaus County Airport Land Use Commission has created a Stanislaus County Airport Land Use Plan with recommendations for the area immediately surrounding the Airpark. Recommendations have been incorporated into the proposed project as mitigation measures to reduce impacts to less than significant. In combination with other projects listed in Table 4.1-1, hazards and hazardous materials related to the proposed project are site specific. As a result, a ***less than significant cumulative impact*** would result.

#### 4.3.9 HYDROLOGY/WATER QUALITY

As project development proceeds, the amount of polluted runoff will increase, as well as the amount of stormwater, presenting a potential impact to surface and groundwater quality. Project level water quality and flooding impacts are reduced to a less than significant level at the project level by City of Turlock General Plan policies and existing regulations and by project mitigation measures. Other new development within the City and County would also result in an increase in runoff and may locate additional population and structures within areas subject to flooding. Such development would also be required to comply with regional, State and federal regulations addressing stormwater runoff, water quality and flooding.

The cumulative impact is expected to be ***less than cumulatively considerable***.

#### 4.3.10 LAND USE AND PLANNING

The land use analysis of the proposed project in Section 3.9 found that it would not conflict with established land uses or adopted or applicable land use or habitat plans or policies. Since the project would not result in a direct or indirect project-level land use impact, the project will also not contribute to a cumulative land use impact with the projects listed in Table 4.1-1. Therefore, a ***less than cumulatively considerable*** impact would occur.

#### 4.3.11 NOISE

According to Section 3.11, Tables 3.11.14 and 3.11.15, the proposed project will result in an increase in traffic noise levels of 5 dB along Golf Road. The project will not result in increases in traffic noise of 5 dB on other roadways. Results also indicate the proposed residential land uses on the project site will be exposed to traffic noise levels associated with S.R. 99, Glenwood Avenue and Golf Road in excess of the City of Turlock generally acceptable noise level standard of 60 dB Ldn. In addition, proposed residential land uses on the project site will be exposed to traffic noise levels associated with S.R. 99 in excess of the conditionally acceptable noise level standard of 65 dB Ldn. The proposed project could result in noise levels that would exceed the standards in the City of Turlock General Plan and Municipal Code as shown in Section 3.11. According to predicted existing traffic noise levels in the Traffic Impact Study, impacts would be considered potentially significant. However, Mitigation measures #3.11.1 through #3.11.7 would

bring impacts to a less than significant level. Other projects listed in Table 4.1-1 would also have to comply with the City’s standards for noise and therefore in combination with the proposed project, there would be a *less than cumulatively considerable* impact.

Construction and operational vibration levels would be at a less than significant level and therefore would not constitute a cumulatively considerable contribution to ambient vibration levels. Construction of buildings and utilities are expected to occur at considerable distances from existing occupied residences and would be removed from future on-site uses. Cumulative impacts would be *less than significant*.

#### 4.3.12 POPULATION AND HOUSING

The proposed project would construct 1,660 residential units and result in the extension of public services infrastructure to an area that does not receive any service currently. Roadways may be used for future development. All of these aspects of the proposed project have the potential to cause population growth either directly or indirectly. Growth will also occur in other nearby cities and unincorporated communities surrounding the City of Turlock. The projects listed in Table 4.1-1 would be required by State and local laws to evaluate the potential for growth inducement and, if necessary, to mitigate such impacts. As such, the project, in conjunction with other projects, would not have a cumulatively considerable contribution to impacts on population and housing. All jurisdictions are required by State law to use the General Plan process, as well as other planning processes, such as utility master plans, to plan for and control future growth. As a result, there would not be a cumulative impact associated with unplanned growth adversely affecting population and housing. The proposed project would *not contribute to a significant cumulative impact*.

#### 4.3.13 PUBLIC SERVICES AND UTILITIES

According to Section 3.13, police and fire protection services will be provided by the City of Turlock. Future development would likely result in the City having to hire more personnel and to purchase additional equipment. However, the proposed project and all other applicable projects (Table 4.1-1) would have to comply with the City of Turlock Municipal Code which requires payment of development impact fees to reduce impacts to *less than significant*. The proposed project would include the development of 1,660 dwelling units, which would also increase enrollment in the Turlock Unified School District and could result in a cumulative impact. This impact would also be reduced from the same compliance requirement for payment of impact fees to schools in the City.

The City of Turlock does not currently meet its service standard for City residents with its current public library facility. The Turlock General Plan concluded that it may reasonably be anticipated that Turlock will gain a new, larger library during the planning period. These facilities are supported by General Plan policies, and would serve the growing demand for services in the Turlock area including the Master Plan area. Adherence to General Plan policies would reduce impacts to library services to *less than cumulatively considerable* level.

Development within the Morgan Ranch Master Plan area would be required to pay their sewer connection and capacity fees in accordance with the adopted fee schedule at the time building

permits are sought which ensures that the Turlock Regional Water Quality Control Facility is expanded in accordance with the Sewer Master Plan and in compliance with regulatory standards. Impacts would be *less than cumulatively considerable*.

Construction of new stormwater infrastructure will be in accordance with City policies and regulations. Adherence to these policies and regulations would reduce potential impacts from construction of the new stormwater infrastructure to a less than significant level. Cumulative impacts would be *less than cumulatively considerable* as other projects in the City would also have to comply with the City's regulations for stormwater.

Based on the demand factors used in the General Plan Draft EIR, the proposed project would demand 739 acre-feet per year (659,737 gallons per day or 458 gallons per minute) of water. Mitigation applied to the proposed project will require the applicant to identify all appropriate and feasible water conservation measures are incorporated into the proposed use(s). Impacts would be reduced to less than significant. However, because availability of water supplies is not completely assured, the City found the impact of General Plan buildout to be a significant impact on water supplies. In addition, ongoing studies indicate that climate change will likely affect water supplies, which is by nature a non-renewable resource and therefore cumulative impacts would occur which may be *cumulatively considerable*.

Estimates of the total waste generated from demolition and construction of the proposed project is 13,046.3 tons, and operational waste is 2,932 tons per year. It was concluded that impacts to the nearest landfills from construction and operational waste will be significant and unavoidable. However, the proposed project has applied mitigation to reduce impacts. In combination with other projects (Table 4.1-1) that would also have to comply with federal, State, and local regulations for solid waste, or be required to mitigate impacts a less than significant. Therefore, a *less than cumulatively considerable* impact would occur.

#### 4.3.14 RECREATION

Implementation of the proposed project will result in potentially significant impacts to recreation resources and programs; however, project-level mitigation includes provisions for on-site recreational facilities, as well as for payment of required fees. The existing recreational facilities which would be affected by the project and other projects listed in Table 4.1-1, are located within the City. Pursuant to the City of Turlock Municipal Code, the applicant will be required to pay park impact fees, after the construction of onsite recreational parks, trails, and facilities, will avoid significant impacts on offsite recreational facilities. The project's cumulative impacts on recreation are thus *less than significant*.

#### 4.3.15 TRANSPORTATION/TRAFFIC

According to Section 3.14, the Traffic Impact Study found that both existing plus project conditions and cumulative general plan build-out conditions would result in an increase of level of service (LOS) that will exceed the City of Turlock's recommended LOS which is D. However, with mitigation applied, all LOS are improved to acceptable operations levels. The City of Turlock has regulations in place to ensure safety along its roadways which must be

adhered to. Other projects listed in Table 4.1-1 would also have to comply with the City's regulations or would have to provide mitigation measures to reduce impacts. The applicant would also be required to comply with the City of Turlock's improvement standards which are developed to minimize hazards due to design features or incompatible uses. Therefore the cumulative impacts would be ***less than significant***.

As mentioned previously, the project site overlaps Zone Two of the Turlock Airpark. There could be substantial safety risks and consequently mitigation measures have been applied in Section 3.8 to reduce impacts. Since this is a site specific issue, in combination with other the other projects listed in Table 4.1-1, there could not be any cumulative impacts. A ***less than cumulatively considerable*** impact would occur.

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**CHAPTER FIVE**  
**EVALUATION OF ALTERNATIVES**

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## CHAPTER FIVE – EVALUATION OF ALTERNATIVES

### 5.1 Introduction

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126.6). This chapter identifies potential alternatives to the proposed project and evaluates them, as required by CEQA.

Key provisions of the CEQA Guidelines on alternatives (Section 15126.6[a] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR.

- "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" (15126.6[b]).
- "The specific alternative of 'No Project/ No Build' shall also be evaluated along with its impact"(15126.6[e][1]).
- "The No Project/ No Build analysis shall discuss the existing conditions at the time the Notice of Preparation (NOP) is published, and at the time the environmental analysis is commenced, as well as what would reasonably be 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. If the environmentally superior alternative is the 'No Project/ No Build' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (15126.6[e][2]).
- "The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project" (15126.6[f]).
- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" (5126.6[f][1]).
- "For alternative locations, "only locations that would avoid or substantially lessen any of the significant effects of the project need to be considered for inclusion in the EIR" (15126.6[f][2][A]).

- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative" (15126.6[f][3]).

For each development alternative, this analysis:

- Describes the alternative;
- Analyzes the impact of the alternative as compared to the proposed project;
- Identifies the impacts of the project that would be avoided or lessened by the alternative;
- Assesses whether the alternative would meet most of the basic project objects; and
- Evaluates the comparative merits of the alternative and the project.

Per the CEQA Guidelines Section 15126.6(d), additional significant effects of the alternatives are discussed in less detail than the significant effects of the project as proposed.

## **5.2 Project Objectives**

As described in Section 2.2, the following objectives have been established for the proposed project. They will aid decision makers in their review of the project alternatives, and associated environmental impacts:

- Direct the development of new growth within the City of Turlock;
- Serve as a bridge between the more general policies in the Turlock General Plan and the requirements placed on specific development projects within the Morgan Ranch Master Plan Area;
- Provide land use locations, development standards, circulation patterns, and infrastructure plans to direct future development within the Morgan Ranch Master Plan Area; and
- Enable subdivision maps that conform to the development standards of the Master Plan to be approved without the need for other discretionary permits.

## **5.3 Significant Impacts of the Project**

A primary consideration in selecting project alternatives is their potential to reduce or eliminate significant impacts compared to the proposed project. The project impact analysis, as detailed in Chapter 3 of this DEIR, concluded that the following impacts would remain significant, after mitigation, for the proposed project:

### Agricultural Resources:

Impact #3.2.1 – Conversion of 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 uses.

Air Quality:

Impact #3.3.1 – Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Impact #3.3.3 – Conflict with or obstruct implementation of any applicable air quality plan.

Impact #3.3.4 – Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

#### **5.4 Rationale for Alternatives Selections**

As discussed above, CEQA provides that alternatives should:

1. Feasibly accomplish most of the basic purposes of the project; and
2. Avoid or substantially lessen one or more of the significant effects.

All alternatives selected for analysis met at least some of the project objectives identified in Chapter 2, and possess some possibility of reduction or elimination of project related significant impacts.

The comparative environmental ranking of the project alternatives is based on the alternative's relative and quantitative (where applicable) ability to reduce these identified significant impacts.

#### **5.5 Alternatives Considered and Rejected During the Scoping/Project Planning Process**

Following is a discussion of other site alternatives considered during the scoping and planning process and the reasons why they were not selected for detailed analysis in this DEIR.

##### **5.5.1 CEQA REQUIREMENTS**

CEQA requires that a discussion of alternatives focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project. The key question and first step in the analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (Guidelines Sec. 15126.6(f)(2)). Key factors in evaluating potential offsite locations for EIR project alternatives include: 1) whether the site is currently vacant, 2) if it is in the same jurisdiction, 3) whether development as proposed would require a General Plan Amendment, and 4) whether the project applicant could reasonably acquire the parcel. An analysis was therefore undertaken to determine whether existing vacant parcels within the City of Turlock would accommodate the proposed project.

### 5.5.2 CRITICAL OTHER-SITE CHARACTERISTICS

Any other project location for the project must:

- a. Fully or partially achieve the project objectives;
- b. Be served by adequate wastewater collection facilities;
- c. Not be encumbered by Williamson Act contracts;
- d. Be located within the City of Turlock's urban growth boundary; and
- e. Not be surrounded or abutted by areas of lower-cost or otherwise incompatible development which would adversely affect developed project salability.

### 5.5.3 OTHER-SITE ANALYSES

A review of available sites within the City of Turlock or its urban development boundary which conceivably possess all these attributes and none of the critical listed constraints, and can otherwise achieve or partially achieve the project objectives, disclosed no feasible alternative locations. The essential site attributes considered in this determination included site size, availability of infrastructure, and location within the City's Sphere of Influence. The project proponent has no ownership of or access to any alternative site. There was no evidence that even were such a site found its usage would avoid or significantly lessen any of the significant impacts of the project.

It should also be noted that the alternatives analysis does not include consideration of a combination of smaller projects - residential and commercial - at diverse sites within the City's sphere of influence. The project is a unit composed of these land uses. None of the project objectives would be achieved by such a disintegrated combination of land uses.

## 5.6 Alternatives Selected for Analysis

The following alternatives have been determined to represent a reasonable range of alternatives (plus the No Project/ No Build alternatives) that have the potential to feasibly or partially attain objectives of the project but avoid or substantially lessen any of the significant effects of the project. These alternatives are analyzed in detail in following sections:

1. No Project/ No Build;
2. Reduced Intensity; and
3. Increased Intensity.

After alternatives are summarized and compared with the proposed project, the chapter concludes with an analysis of the comparative environmental superiority of the various alternatives, as required by CEQA, and the identification of the environmentally superior alternative. The threshold criteria used in Chapter Three (Appendix G of the CEQA Guidelines)

are used in this section to judge the significance of, and compare, the impact conclusions related to each criteria for the project for each alternative.

### **5.6.1 ANALYSIS GUIDELINES**

CEQA, unlike NEPA, does not require alternatives analysis at the same detailed level as the analysis of the project; the analysis is simply required to "include sufficient information about each alternative to allow meaningful evaluation, analysis and comparison with the proposed project". [CEQA Guidelines 15126.6(d)] It is further required to provide decision-makers with sufficient information to make informed decisions, and to be accessible to the public.

According to CEQA Guidelines, it is required that not only the significant environmental effects of each alternative be identified for comparison with those of the project, but any additional significant effects of each alternative be ascertained and discussed.

### **5.6.2 NO PROJECT/ NO BUILD ALTERNATIVES**

Every EIR is required to include a "No Project/ No Build" alternative pursuant to CEQA Guidelines Section 15126.6(e). "The purpose of describing and analyzing a No Project/ No Build alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." In general, this alternative should discuss "existing conditions...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 manner in which a No Project/ No Build alternative shall be composed depends on the nature of the project at issue. "When the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the 'No Project/ No Build' alternative will be the continuation of the existing plan, policy or operation into the future. Typically this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan" (CEQA Guidelines, Section 15126.6(e)(3)(A)).

In contrast, "if the project is other than a land use or regulatory plan, for example a development project on identifiable property, the 'No Project/ No Build' alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'No Project/ No Build' consequence should be discussed. In certain instances, the No Project/ No Build alternative means 'no build' wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment" (Section 15126.6(e)(3)(B)).

The No Project/ No Build alternative for this project considers one potential scenario that could occur in lieu of the proposed project: (1) No Build/No Project - continuation of existing conditions (agricultural uses) within the proposed project site (CEQA Guidelines, Section 15126.6(e)(3)(B)).

### **5.6.3 NO PROJECT/ NO BUILD – CONTINUATION OF EXISTING CONDITIONS WITHIN THE PROPOSED PROJECT SITE**

The proposed project site consists of approximately 170 acres, bounded by Golf Road, Glenwood Avenue, and Lander Avenue. If the proposed project site were to remain in its present condition (agricultural, residential, and commercial uses), none of the significant impacts, after mitigation, attributable to the project would occur. Few additional impacts attributable to the No Project/ No Build alternative would occur; the existing onsite environment would remain unchanged (Section 4.3.3.2).

#### **5.6.3.1 Impact Analyses**

In confirmation of these conclusions the following analyses are presented:

#### **AESTHETICS**

Currently, the majority of the site includes agricultural land that consists of row crops and orchards. The remainder of land includes rural residential homes scattered around the edges of the property, as well as a gas station and car wash. State Route 99 is located south of the project area and is a four-lane divided highway oriented roughly northwest to southeast. Although agricultural land may not be inherently aesthetic, particularly if weed growth is not controlled, it does not modify the general agricultural vista of the site or its surroundings. The existing site has some lighting from the houses, commercial uses, and SR 99, but vistas will be unchanged. Therefore, when compared to the proposed project, the No Project/ No Build alternative would be considered environmentally superior.

#### **AGRICULTURAL RESOURCES**

Under the No Project/ No Build alternative the project site would continue to be utilized for the same uses which include agriculture. In comparison to the proposed project, which would eventually develop the entire project site and preclude future agricultural use of the property, this alternative is considered environmentally superior.

#### **AIR QUALITY**

The No Project/ No Build alternative would result in eliminating both construction and operational related criteria air pollutant impacts from approximately: 1,322 medium density homes, 338 high density homes, 96,921 sq. ft. of community commercial space, 16,335 sq. ft. of office space, two 4.35 acre parks, 11.1 acre school, and 4.4 acre detention pond. Currently, uses at the site which contribute to air pollutants include agricultural equipment, a small amount of

motor vehicles, and commercial activities (gas station and car wash). Compared to air emissions from the proposed project, this alternative is considered environmentally superior.

## **BIOLOGICAL RESOURCES**

Agricultural activities and other disturbances would continue to occur under the No Project/ No Build alternative. There is a potential for special status wildlife to enter the project site and be subject to take under this alternative. However, wildlife species are often found in and around agricultural fields where they feed and nest. Under the proposed project all agricultural land would be converted into medium and high density homes, community and office space, and two parks and a school. Significantly fewer disturbances would occur with this alternative and therefore, it is environmentally superior.

## **CULTURAL RESOURCES**

Disturbance beyond what is currently allowed would not occur under the No Project/ No Build alternative. However, the site would continue to be disturbed with agricultural activities and therefore, uncovering a cultural resource could occur. For example, during agricultural activities an artifact may be uncovered in the same area of the property as during grading for the proposed project. There is no environmentally superior alternative.

## **GEOLOGY AND SOILS**

Grading and excavation of the site would not occur under the No Project/ No Build alternative. No additional human occupied structures would be introduced to the potential seismic related hazards associated with ground shaking. Geologic impacts for this alternative therefore, would be reduced in comparison to the proposed project. Ground shaking could occur with both this alternative and the proposed project. However, more structures and people increase the likelihood of damage even with mitigation measures applied. As such, this alternative is environmentally superior.

## **GREENHOUSE GAS EMISSIONS**

The site would continue producing GHG emissions generated from agricultural activities and a small number of houses under the No Project/ No Build alternative. Compared to the proposed project which would add 1,322 medium density residents, 338 high density residents, 96,921 sq. ft. of community commercial, 16,335 sq. ft. office, two 4.35 acre parks, 11.1 acre school, and 4.4 acre detention pond, the existing production of GHG emissions is considerably less with this alternative and is therefore environmentally superior.

## **HAZARDS AND HAZARDOUS MATERIALS**

The No Project/ No Build alternative would include construction and operational activities which are sometimes associated with hazards or hazardous materials. However, this alternative may introduce new potential hazards associated with recurrence of agricultural activities. Nevertheless, potential hazard and hazardous material related impacts would be less under this

alternative than compared to the proposed project. This alternative is therefore environmentally superior.

### **HYDROLOGY/ WATER QUALITY**

With the No Project/ No Build alternative, the entire project site would remain permeable surface, where rain and irrigation water would be able to percolate into the soil. In the proposed project, the majority of the site would be developed with impermeable surfaces such as buildings, parking lots, and hardscape. Therefore, the volume of stormwater from the project site would be reduced in this alternative compared with the proposed project. However, under this alternative, resumption of farming might introduce pesticides and nitrates to the groundwater. Therefore, impacts to water quality may be substantially different under this alternative than under the proposed project. Impacts regarding hydrology and water quality may be potentially lessened compared to the project. They cannot be numerically compared.

Although the EIR identified no significant impacts to hydrology/ water quality from the project after mitigation, the less-than-significant project impacts of this category would be slightly less under this alternative.

### **LAND USE AND PLANNING**

The project site would remain in its present condition under the No Project/ No Build alternative, and would not develop the mix of uses envisioned by the City's Cumulative General Plan Build-Out scenario that includes Morgan Ranch Specific Plan as "Southeast 1". Therefore, as the City's General Plan designated goals and objectives would not be met, this alternative is less environmentally superior.

### **NOISE**

Because the No Project/ No Build alternative would eliminate construction activities, there would be no impact from noise and vibration to nearby sensitive receptors. In addition, sensitive receptors would not be affected by traffic noise generated from State Route 99 and the addition of 19,264 vehicles added to the area from the proposed project. With this alternative, no stationary noise would be generated beyond those associated with the existing uses at the project site. Therefore this alternative would avoid any additional short-term and long-term noise impacts and is environmentally superior.

### **POPULATION AND HOUSING**

No incremental population would be introduced and no new housing would be eliminated by the No Project/ No Build alternative. Under this alternative, the City's Cumulative General Plan Build-Out scenario which includes the Morgan Ranch Specific Plan as "Southeast 1" would not be realized. The proposed project will provide housing in accord with the Turlock General Plan and Municipal Code and displaces no existing housing. The impacts of this alternative would be considered less environmentally superior compared to the proposed project.

## **PUBLIC SERVICES AND UTILITIES**

Under the No Project/ No Build alternative, there would be no increase in demand for fire and emergency protection services, schools and library services, and facilities. Public service impacts would therefore be considered environmentally superior than those of the proposed project.

The total usage of water required for farming, about three acre feet per acre, or 1,380 acre feet, may be slightly less than that of the project (although a presumption of alfalfa crop production would require about 3 1/2 acre feet per acre, 1,600 acre feet per year, essentially the same as that of the project).

Under the No Project/ No Build alternative, no additional demand would be generated for area utilities and service systems. In comparison to the proposed project at buildout, it would eliminate wastewater collection and treatment loadings, potable water demand, as well as the need for offsite service system improvements to water distribution and sewer collection systems. Although the proposed project is expected to have no significant unmitigatable impacts to utilities, this alternative is environmentally superior.

## **RECREATION**

The No Project/ No Build alternative would not result in increased population and thereby trigger the need for additional recreation facilities. The City's General Plan requires 3.5 acres of parkland per 1,000 residents. Currently, the City meets its parkland needs with 249 acres of parkland. The proposed project would include two parks and comply with the City's General Plan which will require that park fees be paid. As a result of the proposed project, more than 2 new parks will be added to the City. Parks within the Morgan Ranch Specific Plan area will be used by residents and nearby neighbors. Because the parks would be new, they would have a lifespan that would surpass some of the City's existing parks. Therefore, impacts to recreation would be less under the proposed project as compared to this alternative which is less environmentally superior.

## **TRANSPORTATION/TRAFFIC**

No additional traffic trips above those that currently are generated from agricultural operations and residents living in the area would occur under the No Project/ No Build alternative. The LOS at intersections would remain at "B" and "C" and at "A" along roadway segments. Also, there would not be an addition of 19,264 daily vehicle trips added to the existing roadway, or a need for new roadways to accommodate the project. However, with this alternative the Cumulative General Plan Build-Out scenario which includes the Morgan Ranch Specific Plan as "Southeast 1" would not be recognized. There would be no new roads and/or intersections to accommodate future growth. Therefore, this alternative would be considered less environmentally superior to the proposed project.

### **5.6.3.2 Ability to Reduce Environmental Impacts**

In comparison to the proposed project, the No Project/ No Build alternative would reduce impacts to the following environmental resource areas: aesthetics/visual resources, agriculture resources, air quality, biological resources, geology and soils, hazards and hazardous materials, hydrology/ water quality, noise, public services and utilities, and greenhouse gas emissions. Impacts to land use, population and housing, recreation, and transportation and traffic would be less with proposed project. Significant project impacts to agricultural resources and air quality would be eliminated under the No Project/ No Build alternative. Impacts to cultural resources would be the same under both alternatives. This alternative substantially reduces the environmental impacts in comparison to the proposed project and eliminates all significant and unavoidable impacts.

### **5.6.3.3 Ability to Achieve Project Objectives**

The No Project/ No Build alternative would not achieve any of the objectives of the proposed project.

## **5.6.4 REDUCED INTENSITY ALTERNATIVE**

A feasible project alternative would be development of a reduced project size. The reduction would include the following: residential intensities, commercial and office space, school site acreage, and parks. It is assumed for purposes of analysis that with a 50% reduction, the full build-out population would be 2,476.5 (1/2 of 4,953 persons calculated in Section 3.14.6). Therefore, at full build-out the proposed project would include: 661 medium density homes, 169 high density homes, 48,460.5 sq. ft. of commercial space, 8,167.5 sq. ft. of office space, a 5.55 acre school, one park, and a 4.4 acre detention pond. The detention basin would remain the same size in order to serve potential future development in the basin's drainage contributing area. The project objectives would be partially achieved as shown in the analysis in Section 5.3.5.3. The evaluation of the financial feasibility of this alternative is outside the scope of this environmental evaluation.

### **5.6.4.1 Analysis**

A similar street pattern (not identical because of varying lot sizes) is assumed in this analysis to that of the proposed project.

## **AESTHETICS**

With the Reduced Intensity alternative, onsite aesthetics would have a less urbanized appearance compared to the proposed project due to the larger lot sizes and reduced commercial and office uses. In addition, lighting would be reduced as a result of fewer houses, and thereby light pollution would be less than the proposed project. This alternative is environmentally superior to the proposed project.

## **AGRICULTURAL RESOURCES**

Under the Reduced Intensity alternative, the entire project site would be developed and no longer utilized for agricultural activities. Although development would be reduced by 50%, the impacts would still remain significant and unavoidable. There is no environmentally superior alternative.

## **AIR QUALITY**

The Reduced Intensity alternative would result in both construction and operational related criteria air pollutant impacts from approximately: 661 medium density homes, 169 high density homes, 48,460.5 sq. ft. of commercial space, 8,167.5 sq. ft. of office space, a 5.55 acre school, one park, and a 4.4 acre detention pond. Compared to the proposed project, this alternative would produce less criteria pollutants and therefore is considered environmentally superior.

## **BIOLOGICAL RESOURCES**

There is a potential for special status wildlife to enter the project site and be subject to take under the Reduced Intensity alternative. As with the proposed project, mitigation measures would be applied to reduce impacts. However, 50% fewer disturbances would occur than with the proposed project, and therefore this alternative environmentally superior.

## **CULTURAL RESOURCES**

During construction of the site, the likelihood of uncovering cultural resources is equal under both the Reduced Intensity alternative and the proposed project. For example, during grading an artifact may be uncovered in the same area of the property under this alternative or the proposed project. Therefore, no environmentally superior alternative exists.

## **GEOLOGY AND SOILS**

Grading and excavation of the site would also occur under the Reduced Intensity alternative. Fewer human occupied structures would be built and subject to the potential seismic related hazards associated with ground shaking. Geologic impacts for this alternative, therefore, would be reduced in comparison to the proposed project. Ground shaking could occur with both this alternative and the proposed project. However, more structures and people increase the likelihood of damage, even with mitigation measures applied. Therefore, because there would be fewer human occupied structures and people, this alternative is environmentally superior.

## **GREENHOUSE GAS EMISSIONS**

The site would continue producing GHG emissions generated at a 50% reduction as compared to the proposed project under the Reduced Intensity alternative. Compared to the proposed project which would add; 1,322 medium density residents, 338 high density residents, 96,921 sq. ft. of community commercial, 16,335 sq. ft. office, two 4.35 acre parks, 11.1 acre school, and 4.4 acre detention pond, the existing production of GHG emissions is considerably less with this alternative and is therefore environmentally superior.

## **HAZARDS AND HAZARDOUS MATERIALS**

In comparison to the proposed project, the Reduced Intensity alternative would have less potential to result in hazardous materials mishaps associated with construction and increased operational activities. This alternative would require construction equipment for a shorter period of time, and result in a 50% reduction of potential hazardous situations. This alternative is therefore environmentally superior.

## **HYDROLOGY/ WATER QUALITY**

While impervious surfaces would be reduced under this alternative, water quality impacts may be slightly increased by the greater percentage of the project site devoted to lawn and landscaping with their associated fertilization and pest control usage as opposed to impervious surfaces.

Although the proposed project's water quality impacts have been mitigated to less than significant, the impacts in this environmental category are evaluated as less for this alternative than for the project.

## **LAND USE AND PLANNING**

Under the Reduced Intensity alternative, the mix of uses envisioned by the City's Cumulative General Plan Build-Out scenario which includes the Morgan Ranch Specific Plan as "Southeast 1", would be realized, but at a smaller scale than the proposed project. Therefore, although the City's General Plan designated goals and objectives would be met, this alternative is less environmentally superior.

## **NOISE**

The Reduced Intensity alternative would eliminate construction activities, as such; there would be a reduced impact from noise and vibration to nearby sensitive receptors. In addition, effects to sensitive receptors due to traffic noise generated from State Route 99, and the addition of 9,632 vehicles added to the project site, would be less than that of the proposed project. Therefore this alternative would result in a 50% reduction of short-term and long-term noise impacts and is environmentally superior.

## **POPULATION AND HOUSING**

Housing would be provided in accord with the Turlock General Plan and Municipal Code and no existing housing would be displaced under the Reduced Intensity alternative. With this alternative the City's Cumulative General Plan Build-Out scenario, which includes the Morgan Ranch Specific Plan as "Southeast 1", is realized, but to a lesser degree than the proposed project. The impacts of this alternative would be considered less environmentally superior compared to the proposed project.

## **PUBLIC SERVICES AND UTILITIES**

Compared to the proposed project, a 50% reduction in demand for fire and emergency protection services, schools and library services, and facilities would be achieved under the Reduced Intensity alternative. This alternative would therefore be considered environmentally superior than those of the proposed project.

Under this alternative, domestic water demand will be reduced by nearly half. Outdoor landscaping water demand will increase somewhat because of reduced impervious surfaces (buildings, driveways, etc.) and increased landscaped area. The net effect of all these changes will be a reduction in impact on the subbasin's aquifer and on water supply requirements.

Under the Reduced Intensity alternative, a 50% reduction in the additional demand would be generated for area utilities and service systems. In comparison to the proposed project at buildout, this alternative would reduce wastewater collection and treatment loadings, potable water demand, and solid waste collection and disposal needs, as well as the need for offsite service system improvements to water distribution and sewer collection systems. This alternative would be environmentally superior.

## **RECREATION**

The Reduced Intensity alternative would require that one park be built and fees be paid. The City's General Plan requires 3.5 acres of parkland per 1,000 residents. Currently, the City meets its parkland needs with 249 acres of parkland. This alternative would include one park on 8.7 acres with no parkland fees. The proposed project would add more than 2 new parks with a lifespan that would surpass some of the City's existing parks. However, this alternative would not include payment of parkland fees so is environmentally superior.

## **TRANSPORTATION/TRAFFIC**

Daily traffic trips would be reduced from 19,264 to 9,632 under the Reduced Intensity alternative. The LOS at intersections and along roadway segments would be less than that of the proposed project. With this alternative the Cumulative General Plan Build-Out scenario, which includes Morgan Ranch Specific Plan as "Southeast 1", would not be recognized. There would be a 50% reduction in new roads and/or intersections to accommodate future growth. Therefore this alternative would be considered less environmentally superior to the proposed project.

### **5.6.4.2 Ability to Reduce Environmental Effects**

In comparison to the proposed project, the Reduced Intensity alternative would reduce impacts to the following environmental resource areas: aesthetics, air quality, biological resources, geology and soils, hazards and hazardous materials, hydrology/ water quality, noise, public services and utilities, and greenhouse gas emissions. Impacts to land use, population and housing, recreation, and transportation and traffic would be less with proposed project. Significant project impacts to agricultural resources and air quality would not be eliminated under the Reduced Intensity alternative. Impacts to agricultural resources and cultural resources would be the same under

both alternatives. This alternative substantially reduces the environmental impacts in comparison to the proposed project, but does not eliminate all significant and unavoidable impacts.

**5.6.4.3 Ability to Achieve Project Objectives**

It may not be feasible to meet all the project’s objectives with the Reduced Intensity alternative.

**5.6.5 INCREASED INTENSITY ALTERNATIVE**

As an example of the comparative environmental effects of a project alternative designed at increased intensity, it is assumed that the project would be constructed on the northerly 136 acres (the northerly 80 %) of the project site leaving the southerly 34 acres in periodic agricultural production. This alternative would have the following total land uses listed in Table 5-1.

**Table 5-1  
Increased Intensity Land Uses by Acreage**

<b>Land Use Designation</b>	<b>Approximate Acreage</b>
Medium Density Residential	88.7
High Density Residential	12.7
Community Commercial	8.9
Office	1.5
Park	8.7
Detention Basin	4.4
Public (School)	11.1

Note: Agriculture would include portions of APNs 044-028-007, 044-028-014, 044-028-013, and 044-028-010.  
 Note: 80% of 170 = 136 acres. 136 acres – 34.6 acres of other uses= 101.4 acres. 12.5% (% same as proposed project) of 101.4 acres=12.7 acres of High Density Residential. Then Medium Density Residential = 88.7.

A similar total population would accommodate 5,199 persons in approximately 1,699 units at 3.06 persons per unit. The floor area ratio in the commercial and office areas would remain the same, as would the school, parks, and the detention basin. The increased intensity residential land uses would change to the following units listed in Table 5-2.

**Table 5-2  
Increased Intensity Residential Units**

Medium Density Residential:	88.7 acres @ 15 DU/acre =	1330.5 DU
High Density Residential:	15.9 acres @ 23 DU/acre =	368.3 DU
	Total:	1699 DU(rounded)

Note: Alternative = 1699 units – proposed project 1660= 39 additional units.

It is evident that a number of residential land use acreages and dwelling unit (DU) intensities within those acreages could be assumed. However, these changes would result in similar comparative environmental effects vis-à-vis the proposed project. All would, of necessity, involve increased ratios of medium high density residential land use to the total residential area.

This alternative may not be either desirable from a City land use standpoint or economically feasible. It would, however, partially fulfill the project objectives (Section 5.3.6.3 of this EIR).

#### **5.6.5.1 Analysis**

#### **AESTHETICS**

With the Increased Intensity alternative, onsite aesthetics would have a more urbanized appearance compared to the proposed project due to the smaller lot sizes. In addition, lighting would be increased as a result of more houses and thereby would add to light pollutant. This alternative is less environmentally superior to the proposed project.

#### **AGRICULTURAL RESOURCES**

Impacts from the Increased Intensity alternative would be less than those of the proposed project because 34 acres of agricultural land would be retained. However, the impact would still be significant due to the loss of 136 acres of prime agriculture land. There is no environmentally superior alternative.

#### **AIR QUALITY**

The Increased Intensity alternative would result in both construction and operational related criteria air pollutant impacts from approximately: 1331 medium density homes, 368 high density homes, 96,921 sq. ft. of community commercial space, 16,335 sq. ft. of office space, two 4.35 acre parks, 11.1 acre school, and a 4.4 acre detention pond. Compared to air emissions from the proposed project, this alternative would produce more criteria pollutants and therefore is considered less environmentally superior.

#### **BIOLOGICAL RESOURCES**

Under the Increased Intensity alternative, 136 acres of the project site would be developed and no longer utilized for agricultural activities. This alternative would retain 34 acres of agricultural land where some species may forage or nest. Therefore, this impact would still less than that of the proposed project and would be considered environmentally superior.

#### **CULTURAL RESOURCES**

During construction of the site, the likelihood of uncovering cultural resources is equal under both the Increased Intensity alternative and the proposed project. For example, during grading an artifact may be uncovered in the same area of the property under either this alternative or the proposed project. Therefore, no environmentally superior alternative exists.

#### **GEOLOGY AND SOILS**

Grading and excavation of the site would also occur under the Increased Intensity alternative. More human occupied structures would be built and subject to the potential seismic related

hazards associated with ground shaking. Geologic impacts for this alternative, therefore, would be increased in comparison to the proposed project. Due to the addition of human occupied structures and people, this alternative is less environmentally superior.

### **HAZARDS AND HAZARDOUS MATERIALS**

The Increased Intensity alternative would have more potential to result in hazardous materials mishaps associated with construction and increased operational activities. This alternative would require construction equipment for a longer period of time, and result in increased potential hazardous situations. This alternative is therefore less environmentally superior.

### **HYDROLOGY/ WATER QUALITY**

Water quality impacts will be slightly, but not appreciably, increased because of the similar population but greater amount of impervious surface area.

The impacts in this environmental category will thus be less than the less than significant impacts of the project.

### **LAND USE AND PLANNING**

Under the Increased Intensity alternative, the mix of uses envisioned by the City's Cumulative General Plan Build-Out scenario that includes Morgan Ranch Specific Plan as "Southeast 1" would not be realized as agricultural land would prevent full build-out. The City's General Plan designated goals and objectives would not be met and therefore, this alternative is less environmentally superior.

### **NOISE**

Construction generated noise and vibration to nearby sensitive receptors under the Increased Intensity alternative would have a longer impact than the proposed project. In addition, due to traffic noise generated from State Route 99 and the addition of vehicles, operational impact would also be more significant. Consequently, this alternative would result in short-term and long-term noise impacts and is less environmentally superior.

### **POPULATION AND HOUSING**

Housing would be provided in accord with the Turlock General Plan and Municipal Code and no existing houses would be displaced under the Increased Intensity alternative. With this alternative the City's Cumulative General Plan Build-Out scenario, which includes Morgan Ranch Specific Plan as "Southeast 1", is realized. This alternative might also assist the City in meeting General Plan Housing Element goals by enabling it to better achieve affordable-housing objectives with the intensity related likelihood that the number of smaller units to be constructed would facilitate such an objective. The impacts of this alternative would be considered environmentally superior compared to the proposed project.

## **PUBLIC SERVICES AND UTILITIES**

Due to the addition of 68 residential units, the demand for fire and emergency protection services, schools and library services, and facilities would be more under the Increased Intensity alternative. This alternative would therefore be considered less environmentally superior than compared to the proposed project.

The lake's water demand will be approximately  $\frac{2}{3}$  that of the project's larger lake except that, because of increased rainfall runoff supply due to increased hardscape from more intense residential development, proportional water demand may be slightly reduced. Domestic water demand will be the same; outdoor landscaping water demand will be less. The net effect of these changes will predictably be a reduction in impact on the subbasin's aquifer and on water supply requirements.

An additional demand would be generated from area utilities and service systems with the Increased Intensity alternative. In comparison to the proposed project at buildout, this alternative would increase wastewater collection and treatment loadings, potable water demand, and solid waste collection and disposal needs, as well as the need for offsite service system improvements to water distribution and sewer collection systems. This alternative would be less environmentally superior.

## **RECREATION**

The Increased Intensity alternative would require that additional fees be paid. The City's General Plan requires 3.5 acres of parkland per 1,000 residents. Under this alternative 18.4 acres of parkland would be required. The total acreage devoted to parkland includes 8.7 acres. Substantial parkland fees would therefore be required. Compared to the proposed project, this alternative is less environmentally superior.

## **TRANSPORTATION/TRAFFIC**

Under the Increased Intensity alternative more daily trips would occur than with the proposed project, due to adding an additional 39 residential units (Table 5-2 notes). The LOS at intersections and along roadway segments would be more than that of the proposed project. With this alternative the Cumulative General Plan Build-Out scenario, which includes Morgan Ranch Specific Plan as "Southeast 1", would be not be recognized. Therefore this alternative would be considered less environmentally superior to the proposed project.

## **GREENHOUSE GAS EMISSIONS**

The site would continue producing GHG emissions generated at a higher level than the proposed project. Compared to the proposed project, the Increased Intensity alternative would generate; 1,331 medium density residents, 368 high density residents, 96,921 sq. ft. of community commercial, 16,335 sq. ft. office, two 4.35 acre parks, 11.1 acre school, and 4.4 acre detention pond. This alternative is therefore less environmentally superior.

### **5.6.5.2 Ability to Reduce Environmental Effects**

In comparison to the proposed project, the Increased Intensity alternative would reduce impacts to the following environmental resource areas: population and housing. Impacts to aesthetics, air quality, biological resources, hazards and hazardous materials, hydrology/ water supply/ water quality, land use, noise, population and housing, recreation, and transportation and traffic, public services and utilities, and greenhouse gas emissions would be less with proposed project. Significant project impacts to agricultural resources and air quality would not be eliminated under the Increased Intensity alternative. In addition, the alternative would also result in significant impacts to cultural resources. This alternative does not substantially reduce the environmental impacts in comparison to the proposed project, and does not eliminate significant and unavoidable impacts.

### **5.6.5.3 Ability to Achieve Project Objectives**

The Increased Intensity alternative does not achieve all of the objectives of the proposed project.

## **5.7 Environmentally Superior Alternative**

CEQA requires a lead agency to identify the "environmentally superior alternative" and, in cases where the "No Project/ No Build" alternative is environmentally superior to the proposed project, the environmentally superior development alternative must be identified. The relative impacts of each project alternative in comparison to the proposed project are summarized in Table 4-1. Since the No Project/ No Build/No Build alternative would eliminate all but one of the significant, unavoidable impacts of the proposed project, it is environmentally superior. Among the two other alternatives analyzed, the Reduced Intensity alternative would be considered an environmentally superior alternative. Accordingly, the superior development alternative is the Reduced Intensity Alternative; it has less environmental effect than either the Proposed Project or the Increased Intensity Alternative (see Table 5-3).

**Table 5-3  
Proposed Project vs. Project Alternatives  
Comparison of Environmental Impacts**

<b>Environmental Impact</b>	<b>Proposed Project</b>	<b>No Project/ No Build - Alternative</b>	<b>Reduced Intensity Alternative</b>	<b>Increased Intensity Alternative</b>
Aesthetics	PS	<	<	>
Agricultural Resources	S	<	S	S
Air Quality	S	<	<	S
Biological Resources	PS	<	<	<
Cultural Resources	PS	S	S	S
Geology and Soils	PS	<	<	>
Greenhouse Gas Emissions	LS	<	<	>
Hazards and Hazardous Materials	PS	<	<	>
Hydrology/ Water Quality	PS	<	<	>
Land Use and Planning	LS	=	=	=
Noise	PS	<	<	>
Population/Housing	LS	>	>	<
Public Services and Utilities	PS	<	<	>
Recreation	PS	>	>	>
Transportation/Traffic	PS	>	>	>

< Impacts would be less than those of the proposed project

> Impacts would be greater than those of the proposed project

= Impacts would be similar to the proposed project

LS Less than Significant

PS Potentially Significant

S Significant Impact (> impacts could not be mitigated to less than significant)

\* Eliminates a significant impact

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**CHAPTER SIX**  
**OTHER CEQA REQUIREMENTS**

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## CHAPTER SIX – OTHER CEQA REQUIREMENTS

### 6.1 Significant Unavoidable Environmental Effects

The CEQA Guidelines, Section 15126.2(b), requires a description of any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described. The project was evaluated with respect to specific resource areas to determine whether implementation would result in significant adverse impacts.

The potentially significant environmental impacts that would result from implementation of the proposed project are summarized in Table ES-1 in the Executive Summary of this Draft EIR. In some cases, impacts that have been identified would be less than significant. In other instances, incorporation of the mitigation measures proposed in this Draft EIR would reduce the impacts to levels that are less than significant. Although the proposed project contains policies and guidelines that mitigate certain impacts, no mitigation measures have been identified to reduce the following impacts to a less-than-significant level. Those impacts that cannot feasibly be mitigated to a less-than-significant level, or for which no mitigation measures are available, would remain as significant unavoidable adverse impacts, as described below.

#### AGRICULTURAL RESOURCES

Impact #3.2.1 – Conversion of 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 uses.

#### AIR QUALITY

Impact #3.3.1 – Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Impact #3.3.3 – Conflict with or obstruct implementation of any applicable air quality plan.

Impact #3.3.4 – Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

#### TRANSPORTATION/TRAFFIC

Impact #3.15.1 – Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the

circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

## **6.2 Significant Irreversible Environmental Changes**

Section 15126.2(c) of the CEQA Guidelines requires an EIR to address significant irreversible environmental effects, which cannot be avoided if the proposed project is implemented.

Where the decision of the public agency allows the occurrence of significant effects which are identified in the Final EIR but are not at least substantially mitigated, the agency shall state in writing the specific reasons to support its action based on the Final EIR and/or the information in the record (Section 15093(b)). This statement is called a “Statement of Overriding Considerations.” This statement will be prepared at the end of the CEQA review process, after the Final EIR for this project has been completed.

Implementation of the proposed project would result in the short-term commitment of nonrenewable and/or slowly renewable energy resources and natural resources including lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, and water due to construction activities. As the project site develops, residential and nonresidential development would require further commitment of energy resources in the form of natural gas and electricity. Increased motor vehicular travel as a result of the increased commitment of public services would also be required.

Significant impacts resulting from development of the proposed project, for which complete mitigation is unavailable, infeasible, or outside the jurisdiction of the City of Turlock to implement, are summarized in Section 6.1, Significant Unavoidable Environmental Impacts, and are described in detail in the appropriate subsections in Chapter Three of this Draft EIR.

## **6.3 Irreversible Changes to the Environment**

Implementation of the proposed project would result in the long-term commitment of resources to serve the proposed project site. The most notable significant irreversible impacts are increased generation of air pollutants and noise from additional vehicular traffic. Implementation of the proposed project will also result in the short-term commitment of non-renewable and/or slowly renewable natural and energy resources such as lumber and other forest products, mineral resources, and water resources during construction activities. These irreversible impacts, which are currently unavoidable consequences of urban development, are described in detail in the appropriate sections of Chapter Three of this Draft EIR.

## **6.4 Growth-Inducing Impacts**

Section 15126.2(d) of the CEQA Guidelines requires a discussion of how the potential growth-inducing impacts of the proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Direct population growth occurs when a project would result in the construction of a substantial amount of new housing or otherwise directly cause a substantial increase in a community's population. Indirect growth inducement occurs when a project would extend infrastructure to undeveloped areas, remove obstacles to population growth, or otherwise encourage activities that cause significant environmental effects. Induced growth is distinguished from the direct employment, population, or housing growth of a project. If a project has characteristics that "may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively," then these aspects of the project must be discussed as well. Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place in the absence of the proposed project. For example, a project could induce growth by lowering or removing barriers to growth or by creating or allowing a use such as an industrial facility that attracts new population or economic activity. CEQA Guidelines also indicate that the topic of growth should not be assumed to be either beneficial or detrimental.

### **6.4.1 DIRECT AND INDIRECT GROWTH INDUCEMENT**

A key consideration in evaluating growth inducement is whether the activity in question constitutes "planned growth". A residential project that is consistent with the underlying General Plan and zoning designations would generally be considered planned growth because it was previously contemplated by these long-range documents, and, thus, would not be deemed to have a significant growth-inducing effect. Likewise, a project that requires a General Plan Amendment and re-zone to develop more intense uses than are currently allowed may be considered to have a substantial growth-inducing effect because such intensity was not contemplated by the applicable long-range documents. It should be noted that these are hypothetical examples, and conclusions about the potential for growth inducement will vary on a case-by-case basis.

### **6.4.2 DIRECT POPULATION GROWTH AND REMOVAL OF BARRIER TO GROWTH**

Project implementation will have a direct growth inducing impact because the project includes proposed dwellings. The proposed project would result in the extension of urban infrastructure to a project site that is currently not served to the level required for proposed land uses.

## **6.5 Effects Not Found to be Significant**

CEQA Guidelines, Section 15128, 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 were therefore not discussed in detail in the EIR." During the scoping process for this EIR, it was determined that certain environmental topics cited in the Notice of Preparation (NOP) would not be evaluated in detail; therefore, the Project was analyzed in detail with respect

to certain environmental areas described within the Appendix G guidelines and other environmental topics were dismissed from further analysis. To the extent a particular Project feature was not analyzed in detail in any given discussion of an impact area, it is implied that this Project feature did not result in a significant impact.

Results of the comprehensive environmental analysis are presented in Chapter Three of this EIR. Most impacts were found to be either less than significant or below a level of significance after mitigation.

## **6.6 Energy Conservation**

Public Resources Code Section 21100(b)(3) and CEQA Guidelines Section 15126.4 require EIRs to describe, where relevant, the wasteful, inefficient, and unnecessary consumption of energy caused by a project. In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted AB 1575, which created the California Energy Commission (CEC). The statutory mission of the CEC is to forecast future energy needs, license thermal power plants of 50 megawatts or larger, develop energy technologies and renewable energy resources, plan for and direct state responses to energy emergencies, and—perhaps most importantly—promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code Section 21100(b)(3) to require EIRs to consider the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F of the CEQA Guidelines. Appendix F is an advisory document that assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. For the reasons set forth below, this EIR concludes that the proposed project will not result in the wasteful, inefficient, and unnecessary consumption of energy, will not cause the need for additional natural gas or electrical energy-producing facilities, and, therefore, will not create a significant impact on energy resources.

### **6.6.1 REGULATORY SETTING**

Federal and state agencies regulate energy use and consumption through various means and programs. At the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure improvements. At the state level, the California Public Utilities Commission (CPUC) and the CEC are two agencies with authority over different aspects of energy. The CPUC regulates privately owned utilities in the energy, rail, telecommunications, and water fields. The CEC collects and analyzes energy-related data, prepares statewide energy policy recommendations and plans, promotes and funds energy efficiency programs, and adopts and enforces appliance and building energy efficiency standards. California is exempt under federal law from setting state fuel economy standards for new on-road motor vehicles. Some of the more relevant federal and state energy-related laws and plans are discussed below.

### **Federal Energy Policy and Conservation Act**

The Federal Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the United States Department of Transportation, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model; rather, compliance is determined on the basis of each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. The Corporate Average Fuel Economy (CAFE) program, which is administered by United States Environmental Protection Agency, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The United States Environmental Protection Agency calculates a CAFE value for each manufacturer, based on city and highway fuel economy test results and vehicle sales. On the basis of the information generated under the CAFE program, the United States Department of Transportation is authorized to assess penalties for noncompliance. In the course of its over 30-year history, this regulatory program has resulted in vastly improved fuel economy throughout the nation's vehicle fleet.

### **Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)**

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) such as ABAG were required to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process for specific projects would then address these policies. Another requirement was to consider the consistency of transportation planning with federal, State, and local energy goals. Through this requirement, energy consumption was expected to become a decision criterion, along with cost and other values that determine the best transportation solution.

### **The Transportation Equity Act for the 21st Century (TEA-21)**

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the

transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

### ***State of California Energy Plan***

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including providing assistance to public agencies and fleet operators, encouraging urban designs that reduce vehicle miles traveled, and accommodating pedestrian and bicycle access.

### ***Title 24, Energy Efficiency Standards***

Title 24, which was promulgated by the CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption, provides energy efficiency standards for residential and nonresidential buildings. According to the CEC, since the energy efficiency standards went into effect in 1978, it is estimated that California residential and nonresidential consumers have reduced their utility bills by at least \$15.8 billion. The CEC further estimates that by 2011, residential and nonresidential consumers will save an additional \$43 billion in energy costs.

In 2008, the CEC adopted new energy efficiency standards. All projects that apply for a building permit after January 1, 2010 must adhere to the new 2008 standards. A copy of the 2008 Energy Efficiency Standards may be reviewed online at [www.energy.ca.gov/title24/2008standards/index/html](http://www.energy.ca.gov/title24/2008standards/index/html).

Because the adoption of Title 24 post-dates the adoption of AB 1575, it has generally been the presumption throughout the State that compliance with Title 24 (as well as compliance with the federal and state regulations discussed above) ensures that projects will not result in the inefficient, wasteful, and unnecessary consumption of energy. As is the case with other uniform building codes, Title 24 is designed to provide certainty and uniformity throughout the State while ensuring that the efficient and non-wasteful consumption of energy is carried out through design features. Large infrastructure transportation projects that cannot adhere to Title 24 design-build performance standards may, depending on the circumstances, undertake a more involved assessment of energy conservation measures in accordance with some of the factors set forth in Appendix F of the CEQA Guidelines. As an example, pursuant to the California Department of Transportation CEQA implementation procedures and FHWA Technical Advisory 6640.8A, a detailed energy study is generally only required for large-scale infrastructure projects. However, for the vast majority of residential and nonresidential projects, adherence to Title 24 is deemed necessary to ensure that no significant impacts occur from the inefficient, wasteful, and unnecessary consumption of energy. As a further example, the adoption of federal vehicle fuel standards, which have been continually improved since their original

adoption in 1975, have also protected against the inefficient, wasteful, and unnecessary use of energy.

According to the CEC, reducing energy use has been a benefit to all. Building owners save money, Californians have a more secure and healthy economy, the environment is less negatively impacted, and our electrical system can operate in a more stable state. The 2008 Standards (for residential and nonresidential buildings) are expected to reduce the growth in electricity use by 561.2 gigawatt-hours per year (GWh/y) and reduce the growth in natural gas use by 19 million therms per year (therms/y). The savings attributable to new nonresidential buildings are 151.2 GWh/y of electricity savings and 3.3 million therms. Additional savings result from the application of the Standards on building alterations, outdoor lighting, and refrigerated warehouses. In particular, non-residential alteration requirements for cool roofs, insulation, and interior lighting are expected to save about 270.5 GWh/y of electricity. Outdoor lighting and refrigerated warehouse requirements are expected to save an additional 37.3 GWh/y of electricity. These savings will accumulate as the Standards affect each subsequent year of construction—doubling in two years, tripling in three, etc.

Since the California 2000–2001 electricity crisis, the CEC has placed greater emphasis on demand reductions. Changes in 2001 (following the electricity crisis) reduced electricity demand for newly constructed residential and nonresidential buildings by about 110.3 megawatts (MW) each year. Newly constructed nonresidential buildings account for 44.0 MW of these savings. Like energy savings, demand savings accumulate each year. The 2008 Standards are expected to reduce electric demand by another 131.8 MW each year. Table 6.6-2 provides a summary of the demand savings envisioned by the 2008 standards.

In many parts of the world, the wasteful and poorly managed use of energy has led to oil spills, acid rain, smog, and other forms of environmental pollution that have ruined the natural beauty people seek to enjoy. California is not immune to these problems, but the CEC-adopted appliance standards, building standards, and utility programs that promote efficiency and conservation have gone a long way toward maintaining and improving environmental quality. Other benefits include reduced destruction of natural habitats, which, in turn, helps protect wildlife, plants, and natural systems.

Many experts believe that burning fossil fuel is a major contributor to global warming; carbon dioxide is being added to an atmosphere already containing 25 percent more than it did two centuries ago. Carbon dioxide and other greenhouse gases create an insulating layer around the Earth that leads to global climate change. CEC research shows that most of the sectors of the State economy face significant risk from climate change, including agriculture, forests, and the natural habitats of a number of indigenous plants and animals.

Scientists recommend that actions be taken to reduce emissions of carbon dioxide and other greenhouse gases. While adding scrubbers to power plants and catalytic converters to cars are steps in the right direction (both of which are currently enforced as part of existing regulatory schemes), the use of energy-efficient standards can be effective actions to limit the carbon dioxide that is emitted into the atmosphere. According to the CEC, using energy efficiently, in

accordance with Title 24 Energy Efficiency standards, is a proven, far-reaching strategy that can and does present an important contribution to the significant reduction of greenhouse gases.

Pursuant to the California Building Standards Code and the Title 24 Energy Efficiency Standards, the City will review the design and construction components of the project's Title 24 compliance when specific building plans are submitted.

#### **6.6.2 ENERGY REQUIREMENTS OF THE PROPOSED PROJECT**

Energy demand associated with the proposed project is described in Section 3.13 of this Draft EIR.

## CHAPTER SEVEN

### EFFECTS FOUND NOT TO BE SIGNIFICANT

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## CHAPTER SEVEN – EFFECTS FOUND NOT TO BE SIGNIFICANT

### 7.1 Introduction

This section is based on the Notice of Preparation (NOP), dated February 14, 2012, and is contained in Appendix A of this Environmental Impact Report (EIR). The NOP was prepared to identify the potentially significant effects of the proposed projects and was circulated for public review between February 14, 2012 and March 14, 2012. In the course of this evaluation, certain impacts were found to be less than significant because the proposed project's characteristics would not create such impacts. This section provides a brief description of effects found not to be significant or less than significant, based on the NOP comments or more detailed analysis conducted as part of the EIR preparation process. Note that a number of impacts that are found to be less than significant are addressed in the various EIR topical sections (Sections 3.1 through 3.13) to provide more comprehensive discussion of why impacts are less than significant, in order to better inform decision makers and the general public.

### 7.2 Effects Found Not To Be Significant

#### 7.2.1 AESTHETICS

##### *Scenic Vistas*

The project site contains agricultural land, rural residential dwelling units and ornamental vegetation. There are no features commonly associated with scenic vistas onsite (e.g., peaks, ridgelines, overlooks, etc.). In addition, the Sierra Nevada Mountains and Coast Range are not visible from the project site. Therefore, the proposed project would not have the potential to adversely affect a scenic vista. No impacts would occur.

##### *Scenic Highways*

Interstate 5 is the only officially designated State Scenic Highway in Stanislaus County. This highway is more than 18 miles from the Master Plan area. This condition precludes the possibility of any adverse impact on a State Scenic Highway as a result of project implementation. No impacts would occur.

#### 7.2.2 AGRICULTURAL RESOURCES

##### *Conflicts with Agricultural Zoning or a Williamson Act Contract*

##### **AGRICULTURAL ZONING**

The Turlock Zoning Ordinance currently zones the project site Heavy Commercial (H-C), High Density Residential (R-H), Low and Medium Density Residential (R-L 4.5), and Low Density Residential (R-L), which are non-agricultural zoning designations. This condition precludes the possibility of the proposed project conflicting with an agricultural zoning designation. No impacts would occur.

## **WILLIAMSON ACT CONTRACT**

There are no active Williamson Act contracts encumbering the parcels comprising the project site. Therefore, no conflicts with a Williamson Act contract would occur. No impacts would occur.

### ***Conflicts with Forest Zoning***

The Turlock Zoning Ordinance currently zones the project site Heavy Commercial (H-C), High Density Residential (R-H), Low and Medium Density Residential (R-L 4.5), and Low Density Residential (R-L), which are non-forest zoning designation. This condition precludes the possibility of the proposed project conflicting with a forest zoning designation. No impacts would occur.

### ***Conversion of Forest Land to Non-Forest Use***

The project site does not contain any forestland or timberland. Therefore, land use and development activities contemplated by the proposed project would not impact these resources. No impacts would occur.

## **7.2.3 BIOLOGICAL RESOURCES**

### ***Riparian Habitat/Sensitive Natural Communities***

The project site does not contain any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or USFWS. No impacts would occur.

### ***Wetlands***

The project site contains an unvegetated, cement-lined irrigation lateral approximately 600 meters in length along the southern portion of the property near State Route 99 (SR 99). This irrigation lateral is fed by Lateral No.5, which is located approximately 0.5 mile south of the project site. The lateral terminates on the western portion of the project site (Turlock Irrigation District, pers. comm.). Given the artificial nature of this lateral, and its lack of connectivity with traditionally navigable waters, this feature is not expected to be under the jurisdiction of the USACE. Accordingly, the project site does not contain any federally protected wetlands subject to Section 404 of the Clean Water Act. No impacts would occur.

### ***Conservation Plans***

The project site is not within the boundaries of an adopted habitat conservation plan or natural community conservation plan. No impacts would occur.

## 7.2.4 GEOLOGY, SOILS, AND SEISMICITY

### *Septic and Alternative Wastewater Disposal Systems*

The project would be served by sanitary sewers and would not require the installation of septic or alternative wastewater disposal systems. No impacts would occur.

## 7.2.5 HAZARDS AND HAZARDOUS MATERIALS

### *Wildland Fires*

The City of Turlock is an urban built up environment. The undeveloped areas surrounding the City contain cultivated agriculture fields and rural residential land uses. As such, wildland fire risks are extremely low. According to the California Department of Forestry and Fire Protection, the project site lies in an urbanized developed area outside of wildland fire hazard zones. Therefore, development of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. No impacts would occur.

## 7.2.6 HYDROLOGY AND WATER QUALITY

### *100-Year Flood Hazards*

The General Plan EIR determined that the City of Turlock and the Master Plan Areas (includes the project site) are not within the Federal Emergency Management Agency's 100-year floodplain nor are they within the California Department of Water Resources 200-year floodplain. The project site is located on Flood Insurance Rate Map Community Panel No. 06099C0825E. This panel is not printed by the Federal Emergency Management Agency because there are no special flood hazard areas within the map area. These conditions preclude the possibility of the project locating housing or structures within a 100-year flood hazard area. No impacts would occur.

### *Levee or Dam Failure*

The Turlock General Plan Safety Element states that Turlock Study Area, which includes the project site, is entirely outside the Dam Inundation Area for New Don Pedro Dam. According to the Turlock General Plan Safety Element, Figure 10-3, an area in the far southwest of the Turlock Study Area falls within the Dam Inundation Area for New Exchequer Dam, located on the Merced River in Mariposa County. However, the project site is not within this area. Accordingly, the project would not expose people or structures to flooding as result of dam failure.

There are no levees within or upstream of Turlock. This condition precludes the possibility of levee failure resulting in flooding of the project site. No impacts would occur.

**Seiches, Tsunamis, or Mudflows**

There are no inland water bodies that could be potentially susceptible to a seiche in the project vicinity. This precludes the possibility of a seiche inundating the project site.

The project site is more than 80 miles from the Pacific Ocean, a condition that precludes the possibility of inundation by tsunami.

There are no steep slopes that would be susceptible to a mudflow in the project vicinity, nor are there any volcanically active features that could produce a mudflow in the City of Turlock. This precludes the possibility of a mudflow inundating the project site. No impacts would occur.

**7.2.7 LAND USE AND PLANNING**

***Conservation Plans***

The project site is not within the boundaries of a habitat conservation plan or natural community conservation plan. This condition precludes the possibility of the proposed project conflicting with the provisions of such a plan. No impacts would occur.

**7.2.8 MINERAL RESOURCES**

***Mineral Resources of Statewide or Local Importance***

The project site does not contain any known mineral deposits or active mineral extraction operations. According to the City of Turlock General Plan, there are no historic or current mining operations other than minor excavations for fill material, which is not considered a significant resource within the General Plan study area (which includes the project site). This condition precludes the possibility of the loss of important mineral resources as a result of the development of the proposed project. No impacts would occur.

## CHAPTER EIGHT

### LIST OF PREPARERS AND PERSONS CONSULTED

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## **CHAPTER EIGHT – LIST OF PREPARERS AND PERSONS CONSULTED**

### **8.1 Lead Agency**

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**CHAPTER NINE**

**REFERENCES**

## CHAPTER NINE – REFERENCES

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**APPENDICES – provided on CD (enclosed)**

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Biology

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