Mitigation Monitoring and Reporting Program for

City of Manteca Wastewater Quality Control Facility and Collection System Master Plans Update Project

Prepared for:

City of Manteca

Prepared by:

EDAW

2022 J Street

Sacramento, CA 95811

January 2008

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City of Manteca Wastewater Quality Control Facility and Collection System Master Plans Update Project

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MITIGATION MONITORING AND REPORTING PROGRAM

INTRODUCTION

This environmental Mitigation Monitoring and Reporting Program (MMRP) has been prepared pursuant to the California Environmental Quality Act (CEQA) and the State CEQA Guidelines to provide for the monitoring of mitigation measures required of the Manteca Wastewater Quality Control Facility (WQCF) and Collection System Master Plans Update Project (proposed project) as set forth in the Final Environmental Impact Report (Final EIR) prepared for the project.

Section 21081.6 of the California Public Resources Code and Section 15091(d) and 15097 of the State CEQA Guidelines require public agencies "to adopt a reporting or monitoring program for changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment." A Mitigation Monitoring and Reporting Program (MMRP) is required for the proposed project because the EIR for the project identified potentially significant adverse impacts related to construction and implementation activities, and mitigation measures have been identified to reduce most of those impacts to a less-than-significant level.

This MMRP will be adopted by the City Council when it approves the project.

This MMRP will be kept on file at the City of Manteca Public Works Department, 1001 West Center Street, Manteca, CA 95337.

PURPOSE OF THE MMRP

This MMRP has been prepared to ensure that all required mitigation measures are implemented and completed according to schedule and maintained in a satisfactory manner during project construction and implementation, as required. The MMRP may be modified by the City during project implementation, as necessary, in response to changing conditions or other refinements. A summary table (attached) has been prepared to assist the responsible parties in implementing the MMRP. The table identifies individual mitigation measures, monitoring/mitigation timing, responsible person/agency for implementing the measure, monitoring procedures, and a record of implementation of the mitigation measures. The numbering of mitigation measures follows the numbering sequence found in the EIR.

ROLES AND RESPONSIBILITIES

Unless otherwise specified herein, the City is responsible for taking all actions necessary to implement the mitigation measures according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. The City at its discretion may delegate implementation responsibility or portions thereof to a licensed contractor.

The City will be responsible for overall administration of the MMRP and for verifying that City staff or a qualified construction contractor has completed the necessary actions for each measure. The City will designate a project manager to oversee the MMRP during the construction period. Duties of the project manager include the following:

- Ensure that routine inspections of construction sites are conducted by appropriate City staff; and check plans, reports, and other documents required by the MMRP.

- Serve as a liaison between the City and the construction contractor regarding mitigation monitoring issues.

- Complete forms and maintain records and documents required by the MMRP.
- Coordinate and ensure that corrective actions or enforcement measures are taken, if necessary.

MONITORING SCHEDULE

Before the issuance of grading permits, City staff will be responsible for ensuring compliance with mitigation monitoring applicable to the project. City staff will prepare reports identifying compliance with mitigation measures. Once construction begins, monitoring of mitigation measures associated with construction will be included in the responsibilities of designated City staff who shall prepare reports of such monitoring no less than once per month until construction completes. Once construction is completed, the City will monitor the project as deemed necessary.

CHANGES TO MITIGATION MEASURES

Any substantive change in the MMRP made by City staff shall be reported in writing. Reference to such changes shall be made in the monthly or annual Environmental Mitigation Monitoring Report prepared by City staff. Modifications to the mitigation measures may be made by City staff subject to one of the following findings and documented by evidence included in the record:

1. The mitigation measure included in the Final EIR and the MMRP is no longer required because the significant environmental impact identified in the Final EIR has been found not to exist or to occur at a level which makes the impact less than significant as a result of changes in the project, changes in conditions of the environment, or other factors.

   OR

2. The modified or substitute mitigation measure to be included in the MMRP provides a level of environmental protection equal to or greater than that afforded by the mitigation measure included in the Final EIR and the MMRP.

   AND

3. The modified or substitute mitigation measures do not have significant adverse effects on the environment in addition to or greater than those which were considered by the responsible hearing bodies in their decisions on the Final EIR and the proposed project.

   AND

4. The modified or substitute mitigation measures are feasible, and the City, through measures included in the MMRP or other City procedures, can assure their implementation.

Findings and related documentation supporting the findings involving modifications to mitigation measures shall be maintained in the project file with the MMRP and shall be made available to the public upon request.

MMRP SUMMARY TABLE

The MMRP Summary Table that follows should guide the City in its evaluation and records of the implementation of mitigation measures.

The column categories identified in the MMRP Summary Table are described below:

Mitigation Number – lists the mitigation measures by number.

Mitigation Measure – provides the text of the mitigation measures identified in the EIR.

Timing/Schedule – lists the time frame in which the mitigation will take place.

Implementation Responsibility – identifies the entity responsible for complying with the requirements of the mitigation measure.

Implementation and Verification – verifies compliance. The "Action" column describes the type of action taken to verify implementation. The "Date Completed" column is to be dated and initialed by the project manager, or his/her designee, based on the documentation provided qualified contractors, or through personal verification by City representatives.

REFERENCES

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Manteca WQCF and Collection System Master Plans Project Mitigation Monitoring and Reporting Program Summary Table					
Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Implementation and Verification	
				Monitoring Action	Date Completed
Mitigation Measures Identified in the EIR					
Land Use and Agricultural Resources					
4.1-3	**Conversion of Important Farmland to Nonagricultural Use.**				
	The City will pay the required City agricultural mitigation fee to help offset the conversion of Important Farmland. Consistent with Chapter 13.42 of the Manteca Municipal Code, a $2,000 agricultural mitigation fee will be assessed for every acre of Important Farmland that would be developed as part of the proposed project. A total of $82,000 ($2,000 multiplied by 41 acres) will be made available to acquire farmland conservation easements and/or farmland deed restrictions. Consistent with goals of the City's Right to Farm ordinance, this mitigation measure would reduce the occurrence of conflicts between nonagricultural and agricultural land uses from development pressure by preserving agricultural lands located within the project vicinity.	Fees shall be paid before issuance of first grading permit	City of Manteca	Verify payment of agricultural mitigation fee	
Visual Resources					
4.2-4	**Impacts of Construction-Related Nighttime Lighting.**				
	If construction activity occurs after dusk and nighttime lighting is required to illuminate any construction sites associated with the proposed project, the City will ensure that all construction lights are directed away from adjacent development and that all construction lighting is shielded to minimize glare.	Monitor nighttime construction lighting during construction	City of Manteca	Verify that construction lights and shielding are properly directed to minimize glare	
Air Quality					
4.3-1	**Generation of Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors.**				
	A. SJVAPCD has indicated that the project may be subject to Rule 9510, Indirect Source Review (SJVAPCD 2006d). It would appear that the WQCF expansion portion of the project would be exempt in accordance with Section 4.4.3 of the Rule, which exempts facilities that are subject to the New and Modified Source Rule. Construction of the collection system and outfall would result in emissions of NO_X in excess of 2.0 tons per year, which is a baseline for applicability of the				

Manteca WQCF and Collection System Master Plans Project Mitigation Monitoring and Reporting Program Summary Table

Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Implementation and Verification	
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	Rule. Therefore, the City of Manteca will ensure that the proposed project complies with the following, as required by law:				
	1) Submit an Air Impact Assessment (AIA) application to SJVAPCD. The AIA application will be submitted on a form provided by the SJVAPCD and contain, but not limited to, the applicant's name and address, detailed project description, on-site emission reduction checklist, monitoring and reporting schedule, and an AIA. The AIA shall quantify construction NO_X and PM_{10} emissions associated with the project. (PM_{10} emissions would be less than 2 tpy; therefore, it may be acceptable to limit the AIA analysis to NO_X emissions.) This will include the estimated construction baseline emissions, and the mitigated emissions for each applicable pollutant for the development project, or each phase thereof, and shall quantify the off-site fee, if applicable.	a, 1) Submit application prior to issuance of first grading permit and monitor compliance during construction	a, 1) City of Manteca and SJVAPCD	a, 1) Verify submittal of Air Impact Assessment application and monitor on a regular basis to verify implementation of appropriate pollution control measures	
	General mitigation requirements, as contained in the ISR rule, include the following: • Exhaust emissions for construction equipment greater than 50 horsepower used or associated with the project will be reduced by 20% of the total NO_X and by 45% of the total PM_{10} exhaust emissions from the statewide average as estimated by ARB. • Consider using less polluting construction equipment, which can be achieved by utilizing add-on controls, cleaner fuels, or newer lower emitting equipment. • Additional strategies for reducing construction emissions may include, but are not limited to: – Providing commercial electric power to the project site in adequate capacity to avoid or minimize the use of portable electric generators and the equipment; – Substitution of electric-powered equipment for diesel engine driven equipment; and – Limiting the hours of operation of heavy duty equipment and/or the amount of equipment in use at any one time.				

Manteca WQCF and Collection System Master Plans Project Mitigation Monitoring and Reporting Program Summary Table

Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Implementation and Verification	
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	B. The City of Manteca will ensure that the proposed project complies with SJVAPCD's Regulation VIII, "Fugitive Dust Prohibitions," and that all applicable control measures, as required by law, are implemented during construction to reduce the generation of fugitive PM_{10} and $PM_{2.5}$ emissions. Regulation VIII contains, but not limited to, the following required control measures. 1. Prewater site sufficient to limit visible dust emissions (VDE) to 20% opacity. 2. Phase work to reduce the amount of disturbed surface area at any one time. 3. During active operations, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity. 4. During active operations, construct and maintain wind barriers sufficient to limit VDE to 20% opacity. 5. During active operations, apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20% opacity and meet the conditions of a stabilized unpaved road surface. 6. An owner/operator shall limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour. 7. An owner/operator shall post speed limit signs that meet State and Federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads. 8. When handling bulk materials, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity.	b) Implement dust control measures during grading and construction activities	b) City of Manteca	b) Verify implementation of appropriate fugitive dust control measures on a monthly basis	

Manteca WQCF and Collection System Master Plans Project Mitigation Monitoring and Reporting Program Summary Table					
Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Implementation and Verification	
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	9. When handling bulk material, construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. 10. When storing bulk materials, comply with the conditions for a stabilized surface as listed above. 11. When storing bulk materials, cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action. 12. When storing bulk materials construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, apply water or chemical/organic stabilizers/suppressants to limit VDE to 20% opacity or utilize a three-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity. 13. Limit vehicular speed while traveling on the work site sufficient to limit VDE to 20% opacity. 14. Load all haul trucks such that the freeboard is not less than 6 inches when material is transported across any paved public access road sufficient to limit VDE to 20% opacity. 15. Apply water to the top of the load sufficient to limit VDE to 20% opacity. 16. Cover haul trucks with a tarp or other suitable cover. 17. Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and load all haul trucks such that the freeboard is not less than 6 inches when material is transported on any paved public access road, and apply water to the top of the load sufficient to limit VDE to 20% opacity; or cover haul trucks with a tarp or other suitable cover. 18. Owners/operators shall remove all visible carryout and trackout at the end of each workday.				

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	19. An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall take the actions for the prevention and mitigation of carryout and trackout. 20. Within urban areas, an owner/operator shall prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site. 21. Within rural areas, construction projects 10 acres or more in size, an owner/operator shall prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site. 22. For sites with paved interior roads, an owner/operator shall prevent and mitigate carryout and trackout. 23. Cleanup of carryout and trackout shall be accomplished by manually sweeping and picking-up; or operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to 20% opacity; or operating a PM_{10}-efficient street sweeper that has a pick-up efficiency of at least 80%; or flushing with water, if curbs or gutters are not present and where the use of water would not result as a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program. 24. An owner/operator shall submit a Dust Control Plan to the Air Pollution Control Officer (APCO) prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or 5 acres or more of disturbed surface area for nonresidential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. Construction activities shall not commence until the APCO has approved or conditionally approved the Dust Control Plan. An owner/operator shall provide written notification to the APCO within 10 days prior to the commencement of earthmoving				

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	activities via fax or mail. The requirement to submit a dust control plan shall apply to all such activities conducted for residential and nonresidential (e.g., commercial, industrial, or institutional) purposes or conducted by any governmental entity.				
	C. The City of Manteca will ensure that the following SJVAPCD-recommended additional control measures will be implemented by the proposed project during construction to further reduce fugitive PM_{10} and $PM_{2.5}$ dust emissions. 1. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1%. 2. Suspend excavation and grading activity when winds exceed 20 mph. 3. Limit area subject to excavation, grading, and other construction activity at any one time.	c) Implement dust control measures during grading and construction activities	c) City of Manteca	c) Verify implementation of appropriate fugitive dust control measures on a monthly basis	
	D. The City of Manteca will ensure that the following SJVAPCD-recommended additional control measures will be implemented by the proposed project during construction to further reduce construction equipment exhaust emissions. 1. Minimize idling time (e.g., 10-minute maximum). 2. Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set). This measure would be particularly applicable to the utilization of signal boards. 3. Staging areas for heavy-duty construction equipment shall be located as far as possible from sensitive receptors. 4. Use alternative fueled or catalyst equipped diesel construction equipment, where reasonable available, such as equipment capable of using biodiesel or emulsified fuel. Alternative fuels and NO_X reduction equipment should be ARB-certified. 5. Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use at any one time.	d) Implement exhaust control measures during grading and construction activities	d) City of Manteca	d) Verify implementation of appropriate pollution control measures on a monthly basis	

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	6. Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways or on Spare the Air Days.				
Noise					
4.4-1	**Short-Term Increases in Construction Source Noise Levels.**				
	To reduce the exposure of noise-sensitive receptors to project-generated construction source noise levels, the City will implement the following measures: ► Limit all construction activities within the city to the hours from 7 a.m. to 7 p.m. to ensure compliance with Section 17.13.04(A) of the City of Manteca Municipal Code. ► Limit all construction activities within the county, or affected by the County, to the hours from 6 a.m. to 9 p.m. to ensure compliance with the San Joaquin County Development Code (Section 9-1029.9[C][3]). ► Properly maintain and equip all construction equipment with noise control, such as mufflers, in accordance with manufacturers' specifications. ► Place noisy stationary equipment (e.g., compressors, generators) away from existing off-site noise-sensitive receptors and/or provide acoustical shielding.	Implement noise reduction measures during project construction	City of Manteca	Monitor on a monthly basis that construction activities occur within specified time periods and verify equipment is properly maintained and situated	
4.4-5	**Exposure of Sensitive Receptors to or Generation of Excessive Groundborne Vibration or Noise Levels.**				
	To reduce the exposure of vibration-sensitive receptors to project-generated construction source vibration levels, the City will implement the following measure: ► Construction activities within 60 feet of occupied residences will be performed without equipment that produces relatively high levels of vibration (e.g., use jackhammers in place of hoe rams).	Limit use of equipment generating high noise levels during project construction	City of Manteca	Monitor on a monthly or periodic basis that proper equipment is used near occupied residences	

Manteca WQCF and Collection System Master Plans Project Mitigation Monitoring and Reporting Program Summary Table					
Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Implementation and Verification	
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Terrestrial Biological Resources					
4.5-2	**Impacts on Special-Status Plants.** The proposed project is located in the Central Zone of the SJMSCP. Eleven of the special-status plants listed in Table 4.5-1 are addressed in the SJMSCP. The City will request coverage under the SJMSCP and fees will be paid in the amount determined by SJCOG during the application and review process for the project. If SJCOG determines, based on an independent review by a qualified biologist, that suitable habitat for special-status plants would be affected, the following measures may be required to reduce impacts on the 11 special-status species covered by the SJMSCP: a) Before project construction, surveys for the 11 special-status plants covered by the SJMSCP shall be conducted by a qualified botanist at the appropriate time of year, when the target species would be in flower or otherwise clearly identifiable. Surveys shall be conducted in accordance with specific methodologies described in Section 5.2.2 of the SJMSCP. If any of the 11 special-status plants are found, the following measures will be implemented: 1) *Greene's tuctoria, Delta button celery, Sanford's arrowhead and slough thistle:* If these species are present in the project area and cannot be avoided, a mitigation plan will be developed, with review and input from the regulatory agencies (e.g., DFG). The mitigation plan will identify mitigation measures for any populations affected by the proposed project, such as creation of off-site populations through seed collection or transplanting, preserving and enhancing existing populations, or restoring or creating suitable habitat in sufficient quantities to compensate for the impact. These measures will be designed to ensure that the project does not result in a net reduction in the population size or range of Greene's tuctoria, Delta button celery, Sanford's arrowhead, and slough thistle. 2) *Recurved larkspur, Wright's trichocoronis, alkali milk vetch, Suisun Marsh aster, rose-mallow, Delta mudwort, and Delta tule pea:* If these species are found in the project area and cannot be avoided, a mitigation strategy will be developed with review and	a, 1 and 2) Submit SJCOG fees and complete pre-construction surveys and studies before issuance of any grading permits	a, 1 and 2) City of Manteca	a, 1 and 2) Verify payment of fees to SJCOG and completion of pre-construction surveys	

Manteca WQCF and Collection System Master Plans Project Mitigation Monitoring and Reporting Program Summary Table

Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Implementation and Verification	
				Monitoring Action	Date Completed
	input from the regulatory agencies (e.g., DFG). The mitigation strategy will first consider the feasibility of establishing a conservation easement. If dedication of a conservation easement is found not to be a feasible mitigation option, payment of SJMSCP development fees will be used to mitigate impacts on these *species*. Use of conservation easements or development fees for establishment of habitat preserves, or a combination of the two mechanisms, will be structured to ensure that the project does not result in an overall net reduction in the population size or range of recurved larkspur, Wright's trichocoronis, alkali milk vetch, Suisun Marsh aster, rose-mallow, Delta mudwort, and Delta tule pea.				
	3) The remaining two species, San Joaquin spearscale and lesser spearscale, are not covered in the SJMSCP. Surveys for these species shall be conducted by a qualified botanist at the appropriate time of year when the target species would be in flower or otherwise clearly identifiable. If survey results indicate that neither species is present in project area, no additional mitigation will be required. If populations of these species are encountered during the surveys, they will be avoided to the extent feasible. If avoidance is not possible, plants will be evaluated for their biological importance based on the known distribution of the plants and other pertinent data, in consultation with DFG. If significant impacts would occur, a mitigation plan will be developed in coordination with DFG. The plan will detail specific measures to reduce impacts on the plants to a less-than-significant level, which may include a combination of avoidance, salvage, replanting, or protection of off-site populations as deemed appropriate by DFG. The plan will also include methods for monitoring of mitigation success and reporting requirements.	a, 3) Conduct surveys and develop mitigation plan, if necessary, before issuance of any grading permits	a, 3) City of Manteca	a, 3) Verify completion of pre-construction surveys	
4.5-3	**Impacts on Vernal Pool Crustaceans, California Tiger Salamander, and Western Spadefoot Toad.**				
	For the wastewater collection system alignment approximately 900 feet north of Yosemite Avenue and the effluent outfall pipeline alignment, the City will request coverage under the SJMSCP and fees will be paid in the amount determined by SJCOG during the application and review process	Submit SJCOG fees and complete pre-construction surveys and studies before issuance of	City of Manteca	Verify payment of fees to SJCOG and completion of any necessary pre-	

Manteca WQCF and Collection System Master Plans Project Mitigation Monitoring and Reporting Program Summary Table					
Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Implementation and Verification	
				Monitoring Action	Date Completed
		any grading permits		construction surveys	
	for the project. SJCOG may also determine, based on an independent review by a qualified biologist, that the following measures will be implemented to reduce impacts on the vernal pool crustaceans, California tiger salamander, and western spadefoot toad if potential habitat is present in the project area and would be affected by plan implementation. *Vernal Pool Crustaceans* ► Filling of vernal pools will be delayed until pools are dry and samples from the top layer of vernal pool soils are collected. Soil collections will be sufficient to include a representative sample of plant and animal life present in the pools by incorporating seeds, cysts, eggs, spores and similar inoculum. ► Collected soils will be dried and stored in pillowcases labeled with the date and location of soils collected. Soils will be deposited with the Joint Powers Authority (JPA). The JPA shall retain the soils in a cool, dry area and shall be responsible for providing soils to vernal pool construction managers for inoculating newly created vernal pools on Preserve lands. *California Tiger Salamander and Western Spadefoot Toad* If potential California tiger salamander and spadefoot toad habitat is determined to be present and could be affected, surveys will be conducted according to the current protocol approved by the Technical Advisory Committee (TAC) and the permitting agencies (i.e., DFG and USFWS). If salamanders and/or toads are detected, incidental take minimization measures will be developed in coordination with the TAC and permitting agencies. This may be conducted as part of the CWA Section 404 permitting process, if such a permit is required. The measures will be based on the need to avoid and minimize impacts on breeding, feeding, and sheltering behaviors of California tiger salamander and spadefoot toad, and will include consideration of the following:				

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Implementation and Verification	
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	► effects on aquatic habitat, including retaining pools and maintaining appropriate pool hydrology to enable successful metamorphosis of larvae to occur, but without fostering nonnative aquatic predators; ► retention of small mammal burrows and other suitable estivation habitat (e.g., underground holes, cracks, or niches) in adjacent uplands; ► the fact that maintenance of open habitat between breeding ponds and estivation sites (e.g., roads and other linear barriers) can increase mortality or even prevent migrations and dispersal, significantly increasing harm to and mortality of salamanders and toads); ► siting replacement wetland habitat, whenever possible, within approximately 1.5 miles of other known breeding sites.				
4.5-4	**Impacts on Giant Garter Snake.** The City will request coverage under the SJMSCP and fees will be paid in the amount determined by SJCOG during the application and review process for the project. SJCOG may also determine, based on an independent review by a qualified biologist, that the following measures will be implemented to reduce impacts on giant garter snake: ► Construction will occur during the active period for the snake, between May 1 and October 1. Between October 2 and April 30, the JPA, with the concurrence of the permitting agencies' representatives on the TAC, shall determine whether additional measures are necessary to minimize and avoid take. ► Vegetation clearing within 200 feet of the banks of potential aquatic habitat for giant garter snake will be limited to the minimum area necessary. ► The movement of heavy equipment within 200 feet of the banks of potential aquatic habitat for giant garter snake will be confined to existing roadways to minimize habitat disturbance. ► Before ground disturbance, all on-site construction personnel will be given instruction regarding the presence of SJMSCP-covered species and the importance of avoiding impacts on these species and their habitats.	Submit SJCOG fees and complete pre-construction surveys and studies before issuance of any grading permits	City of Manteca	Verify payment of fees to SJCOG and completion of any necessary pre-construction surveys and construction personnel training	

Manteca WQCF and Collection System Master Plans Project Mitigation Monitoring and Reporting Program Summary Table

Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Implementation and Verification	
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	► In areas where wetlands, irrigation ditches, marsh areas, or other potential giant garter snake habitats are being retained on the site: a. Temporary fencing will be installed at the edge of the construction area and the adjacent wetland, marsh, or ditch. b. Working areas, spoils, and equipment storage and other project activities will be restricted to areas outside of marshes, wetlands, and ditches. c. Water quality will be maintained and construction runoff into wetland areas will be limited through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents. ► If on-site wetlands, irrigation ditches, marshes, etc., are being relocated in the vicinity, the newly created aquatic habitat will be created and filled with water before dewatering occurs and the existing aquatic habitat is destroyed. In addition, nonpredatory fish species that exist in the aquatic habitat and that are to be relocated will be seined and transported to the new aquatic habitat as the old site is dewatered. ► If wetlands, irrigation ditches, marshes, etc., will not be relocated in the vicinity, then the aquatic habitat will be dewatered at least 2 weeks before construction begins. ► Preconstruction surveys for the giant garter snake (conducted after completion of environmental reviews and before ground disturbance) will occur within 24 hours of ground disturbance. ► Other provisions of the USFWS Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat will be implemented (excluding programmatic mitigation ratios which are superseded by the SJMSCP's mitigation ratios).				
4.5-6	**Impacts on Raptors.** The City will request coverage under the SJMSCP and fees will be paid in the amount determined by SJCOG during the application and review process for the project. Compensation for loss of agricultural lands will also mitigate the loss of foraging habitat for raptor species. SJCOG may also determine, based on an independent review by a qualified biologist,	Submit SJCOG fees and complete pre-construction surveys and studies before issuance of	City of Manteca	Verify payment of fees to SJCOG, establishment of required setbacks, and completion of	

Manteca WQCF and Collection System Master Plans Project Mitigation Monitoring and Reporting Program Summary Table					
Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Implementation and Verification	
				Monitoring Action	Date Completed
	that the following measures will be implemented to reduce impacts on special-status raptors.	any grading permits		any necessary pre-construction surveys	
	Swainson's Hawk The City has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past 3 years or trees, such as large oaks, that the hawks prefer for nesting) or removing the nest trees. If the City elects to retain a nest tree, and to encourage tree retention, the following incidental take minimization measure will be implemented during construction activities: ► If a nest tree becomes occupied during construction activities, then all construction activities will remain a distance of two times the dripline of the tree, measured from the nest. ► If the City elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied. *Burrowing Owl* The City will prevent ground squirrels from occupying the project site early in the planning process by employing one of the following practices: ► New vegetation will be planted or existing vegetation will be retained entirely covering the site at a height of approximately 36 inches above the ground. Vegetation will be retained until construction begins. ► If burrowing owls are not known or suspected on a project site, the City will disk or plow the entire project site to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels will be removed through one of approved methods described in Appendix A of the SJMSCP to prevent reoccupation of the project site (also found at http://www.sjcog.org/). If these measures are not attempted or are attempted but fail, and burrowing owls occupy the project site, then the following measures will be implemented: • During the nonbreeding season (September 1–January 31), burrowing owls occupying the project site will be removed from the project site by passive relocation as described in DFG's Staff Report on Burrowing Owl Mitigation (DFG 1995).				

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	• During the breeding season (February 1–August 31), occupied burrows will not be disturbed and will be provided with a 75-meter protective buffer until the Technical Advisory Committee (TAC)—with the concurrence of the permitting agencies' representatives on the TAC—or a qualified biologist approved by the permitting agencies verifies through noninvasive means that either the birds have not begun egg laying, or juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed. *White-Tailed Kite* Before the start of any ground-disturbing activities (e.g., project site grading), preconstruction surveys will investigate all potential nesting trees on the project site (e.g., especially tree tops 15–59 feet above the ground in oak, willow, eucalyptus, cottonwood, or other deciduous trees), during the nesting season (February 15–September 15) whenever white-tailed kites are noted on-site or within the vicinity of the project site during the nesting season. A setback of 100 feet from nesting areas will be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks will be marked by brightly colored temporary fencing. *Northern Harrier* A setback of 500 feet from nesting areas will be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks will be marked by brightly colored temporary fencing.				

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	Common Raptors ► If project activity would occur during the raptor nesting season (February 15–September 15), preconstruction surveys will be conducted during the nesting season in suitable nesting habitat within 100 feet of areas of project activity. The survey will be conducted within 2 weeks before the beginning of construction or tree removal. ► A setback of 100 feet from active nesting areas will be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests that are known to be occupied. Setbacks will be marked by brightly colored temporary fencing.				
4.5-9	**Impacts on Protected and Heritage Trees.** The City will implement the following measures to reduce impacts of the proposed project on protected and heritage trees: ► Before project implementation, a tree survey shall be conducted by a qualified botanist to enumerate and evaluate all trees that meet standards in the applicable City codes outlined above that could be affected by implementation of the proposed project. ► Trees that are subject to protection, but must be removed as a result of project implementation, will be replaced in accordance with tree planting specifications established by the City Tree Ordinance. Replacement trees will be planted on-site at a location in the general vicinity that is consistent with City standards. ► Replacement tree plantings will be monitored in accordance with City monitoring protocols. ► If monitoring indicates that replacement plantings are not meeting performance standards, remedial measures will be implemented. Appropriate measures will be determined by the City and will be implemented until it is demonstrated that replacement plantings meet performance standards.	Evaluate all trees to be removed before issuance of first grading permit, replace trees during construction, and monitor replacement trees after construction	City of Manteca	Verify completion of site-specific tree survey, verify preparation of tree mitigation plan (if necessary), and monitor replacement plantings in accordance with the City's Tree Ordinance.	

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4.5-10	**Impacts on Sensitive Habitats, Including Jurisdictional Waters of the United States.** The City will avoid impacts on the San Joaquin River and its tributaries and impacts on freshwater marsh habitat within the French Camp Outlet Canal and its tributaries by implementing the following construction methods: ► trenchless construction methods such as horizontal directional drilling or bore-and-jack to bore under the French Camp Outlet Canal in two locations and bore under a tributary of the French Camp Outlet Canal in one location; ► limiting open-cut trench installation near sensitive habitat to improved and unimproved roadways; and ► limiting construction equipment and material to roadways and disturbed upland areas (e.g., agricultural fields and vineyards). Although it is anticipated that the construction techniques discussed above would avoid impacts on the French Camp Outlet Canal, any proposed action involving tunneling or boring under navigable waters requires a USACE Section 10 permit. Therefore, the City will apply to USACE for a Section 10 permit under the Rivers and Harbors Act to obtain permission to pass under the French Camp Outlet Canal and its tributary. Where construction activities would occur within 25 feet of the French Camp Outlet Canal or its tributaries or other areas with freshwater marsh, biological monitoring will be conducted to ensure that there are no adverse effects on these sensitive habitats. A determination of waters of the United States, including wetlands and riparian habitat that would be affected by construction of the effluent outfall structure, would be made by qualified biologists through the formal Section 404 wetland delineation process. If necessary, the City will consult with the appropriate agencies (e.g., USACE, DFG, and the U.S. Environmental Protection Agency), and authorization for fill of jurisdictional areas will be secured from USACE via the Section 404 permitting process and other applicable resource agencies' permitting processes, if required. As part of these processes, measures will be	Avoid freshwater habitat prior to issuance of grading permits for affected areas and/or obtain Section 10 permit from USACE prior to any grading or construction activities	City of Manteca	Verify either avoidance of freshwater marsh habitat and/or completion of any necessary site-specific delineations of waters of the United States, biological monitoring, and acquisition of required permits from the USACE	

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	developed to minimize impacts, such as conducting activities during the low-flow season and erecting protective fencing to minimize the area of impact and potential for runoff and siltation. Any jurisdictional habitat that is removed will be replaced or rehabilitated on a "no-net-loss" basis in accordance with applicable agency regulations and at a location and by methods agreeable to the applicable agencies. In addition, construction of the effluent outfall structure may require an encroachment permit from the State Reclamation Board. Therefore, the City will consult with the Reclamation Board before initiating any construction activities.				
Geology, Soils and Seismicity					
4.7-2	**Risks to People and Structures Caused by Strong Seismic-Related Ground Failure.**				
	a. Before contract bidding for project construction, the approved project design plans and specifications, including grading and foundation plans, shall be reviewed by a soils engineer approved by the City. This review shall be completed to assess whether the recommendations in project geotechnical reports prepared by Kleinfelder are sufficient for construction of the buildings and facilities described in the final project design plans. If these measures are deemed insufficient, the geotechnical engineer shall prepare supplemental site-specific geotechnical report(s) with appropriate recommendations sufficient to ensure the safety of project structures and site occupants. These measures could include, but are not limited to, the construction of deep foundations, installation of driven piles, and extra reinforcement of foundation slabs. At a minimum, these measures shall demonstrate that the proposed project design would meet CBC and City design standards.	a) Have a qualified engineer review grading and foundation plans before issuance of first grading permit	a) City of Manteca; construction contractor(s)	a) Verify geotechnical reports have been peer-reviewed for their adequacy	
	b. During project design and construction, all measures outlined in project geotechnical reports for the proposed project and, if necessary, measures included in the supplemental site-specific geotechnical report(s) shall be implemented to ensure that project structures and site occupants would be safe during seismic events.	b) Implement recommended geotechnical measures before approval of final maps and during project construction	b) City of Manteca; construction contractor(s)	b) Verify that the project design adheres to geotechnical recommendations	

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	c. The on-site soils will likely be saturated by rainfall in the winter and early spring months. If the construction schedule requires continued work during the wet months, the City shall consult with a qualified civil engineer and implement any additional recommendations provided, as conditions warrant.	c) Consult with qualified engineer if work will occur during rainy season before issuance of first grading permit	c) City of Manteca	c) Verify that the project design adheres to geotechnical recommendations	
4.7-3	**Construction-Related Erosion Hazards.**				
	► A grading and erosion control plan shall be prepared by a California Registered Civil Engineer prior to issuance of any grading permits. The plan shall be consistent with the CBC grading requirements and shall include the site-specific grading required for new construction. The City shall ensure that the construction contractor is responsible for securing a source of transportation and deposition of excavated materials.	Prepare grading and erosion control plan before issuance of first grading permit	City of Manteca; construction contractor(s)	Verify preparation of grading and erosion control plan for project and filing of notice of intent to the Central Valley RWQCB; verify preparation of a SWPPP	
	► BMPs for erosion and siltation prevention, as further described in Section 4.9, "Hydrology and Water Quality," of this Draft EIR, will be implemented at proposed project areas during all construction activities. The City will consult with the Central Valley Regional Water Quality Control Board to acquire the appropriate regulatory approvals that may be necessary to obtain Section 401 water quality certification, State Water Board statewide NPDES stormwater permit for general construction activity, and any other necessary site-specific waste discharge requirements (WDRs) or waivers. As required under the NPDES stormwater permit for general construction activity, the City will prepare and submit the appropriate Notice of Intent (NOI) and prepare the SWPPP and any other necessary engineering plans and specifications for pollution prevention and control. The SWPPP and other appropriate plans shall identify and specify the use of erosion and sediment control BMPs, means of waste disposal, implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities. BMPs will include dust control measures such as				

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	wetting the top layer of exposed soils and covering soil stockpiles, as necessary. ► The SWPPP would also specify the pollutants that are likely to be used during construction that could be present in stormwater drainage and non-stormwater discharges. A sampling and monitoring program would be included in the SWPPP that meets the requirements of State Water Board Order 99-08-DWQ to ensure that the BMPs are effective. ► Prior to issuance of any grading permits, construction techniques will be identified that would reduce the potential for runoff, and the plan shall identify the erosion and sedimentation control measures to be implemented. The SWPPP shall also specify spill prevention and contingency measures, identify the types of materials used for equipment operation, and identify measures to prevent or clean up spills of hazardous materials used for equipment operation and hazardous waste. Emergency procedures for responding to spills shall also be identified. BMPs identified in the SWPPP shall be used in all subsequent site development activities. The SWPPP shall identify personnel training requirements and procedures that would be used to ensure that workers are aware of permit requirements and proper installation and performance inspection methods for BMPs specified in the SWPPP. The SWPPP shall also identify the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP. All construction contractors shall retain a copy of the approved SWPPP on the construction site.				
4.7-4	**Risks to People and Structures Resulting from Unstable Soil Conditions.** The City shall implement Mitigation Measure 4.7-2, described above, to reduce the risks to people and structures resulting from unstable soil conditions in the proposed project area.	See 4.7-2 above	See 4.7-2 above	See 4.7-2 above	

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Paleontological Resources					
4.8-1	**Disturbance of Paleontological Resources during Earthmoving Activities.** For earthmoving activities at the project area, the City will implement the following measures:				
	1) Before the start of construction activities, construction personnel involved with earthmoving activities shall be informed of the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction activities, and proper notification procedures should fossils be encountered. This training shall be prepared and presented by a qualified paleontologist or archaeologist.	1) Educate construction workers regarding presence of fossil resources before issuance of first grading permit	1) City of Manteca; construction contractor(s)	1) Verify that fossil resource training occurs	
	2) If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and the City Public Works Department shall be notified. The City will retain a qualified paleontologist to evaluate the resource and prepare a proposed recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1995). The recovery plan may include a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recovery of identified resources will be implemented by the City before construction activities resume at the site.	2) If fossil resources are encountered. cease construction activities during construction and develop recovery plan	2) City of Manteca; construction contractor(s)	2) Verify that construction activities cease if paleontological resources are found, and pursue appropriate management actions to evaluate, remove and preserve encountered resources	
Public Services and Utilities					
4.10-5	**Impacts on Existing Utility Corridors.**				
	PG&E owns and operates gas and electric facilities that are located within and adjacent to the proposed project area. To promote the safe and reliable maintenance and operation of utility facilities, the California Public Utilities Commission (CPUC) has mandated specific clearance	Coordinate with PG&E and OLWD during project design / prior to	City of Manteca	Ensure that City consults and coordinates with PG&E and the	

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	requirements between utility facilities and surrounding objects or construction activities. To ensure compliance with these standards, the City of Manteca will coordinate with PG&E early in the development of project plans. Any proposed development plans will provide for unrestricted utility access and prevent easement encroachments that might impair the safe and reliable maintenance and operation of PG&E's facilities. In addition, the OLWD owns and operates wastewater treatment facilities in the project area, and has plans to implement a treated effluent spray field system. The City of Manteca will coordinate with OLWD early in the development of project plans. Any proposed development plans will provide for unrestricted utility access and prevent easement encroachments that might impair the safe and reliable maintenance and operation of OLWD's wastewater facilities. The requesting party will be responsible for the costs associated with the relocation of existing PG&E facilities to accommodate the development of the proposed project. Because facilities relocations require long lead times and are not always feasible, the City will consult with PG&E as early in the planning stages as possible. Relocations of PG&E's electric transmission and substation facilities (50,000 volts and above) could also require formal approval from CPUC. If required, this approval process could take up to 2 years to complete. The City will consult with PG&E and OLWD for additional information and assistance in the development of its project schedule to reduce effects on utility and wastewater service associated with project development.	approval of project design plans		OLWD regarding utility easements and necessary easement permits are obtained	
Transportation and Circulation					
4.11-4	**Increase in Hazards because of a Design Feature.**				
	a. Before commencement of any construction activities, the City of Manteca Public Works Department will prepare and approve a construction management plan. The plan will identify the timing of construction and the timing of elements that would result in the full or partial blockage of local roadways. The plan will indicate where emergency vehicle access to project facilities would be provided, and will also outline the procedures for coordination with emergency service providers before project construction and road closures. The plan will also	a) Prepare a construction management plan before issuance of first grading permit	a) City of Manteca	a) Verify preparation of construction management plan	

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	specify the measures that would be implemented to minimize traffic-related impacts, including construction parking during construction. These measures could include, but are not limited to, use of signage notifying travelers that they are entering a construction zone; and use of cones, flaggers, and guide vehicles to direct traffic through the construction zone. In addition, the plan will include, at a minimum, the following conditions: 1. Before beginning any construction activities, the City will determine the roadways that will receive project-related construction traffic for the transport of materials and equipment to the WQCF and those roadways in which new pipeline would be installed. 2. The City will document existing pavement conditions through photographs of roadways identified in item 1 above. The photographs will identify general views of pavement conditions as well as document specific locations of where there are current deficiencies in pavement conditions. These photos will be retained on file at the WQCF. 3. This City will monitor the condition of roadways identified in item 1 above every 6 months to determine whether any pavement degradation (e.g., potholes, pavement separation) has occurred from preconstruction conditions. 4. Where roadways show evidence of degradation below acceptable standards as determined by the City Department of Public Works, the City will repair degraded sections to acceptable standards. 5. Lane closures will be identified including specific times of closure. All lane closures will be limited to the hours between 9 a.m. and 4 p.m.				
	b. A copy of the plan will be submitted to local emergency response agencies and these agencies will be notified at least 14 days before the commencement of construction that would partially or fully obstruct local roadways.	b) 14 days prior to start of construction	b) City of Manteca	b) Verify plan submittal	
	c. The City Public Works Department will ensure that project contractors adhere to the provisions of the plan and maintain a copy of the plan at project construction sites.	c) During construction	c) City of Manteca	c) Verify compliance with plan	

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Cultural Resources					
4.12-2	**Damage to or Destruction of Undiscovered Cultural Resources.**				
	Before the beginning of any project construction activity that could affect the previously unsurveyed portions of the project site, qualified archaeologists shall survey all portions of the site that were not examined during intensive surveys for the current effort, including unsurveyed portions of the pipeline alignment for the recycled-water distribution system (0.96 mile in the central portion of the project area between Swanson Road and West Center Street north of Yosemite Avenue, and 0.54 mile in the southwestern portion of the project area south of Woodward Avenue), pumping station sites, the side-bank outfall site, and approximately 3.35 miles of the pipeline alignment for the proposed wastewater collection system (2.05 miles in the southwestern portion of the project site near the intersection of Peach Avenue and Airport Way, and approximately 1.3 miles in the center of the western portion of the project area between Yosemite and Louise Avenues, and west of Airport Way). The survey shall be conducted during a time when the affected sites can be plowed and disked, so the natural ground surface can be examined for traces of prehistoric and/or historic-era cultural resources. Surveys of these areas are not necessary if it is determined that the areas would not be affected by project construction-related activity, including equipment staging or material stockpiling. Before the onset of project-related ground-disturbing activities (e.g., land clearing), all construction personnel shall be alerted to the possibility of uncovering buried cultural resources and shall be educated by a qualified archaeologist as to identification of archaeological artifacts. If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains) is made during project-related construction activities, ground disturbances in the area of the find shall be halted and a qualified professional archaeologist shall be notified regarding the discovery. The archaeologist shall determine whether the resource is potentially significant as per the CRHR and shall develop appropriate mitigation.	Survey unsurveyed portions of the project site before issuance of first grading permit and educate construction workers regarding the potential presence of cultural resources prior to any construction activities	City of Manteca and construction contractor(s)	Verify that necessary surveys occur; construction worker education is performed, and verify that construction activities cease if cultural resources are discovered, and pursue appropriate management actions to remove and preserve encountered resources	
4.12-3	**Discovery of Human Remains during Construction.**				
	California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony,	During construction	City of Manteca; construction	Verify that construction activities	

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	from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in Sections 7050.5 and 7052 of the California Health and Safety Code and PRC Section 5097. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all such activities within a 100-foot radius of the find shall be halted immediately and the City shall be notified. The City shall immediately notify the county coroner and a qualified professional archaeologist. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The City's responsibilities for acting after notification that Native American human remains were discovered are explained in detail in PRC Section 5097.9. The City of Manteca or its appointed representative and the professional archaeologist shall contact the Most Likely Descendant (MLD), as determined by the NAHC, regarding the remains. The MLD, in cooperation with the property owner and the lead agencies, shall determine the ultimate disposition of the remains.	activities for the project when remains are discovered	contractor(s)	cease if human remains are discovered, and pursue appropriate management actions to remove and preserve encountered remains	
Fisheries and Aquatic Resources					
4.13-2	**Thermal Effects on Fish and Benthic Macroinvertebrates Exposed to the Plume While Moving Downstream Past the Discharge Outfall.**				
	The City of Manteca will design, install, and operate a treated effluent cooling tower or an equivalent technology that cools treated effluent prior to discharge into the San Joaquin River. The cooling tower or equivalent technology will be designed to reduce the temperature of the treated effluent by up to 15°F such that the effluent discharge and associated size and intensity of the thermal plume will not result in adverse thermal affects to the health and/or condition of sensitive fish species and will sufficiently address Thermal Plan objectives to protect fisheries and	Implement cooling towers or equivalent technology prior to operating the WQCF at the expanded capacity (i.e., greater than	City of Manteca	Verify that the cooling tower or equivalent technology is operating in accordance with the RWQCB's approved final design	
	aquatic resources. The reduction in temperature of the treated effluent will prevent the creation of a lethal zone or plume, defined as water temperatures that are at or above the lethal effects levels (i.e., >68°F) during time periods when the most sensitive fish species would be in the	9.87 mgd ADWF)			

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	vicinity of the WQCF outfall (i.e., from January to May) and ambient background temperatures are at or below these lethal effects levels. Because the ambient water temperature of the San Joaquin River can exceed the >68°F lethal effects threshold during the later portion of the time period when sensitive species are present (e.g., April and May), the temperature of the treated effluent produced by the cooling tower or equivalent technology may be greater than ambient background river temperatures under these conditions and during these periods. This could result in conditions where the plume exceeds the lethal effects threshold; however, with implementation of the cooling tower or equivalent technology, the size and intensity of the plume will be minimized resulting in only short-term exposure (through reduced plume size) to marginally increased water temperatures. Because sensitive fish species have been documented (Moyle 2002, Bartholow and Henricksen 2004, Bjorn and Reiser 1991) to survive exposure to higher temperatures (beyond lethal effects thresholds) for short periods of time, substantial adverse impacts to fish would not occur. Furthermore, the cooling tower or equivalent technology will be designed to cool treated effluent to sufficiently address Thermal Plan objectives and reduce the temperature of the WQCF's effluent and protect fisheries and aquatic resources. The California Thermal Plan objectives were established, in part, to be protective of beneficial uses including cold water fish habitat. The cooling tower or equivalent technology cooling capacity of 15°F would achieve an effluent temperature within 3°F to 4°F of the ambient river temperature. Before the design of the cooling tower or equivalent technology is finalized, the City of Manteca will obtain the approval of the RWQCB indicating that the cooling tower or equivalent technology design is adequate to address concerns regarding discharge of higher temperature treated effluent into the San Joaquin River. The cooling tower or equivalent technology will be constructed, installed, and operated in accordance with the approved final design prior to operating the WQCF at the expanded capacity (i.e., greater than 9.87 mgd ADWF).				