CITY OF MERCED
WASTEWATER TREATMENT PLANT
EXPANSION PROJECT

Final Environmental Impact Report

SCH No. 2005101135

Prepared by:
City of Merced

December 2006

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EXECUTIVE SUMMARY

Introduction

The City of Merced (City) is proposing to install improvements to its wastewater treatment plant (WWTP) in order to meet existing and future water quality standards and expand its capacity to 20 million gallons per day (mgd). The expanded facility would serve planned demand within the City's Specific Urban Development Plan (SUDP) area as well as the adjacent University of California Merced (UC-Merced) Campus Long Range Development Plan (LRDP) area.

The City of Merced is the lead agency for purposes of complying with the requirements of the California Environmental Quality Act (CEQA). In this role, the City prepared a Draft Environmental Impact Report (Draft EIR) to address the environmental consequences of implementing the Project and alternatives. The City subsequently received comments on the Draft EIR and has prepared this Final EIR in compliance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 *et seq.*) of 1970 (as amended), and the CEQA Guidelines (California Code of Regulations, Title 14).

Project construction will be partially funded with a loan from the State Water Resources Control Board (SWRCB) State Revolving Fund loan program. Because this program is partially funded by the U.S. Environmental Protection Agency, it is subject to federal environmental regulations. These "CEQA-Plus" requirements expand the typical content requirements of an EIR to include additional information pertaining to federally designated endangered species, cultural resource protection, and conformity with applicable air management plans (SWRCB, 2004).

As appropriate, this Final EIR identifies measures to minimize identified significant environmental effects of the Project, presents corrections, clarifications, or modifications to the Draft EIR as noted by comments received during the public review period, and summarizes and responds to public and agency comments on the Draft EIR.

Opportunities for Public Comment

The City of Merced publicly issued a Notice of Preparation (NOP) on October 28, 2005. The NOP included a preliminary analysis of the potential environmental effects on the Project, and was publicly circulated for 30-days, in accordance with Section 15082 of the CEQA Guidelines.

As a result of this effort, the City received seven letters of comment, addressing 14 environmental issues. A copy of the NOP can be found in Appendix A of the Draft EIR. Written comments received on the NOP were considered in the preparation of this EIR, and are included in Appendix B of the Draft EIR.

The City released the Draft EIR on August 14, 2006, and made it available during a 51-day period ending on October 4, 2006 to receive public and/or agency comments on the document. The Draft EIR contained a detailed description of the need for and purpose of the proposed Project, a description of the proposed Project and alternatives, a description of existing and future environmental conditions related to the Project, and a discussion of environmental issues of potential concern to the public and agencies.

The City of Merced Planning Commission held a public meeting on October 4th, 2006 at 7:00 p.m. in the City Council Chambers at the City of Merced Department of Planning and Community Development in Merced.

As a result of these efforts, two written comments letters were received from interested agencies by the end of the review period. No public written or oral comments were received. The letters containing comments are presented in Chapter 3 of this Final EIR, along with individual responses to identified comments.

Purpose of the Project

The City's primary objectives for implementing the proposed Project are (1) to install sufficient WWTP capacity to meet wastewater loads generated by planned population growth in the following areas: the City's existing service area, the adjacent UC Merced Campus, and new growth areas that are identified in the City's SUDP area; and (2) install additional levels of wastewater treatment sufficient to meet current and future effluent quality regulatory limits by replacing and adding to aged facilities and implementing improved wastewater treatment technologies and processes.

Project Description

The proposed Project would add wastewater treatment capacity over several phases and improve treated effluent quality of the existing City of Merced WWTP facility to comply with existing and future waste discharge requirements. Specifically, the Project would:

- Increase WWTP capacity to 20 mgd, which is sufficient to meet City SUDP area and UC Merced campus planned wastewater loads that would be generated in about 2025. The capacity would be installed in phases corresponding to continued population growth and development in the Merced SUDP area and the UC Merced campus.
- Improve existing facilities, including new head works, influent pump station, septage/debris station, additional primary clarifier and aeration basin, secondary clarifier, new blower building, return biosolids pump station, and new digester.
- Wastewater treatment improvements including increased denitrification, coagulation, filtration, and ultra-violet disinfection, increased aeration, and Class A Biosolids production.
- Other improvements, consisting of a new effluent discharge structure into Hartley Slough, landscaping, secondary and emergency power, and new laboratory and administration buildings.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has stated that measures identified in the Draft EIR to comply with its rules and regulations to lower air pollutant emissions should be considered as compliance requirements and incorporated into the project, rather than be considered as mitigation. The SJVAPCD considers mitigation to consist of measures that reduce air pollutant above and beyond their compliance requirements. Therefore, the measures to comply with SJVAPCD requirements have been deleted as mitigation in this Final EIR, but incorporated into the project description.

Project Alternatives

Several project alternatives considered different capacities, technologies, and locations. These alternatives were considered and evaluated during the Project's planning and engineering stages. These alternatives were eliminated from further consideration in the Draft EIR because they failed to meet the primary object of the City to serve planned population and development, or would not operate efficiently or effectively as part of the City's existing wastewater collection and treatment system. Only the No Project Alternative was carried forward for detailed consideration within the Draft EIR.

No Project Alternative

The No Project Alternative would result in the proposed Project not being constructed, and would avoid construction-related impacts to wetlands and air quality. Other impacts that would initially be avoided include land-use conflicts, construction- and operation-related noise, conversion of prime agricultural land, and potential disruptions to traffic and emergency services. Wastewater discharge could increase from 8.5 mgd to 10 mgd, but the City would be unable to provide sufficient treatment capacity. The existing WWTP would be unable to serve planned populations, and community growth and development would be limited by available WWTP capacity.

Environmentally Superior Alternative

Section 15126.6(e)(2) of the CEQA Guidelines requires the analysis to identify the environmentally superior alternative if it is not the No Project Alternative. Although the No Project Alternative would avoid many of the potential environmental impacts associated with construction of the Project, it would not achieve the long-term water quality improvements that would occur with implementation of the proposed Project. Because the Project would improve the quality of the treated effluent being discharged to Hartley Slough and also improve the management and control of solids handling and disposal, including measures for the protection of groundwater resources, the Project is considered to be the environmentally superior alternative.

Mitigation Monitoring Plan

The California Environmental Quality Act (CEQA) requires that when a public agency approves a project on the basis of an EIR, the agency must adopt a program of monitoring or reporting on the mitigation measures it has imposed to reduce or avoid significant environmental impacts. The purpose of the Mitigation Monitoring Plan (MMP) is to ensure that the mitigation measures are implemented.

As concluded in this document, the proposed Project would generate several significant environmental impacts that can be reduced, avoided, or minimized with implementation of identified mitigation measures. Therefore, mitigating these effects is mandated as part of approving or proceeding with project implementation.

A Mitigation Monitoring Plan (MMP) has been prepared, and is included in Appendix A to this Final EIR. The MMP includes a description of its purpose, outlines mitigation monitoring procedures, describes actions to be taken in the event of noncompliance, and provides a tabulated monitoring matrix including: specific mitigation measures, the timing at which mitigation measures shall be completed, responsible agencies, and instructions for verification of adherence to Project specific mitigation.

Content and Format of this Final EIR

This Final EIR addresses the entire wastewater treatment expansion project to be implemented by the City of Merced. The Final EIR contains comments received during the review period for the Draft EIR, provides responses to the comments received, and describes changes, modifications, and revisions to the Draft EIR in response to public comment.

The Final EIR does not duplicate sections in the Draft EIR describing baseline environmental conditions, potential impacts, or technical environmental background information, unless the information was clarified in response to public input.

The Final EIR contains the following sections:

Section 1: Executive Summary.

Section 2: Project background,

Section 3: Comments received on the Draft EIR, both written and oral.

Section 4: Changes to the Draft EIR. As appropriate, changes, modifications, and responses to comments are presented.

Section 5: List of preparers of the Final EIR.

Appendices: Appendix A: Mitigation Monitoring Plan

Summary of Environmental Impacts

Project related environmental impacts, along with mitigation measures as appropriate, are summarized in Table ES-1 of this document.

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
Water Quantity		
Impact 4.1.1: The change in point of discharge to Hartley Slough and increase in treated effluent flow would result in substantial adverse effects to the physical character and channel hydrology of Hartley Slough. (Potentially significant)	**Mitigation Measure 4.1.1:** The City shall develop and implement a monitoring program to determine if increased effluent discharges are inducing excessive stream channel erosion on Hartley Slough downstream of the effluent discharge to the location of the existing agricultural water diversion facility. If observed, bank stabilization practices and other best management practices (BMPs) to control erosion shall be implemented. The following criteria will be used to define excessive erosion in Hartley Slough: • Bank undercutting (e.g., over-hanging root wads) • Bank collapse (the ultimate effect of undercutting and/or bed scouring) e.g., banks held by structure of tree but otherwise eroded and unstable. • Vegetation – perennial cover to waterline; sparse perennial cover to waterline; no perennial cover near waterline. • Tree root exposure affecting stability (where trees occur in riparian zone) • In-channel scouring BMPs would be implemented if monitoring indicates a high rate for any of the five criteria has occurred as result of increased discharges from the WWTP. BMPs will also be implemented if a medium rate of the above criteria is observed which indicates may subsequently degrade to a high-erosion condition as result of the increased WWTP discharges. Measures could include planting stabilizing vegetation, using integrated measures, and as a last resort, installing riprap. If no substantial stream channel erosion is observed, the program may be terminated.	LTS
Impact 4.1.2: The expanded WWTP would result in increased surface runoff resulting from new impervious surfaces, which could result in impacts to Hartley Slough. (Less than significant)	None required.	LTS
Impact 4.1.3: Implementation of the Project would deplete local groundwater supplies or interfere substantially with groundwater recharge. (Less than significant)	None required.	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
Water Quality		
Impact 4.2.1: Construction of the Project would result in increased erosion and degrade water quality in Hartley Slough and downstream waterways. (Potentially significant)	**Mitigation Measure 4.2.1a:** An Integrated Water Pollution Control Program (IWPCP) shall be developed and implemented to manage and control potential erosion and water quality degradation that would occur during Project construction. Additionally, the program shall describe monitoring during construction activities, dewatering operations, in-water construction activities, and specific best management practices (BMPs) to avoid and minimize impacts to water quality. The plan shall be approved by the City prior to commencement of construction and shall be made conditions of performance with the City's contractor selected to build the Project. The IWPCP shall incorporate control measures in the following categories: • Soil stabilization practices • Sediment and runoff control practices • Monitoring protocols • Non-storm water management and waste management and disposal control practices • Construction dewatering • Hazardous materials management Once approved by the City, the contractor shall be responsible throughout the duration of Project construction for installing, constructing, inspecting, and maintaining the control measures included in the IWPCP. **Mitigation Measure 4.2.1b:** The City will monitor groundwater that is collected during groundwater dewatering and, if it exceeds applicable surface water quality standards, will convey it into a water treatment system, where it will undergo treatment prior to its discharge to Hartley Slough. The water treatment system may use either temporary mobile treatment equipment or the WWTP. Either system would need to have applicable capability (i.e., activated carbon filtration or other suitable treatment technology) to treat and/or remove water quality constituents that exceed applicable surface water criteria.	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
Impact 4.2.2: The discharge of treated wastewater from the expanded WWTP would increase the receiving water temperature in Hartley Slough to exceed Basin Plan objectives. (Potentially significant)	**Mitigation Measure 4.2.2:** The City shall assess and install a suitable effluent cooling system to comply with temperature receiving water objectives as identified in the Basin Plan (CVRWQCB, 1998). The selected system for effluent cooling, including use of the equalization basins, or installing mechanical chillers or cooling towers, would be sized to provide sufficient cooling to maintain effluent temperature within 5 degrees F of the average annual ambient water temperature. The cooling system shall be constructed within the boundaries of the expanded WWTP site and not generate additional adverse effects to biological resources, wetlands, or sensitive habitats; would not pose a visual nuisance; or would not create obtrusive noise or other emissions. Cooling technologies will initially be sized for the 16 mgd capacity, with a provision to add additional units to accommodate the ultimate 20 mgd capacity.	LTS
Impact 4.2.3: The Project would eliminate chlorine disinfection from the wastewater treatment processes. As a result, several disinfection by-products would no longer be formed in the treated effluent as a result of wastewater disinfection. (Beneficial)	None required.	Beneficial
Impact 4.2.4: The Project would continue to discharge in the treated effluent other Criteria Pollutants, Non-Priority Pollutants, and 303(d) Listed Contaminants at levels consistent with the California Toxics Rule (CTR) and other applicable water quality standards. (Less than significant)	None required.	LTS
Impact 4.2.5: Expansion of the WWTP would increase the discharged salt load to downstream surface waters. (Less than significant)	None required.	LTS
Impact 4.2.6: The application of biosolids to lands within and surrounding the City's WWTP property would degrade local groundwater quality. (Less than significant)	None required.	LTS
Impact 4.2.7: Land application of disinfected tertiary treated water would result in degradation of groundwater quality, and over-application of disinfected tertiary water could result in direct runoff to surface water bodies. (Less than significant)	None required.	LTS

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Air Quality		

Impact 4.3.1: Construction activities associated with development of the Project would generate short-term emissions of criteria pollutants, including suspended and respirable particulate matter (PM_{10}) and equipment exhaust emissions. (Less Than Significant)	**Mitigation Measure 4.3.1:** The City shall consider including other air pollutant reduction measures as referenced in the SJVAPCD letter dated October 4, 2006, that exceed mandatory compliance levels, which can be implemented by construction contractors during facility construction. The City will consider the implementation of such measures as one of several criteria in the selection of the project construction contractor.
	
	The City shall consider the additional measures recommended by the SJVAPCD to minimize air pollutant emissions during construction, including:
	• Making use of the District's Heavy-Duty Engine Program for replacing older diesel engines with newer, cleaner, fuel-efficient diesel engines
	• Construction activity mitigation including:
	  o Limiting area of excavation or grading, at any one time
	  o Use catalyst equipped diesel construction equipment
	  o Replace fossil-fueled equipment with electricity-driven equipment
	  o Shut off diesel engines when not in use
	  o Curtail construction emissions during period of high pollutant concentrations
	  o Implement activity management
	• Lengthen construction period to minimize emission occurring at one time
	• Use Ultra Low Sulfur Diesel fuel as certified by the California Air Resource Board
		LTS

Impact 4.3.2: The Project would result in an increase in operational emissions of criteria air pollutants (ROG, NOx and PM10) and other TACs from on-road motor vehicle traffic traveling to and from the Project area and onsite area sources associated with the Project. (Less than significant)	None required.	LTS
Impact 4.3.3: The Project could create objectionable odors affecting a substantial number of people. (Less than significant).	None required.	LTS

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Geology		
Impact 4.4.1: In the event of a major earthquake in the region, seismic ground shaking could cause collapse or structural damage to the WWTP and associated facilities. Structural damage to Project components resulting from substantial displacement along various fault sources could indirectly result in significant injury to people and disruption of major services (e.g., sanitary sewer). (Less than significant).	None required.	LTS
Impact 4.4.2: The Project area could be subjected to geologic hazards, including liquefaction, differential settlement, total settlement, and minor slumping along Hartley Slough. (Less than significant)	None required.	LTS
Soils		
Impact 4.5.1: The presence of expansive and corrosive soils could result in structural damage to the proposed pipeline and associated facilities. (Less than significant)	None required	LTS
Vegetation		
Impact 4.6.1: Construction and/or operation of the Project would conflict with local policies or ordinances for protecting biological resources. (Potentially significant)	Implementation of Mitigation Measure 4.2.1a will reduce potential impacts from soil erosion to less than significant **Mitigation Measure 4.6.1a:** The City shall avoid spreading invasive plants that could impact biological resources in the Project area. The City will ensure that all fill material brought onto the Project area from offsite shall be from weed-free sources. The upland filled areas and upland areas disturbed by grading and excavation activities will be re-vegetated with appropriate native species to discourage the colonization of invasive plants in the Project study area. All seed for re-vegetation shall consist of 100 percent native plant species. The seed mix shall be premixed and packaged by a commercial seed supplier, labeled in accordance with the California Agricultural Code; shall be delivered to the site in original, unopened containers; and shall bear a dated guaranteed analysis.	LTS

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	Mitigation Measure 4.6.1b: The City shall avoid unnecessary disturbance to native vegetation. In order to avoid and minimize potential impacts from trampling to established vegetation communities, construction activities will be limited to designated staging areas, construction footprints, and construction easements. These areas shall be reseeded with native plants (as prescribed in Mitigation Measure 4.6.1a).	
Impact 4.6.2: The Project would jeopardize or eliminate plant and wildlife habitats. (Less than significant)	None required.	LTS
Fish and Wildlife		
Impact 4.7.1: The expansion of the WWTP will not impede or interfere with the regional movement or migration of wildlife species in the area. (No impact)	None required.	NI
Impact 4.7.2: Expansion of the WWTP will not create new ponds or waterbodies that would attract waterfowl. (No impact)	None required.	NI
Impact 4.7.3: Proposed improvements to the WWTP treatment process will increase effluent volume and improve produce higher quality effluent. Changes to Hartley Slough aquatic species may occur as effluent quantity increases and quality improves. (Less than significant)	None required.	LTS
Aesthetic Resources		
Impact 4.8.1: The Project would adversely affect a scenic vista or scenic resources within a state scenic highway or a City scenic corridor. (No impact)	None required.	NI
Impact 4.8.2: The Project would modify the visual character of the Project area. (Less than significant)	None required.	LTS

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Impact 4.8.3: The Project would construct structures that would result in the creation of new sources of daytime glare and/or nighttime illumination. (Potentially significant)	**Mitigation Measure 4.8.3:** The City shall install security lighting with directional shields to concentrate lighting toward the Project site. The nighttime security and associated parking lighting fixtures will be equipped with directional shields that aim light downward and away from adjacent properties and public roadways. In addition, lighting fixtures will be placed to concentrate light onsite to avoid spillover onto adjacent properties and public roadways	LTS
Noise		
Impact 4.9.1: Project construction would temporarily increase noise levels at nearby sensitive receptor locations. (Potentially significant)	**Mitigation Measure 4.9.1:** The applicant shall implement the following measures: • Construction activities shall be limited to between 7:00 a.m. and 10:00 p.m. Monday through Saturday to avoid noise-sensitive hours of the day. Construction activities shall be prohibited on Sundays and holidays. • Construction equipment noise shall be minimized during Project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools. • Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby residences.	LTS
Impact 4.9.2: Project operational activities associated with traffic and WWTP equipment operation could increase ambient noise levels at nearby land uses. (Less than significant)	None required.	LTS
Recreation		
Impact 4.10.1: The Project would result in an increase in visitor use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. (No impact)	None required.	NI
Impact 4.10.2: The Project would substantially disrupt or conflict with the use of existing recreational facilities to the extent that it would affect the recreational value of such facilities. (No impact)	None required.	NI

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Open Space		
Impact 4.11.1: The Project would displace about 20-acres of open space currently in an agricultural land use. (Potentially significant)	**Mitigation Measure 4.11.1:** (Same as Mitigation 4.14.1) The 25 acres of farmland within the WWTP expansion area, not required for the WWTP facility, shall remain in an agricultural land use. The City shall pay into a "farmland trust" fund for Merced County that will acquire agricultural conservation easements to compensate for the conversion of 20 acres of farmland within the WWTP expansion area. The farmland subject to the easements shall be of the same acreage, and at least the same category of farmland, as identified by the latest FMMP report, as that farmland affected at the WWTP. With the implementation of Mitigation Measure 4.14.1, the impact to the remaining 25 acres would be reduced to a less-than-significant level. However, offsite conservation easements over existing farmland would not provide full Project-level mitigation, because they would not compensate for the loss or farmland due to the Project or replace the resources lost because they would not reduce the overall net loss of farmland by the WWTP. Therefore, the direct impact and permanent conversion of important farmlands as a result of the expanded WWTP would be significant and unavoidable.	SU
Impact 4.11.2: The Project would conflict with an existing policy for managing open space or other agreement /easement for open space protection. (No impact)	None required.	NI
Impact 4.11.3: The Project would result in the loss of open space which acts as a buffer and could result in conflict between adjacent land uses. (No impact)	None required.	NI
Cultural Resources		
Impact 4.12.1: The Project would cause adverse effects to unknown historical resources, including unique archaeological resources. (Potentially significant)	**Mitigation Measure 4.12.1:** In the event of accidental discovery of cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, etc.), work will be suspended and City staff will be contacted. A qualified cultural resource specialist will be retained and will perform any necessary investigations to determine the significance of the find. The City will then implement any mitigation deemed necessary for the recordation and/or protection of the cultural resources. In considering any suggested mitigation proposed by the consulting archaeologist to	LTS

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Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
	mitigate impacts to historical resources or unique archaeological resources, the Project proponent will determine whether avoidance is feasible in light of the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed on other parts of the Project site while the mitigation for historical resources or unique archaeological resources is carried out. In addition, pursuant to Sections 5097.97 and 5097.98 of the California Public Resources Code and Section 7050.5 of the California Health and Safety Code, in the event of the discovery of human remains, all work will be halted and the County Coroner will be immediately notified. If the remains are determined to be Native American, their treatment and disposition will adhere to the Native American Heritage Commission guidelines.	
Impact 4.12.2: The Project would cause adverse effects on unknown paleontological resources. (Potentially significant)	**Mitigation Measure 4.12.2:** The City shall notify a qualified paleontologist of unanticipated discoveries, in order to document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in Section 15064.5 of the CEQA Guidelines. In the event a fossil is discovered during construction, activities that could potentially affect the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The paleontologist will notify City to determine procedures to be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist will prepare an excavation plan for mitigating the effect of the Project on the qualities that make the resource important, and the plan will be implemented. The plan will be submitted to the City for review and approval.	LTS

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Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
Threatened and Endangered Species		
Impact 4.13.1: Construction of the Proposed Project could result in impacts to the following special-status species: valley elderberry longhorn beetle, blunt-nosed leopard lizard, giant garter snake, Swainson's hawk, greater sandhill crane, and San Joaquin kit fox. (Potentially significant) **Impact 4.13.1a:** One elderberry shrub is located along an access road north of the firing range in the eucalyptus grove. As currently planned, construction of the proposed Project would require the removal of the one shrub located in the eucalyptus grove. This shrub contains five stems greater than 1 inch (but less than 3 inches) in diameter, does not have beetle exit holes, and is within historically riparian habitat. Without mitigation, this is considered to be a significant impact.	**Mitigation Measure 4.13.1a:** The one elderberry shrub that cannot be avoided by the project shall be transplanted following USFWS (1999) guidelines. Transplanting this shrub meets the definition of "take" of a federally-listed species and will require coordination with and approval from the USFWS. Transplanting shall only occur when the shrub is dormant (approximately November through the first two weeks in February) and shall follow the procedures described in USFWS (1999) as updated. The area that the shrub is transplanted to shall also be planted with at least 10 additional elderberry cutting or seedlings, and at least 5 associated native species, and shall be protected in perpetuity per USFWS (1999).	LTS
Impact 4.13.1b: Habitat for the blunt-nosed leopard lizard (alkali scrub and non-native annual grasslands) occurs in the former peach pit disposal area in the western portion of the Project study area. No Project construction would occur in the alkali or grassland habitat of this area. (Less than significant)	None required.	LTS
Impact 4.13.1c: Construction of the new roadway over Hartley Slough at the WWTP entrance and the new effluent outfall, the filling of the southern portion of the effluent channel, the rerouting of Hartley Lateral and Paden Drain, and subsequent dewatering of a portion of Hartley Lateral would involve work within potential giant garter snake aquatic and upland habitat and would result in 2.03 acres of temporary and 1.24 acres of permanent habitat loss.	**Mitigation Measure 4.13.1c:** The following mitigation measures shall be implemented to reduce Project impacts on giant garter snake: • All construction activity within giant garter snake habitat shall be conducted between May 1 and October 1. This is the active period for giant garter snakes and the potential for direct impacts are reduced because snakes are actively moving and avoiding danger. More danger is posed to snakes during their inactive period, because they are occupying underground burrows or crevices and are more susceptible to direct effects, especially during excavation. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take.	LTS

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In addition, inadvertent construction of the Project would result in temporary habitat degradation and, potentially, direct take. Permanent loss includes temporary impacts that span more than two seasons (one season is May 1 to October 1). Without mitigation, this is considered to be a potentially significant impact.	• Any dewatered habitat must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat. • Construction personnel shall participate in a worker environmental awareness program. Under this program, workers shall be informed about the presence of giant garter snakes and habitat associated with the species and that unlawful take of the animal or destruction of its habitat is a violation of the Federal Endangered Species Act (FESA). This instruction shall be conducted by a qualified biologist prior to construction activities. Proof of this instruction shall be submitted to the City. The City shall implement a fresh emergent marsh monitoring program to determine if increased WWTP discharge is degrading giant garter snake habitat quality. If degradation is found, the City shall consult with the U.S. Fish and Wildlife Service (USFWS) to identify and implement suitable habitat compensation consistent with USFWS mitigation policy for this species. • Within 24 hours before construction activities begin in areas of giant garter snake habitat, the site shall be inspected by a qualified biologist. The biologist will provide the City with a field report form documenting the monitoring efforts within 24 hours of commencement of construction activities. The monitoring biologist shall be available thereafter; if a snake is encountered during construction activities, the monitoring biologist shall have the authority to stop construction activities until appropriate corrective measures have been completed or it is determined that the snake will not be harmed. Giant garter snakes encountered during construction activities will be allowed to move away from construction activities on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current Service recovery permits pursuant to section 10(a)1(A) of FESA. The biologist shall be required to report any incidental take to the City immediately by telephone and by written letter within one working day. The Project area shall be reinspected whenever a lapse in construction activity of two weeks or greater has occurred. • Clearing of wetland vegetation will be confined to the minimal area necessary to excavate toe of bank for riprap or fill placement. Excavation of channel for removal of accumulated sediments will be accomplished by using equipment located on and operated from top of bank, with the least interference practical for emergent vegetation.	

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SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
	• Movement of heavy equipment to and from the project site shall be restricted to established roadways to minimize habitat disturbance. Preserved giant garter snake habitat shall be designated as Environmentally Sensitive Areas and shall be flagged by a qualified biologist and avoided by all construction personnel. • After completion of construction activities, any temporary fill and construction debris shall be removed and, wherever feasible, disturbed areas shall be restored to pre-project conditions. • Affected giant garter snake habitat shall be replaced or restored in kind at a 3:1 ratio (see Table 4-9). This table assumes that temporary impacts will only last one season. • All replacement habitat must include both upland and aquatic habitat components. Upland and aquatic habitat components must be included in the replacement habitat at a ratio of 2:1 upland acres to aquatic acres (see Table 4-9). • Restored habitat shall receive one year of monitoring with a photo documentation report due to the City one year from implementation of the restoration with pre- and post-project area photos. • Monitoring replacement habitat with photo documentation report shall be conducted for five years and submitted to the City annually. The calculations of acres lost assumes no impacts to land north of the access road paralleling the north bank of the southern reach of the effluent channel; disturbance during only one season; and the revegetation of all temporarily disturbed areas.	
Impact 4.13.1d: A relatively small amount of potential foraging habitat would be lost to Project construction; however, nesting pairs of Swainson's hawks in the Project study area could be adversely affected by construction activities. (Potentially significant)	**Mitigation Measure 4.13.1d:** In order to avoid impacts to nesting Swainson's hawk, pre-construction surveys shall be conducted by a qualified biologist during the bird and raptor breeding season (March 1 to August 15), before the start of any construction activities. Similar to Mitigation Measure 4.13.2d, the Project applicant shall contract with a qualified biologist to conduct surveys in habitat suitable for nesting raptors. However, for Swainson's hawk, the survey area includes a one-half mile zone from any construction activities. Surveys may be combined with general raptor surveys as detailed in mitigation measure 4.13.2d and shall follow the same survey schedule.	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
	If nesting Swainson's hawk is detected within the survey area, the Project applicant shall install a one-half-mile buffer around the nests of Swainson's hawk. No construction activities shall be allowed within these buffers during active nesting. Buffers shall be marked in the field with stakes and flagging at all potential access points to the buffer. Buffers shall remain in place until the nest is no longer active, as determined by a qualified biologist. If a buffer distance needs to be reduced, a qualified biologist will determine if the reduction is appropriate, and what the reduced buffer distance will be. A reduction in buffer distance must be approved by the City of Merced, who may consult with CDFG. If the buffer is reduced, a qualified biologist shall be retained to monitor the nest daily during construction activity occurring within one-half-mile of the nest. The biologist shall inform the City's construction manager immediately if construction activities within the half mile buffer threaten to cause the nest to fail.	
Impact 4.13.1e: Construction activities could cause the loss of foraging habitat for wintering greater sandhill crane within the Project study area. (Less than significant)	None required.	LTS
Impact 4.13.1.f: The Project would impact potential San Joaquin kit fox denning habitat in the grasslands and alkali scrub in the western portion of the Project study area or to the open areas within and surrounding the Project study area that may serve as movement or linkage habitat for San Joaquin kit fox. (No impact)	None required.	NI
Impact 4.13.2: The Project study area provides habitat for several species of concern. The species with potential to occur are: Sacramento splittail, western pond turtle, tricolored blackbird, burrowing owl, ferruginous hawk, mountain plover, white-tailed kite, loggerhead shrike, Merced kangaroo rat, San Joaquin pocket mouse, and American badger. Construction and/or operation of the proposed Project may temporarily or permanently impact fish and wildlife species or substantially reduce their habitats. This is a potentially significant impact. **Impact 4.13.2a:** Construction activities may affect nesting tricolored blackbird, potentially reducing reproductive success. Without mitigation, this is considered a significant impact.	**Mitigation Measure 4.13.2a:** Implement measures to avoid construction-related impacts to tricolored blackbirds. In order to avoid impacts to nesting tricolored blackbirds, pre-construction surveys shall be conducted in potential breeding habitat within 500 feet of construction by a qualified biologist during the breeding season (March 1 to July 15), before the start of any construction activities. The Project applicant shall contract with a qualified biologist to conduct surveys in habitat suitable for tricolored colonies. Any construction within the Project study area shall avoid active tricolored blackbird colonies by a 500 foot buffer. If warranted by site conditions (as evaluated and documented by a qualified biologist), this buffer may be reduced with the approval of the City, which may consult with CDFG.	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
Impact 4.13.2b: Construction within aquatic habitats in the Project study area may result in direct mortality of western pond turtle, as well as basking habitat for western pond turtle. Construction of the outfall in Hartley Slough would permanently remove about 0.1 acre of aquatic habitat. Relative to the availability of aquatic habitat, the loss of this habitat would be considered less than significant for this species.	**Mitigation Measure 4.13.2b:** Implement measures to avoid construction-related impacts to Sacramento splittail and western pond turtle. To avoid mortality of Sacramento splittail or western pond turtle during construction, a qualified biologist shall be onsite during any dewatering activities. This biologist shall remove any stranded Sacramento splittail or western pond turtles and shall release them to Hartley Slough.	LTS
Impact 4.13.2c: Several areas within the Project study area have potential to support burrowing owls. If burrowing owl is found to occupy the Project study area, then construction activities may result in direct habitat loss, take, or cause abandonment of the nest. Without mitigation, this is considered a significant impact.	**Mitigation Measure 4.13.2c:** Implement measures to avoid construction-related impacts to burrowing owl. The following mitigation will be implemented to avoid potential impacts from Project construction activities: • A pre-construction survey of suitable habitat and buffers will be conducted within 30 days prior to construction to ensure no additional burrowing owls have established territories since the initial surveys. If ground disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site shall be resurveyed. • No disturbance shall occur within 75 meters (~250 feet) of an occupied burrow during the breeding season (February 1 – August 31) or within 50 meters (~160 feet) during the non-breeding season. • Foraging habitat contiguous with occupied burrow sites shall be permanently preserved at a ratio of 6.5 acres per pair of breeding or single unpaired resident burrowing owl; this is equivalent to a 100-meter (~300-foot) foraging radius around the burrow. The protected habitat shall be adjacent to occupied burrowing owl habitat and its configuration shall be approved by a qualified biologist. • When destruction of occupied burrows is unavoidable, existing unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows shall be created by installing artificial burrows at a ratio of 2:1 on the protected lands site. If owls must be moved away from the disturbance area, passive relocation with one-way doors shall be used, but only during the non-breeding season. Owls shall be excluded from burrows in the immediate impact zone and within a 50-meter (~160-foot) buffer zone by installing one-way doors in burrow entrances. One-way doors shall be left in place 48 hours to ensure that owls have left the burrow before excavation. Two natural or artificial burrows shall be provided for each burrow in the Project study area that will be rendered biologically	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
	unsuitable. The Project study area shall be monitored daily for one week to confirm owl use of the new burrows before excavating burrows in the immediate impact zone. Burrows shall be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe shall be inserted into the tunnels during excavation to maintain an escape route for any animals within the burrow.	
Impact 4.13.2d: The Project area provides suitable nesting and foraging habitat for white-tailed kite, loggerhead shrike, and other birds. The approximately 20 acres of potential foraging habitat lost to Project construction is unlikely to affect the success of these birds. Therefore, the loss of foraging habitat is considered less than significant. However, nesting pairs of white-tailed kite, loggerhead shrike, and other birds in the Project study area may be adversely affected by construction activities. Failure of a raptor nest (protected under Fish and Game Code Section 3503) due to Project construction would be a significant impact.	**Mitigation Measure 4.13.2d:** Implement measures to avoid construction-related impacts to nesting raptors. In order to avoid impacts to nesting raptors, pre-construction surveys shall be conducted by a qualified biologist during the raptor breeding season (March 1 to August 15), before the start of construction activities. The Project applicant shall provide a qualified biologist to conduct surveys in habitat suitable for nesting raptors and other birds within *500 feet* of any construction activities. These surveys shall be conducted by a qualified biologist with demonstrated bird and raptor nest-searching experience. Surveys shall be conducted no less than one week apart on the following schedule or until construction begins: 1 survey between February 15 and March 20 2 surveys between March 20 and April 5 2 surveys between April 5 and April 20 2 surveys between June 1 and July 20 If nesting raptors are detected within the survey area, the Project applicant shall maintain a 500-foot buffer around the nest. No construction activities shall be allowed in these buffers. Buffers shall be marked in the field with stakes and flagging at all potential access points to the buffer. Buffers shall remain in place until the nest is no longer active, as determined by a qualified biologist. If warranted by site conditions (as evaluated and documented by a qualified biologist), this buffer may be reduced with the approval of the City, which may consult with CDFG. The biologist shall submit the locations of nests detected during the surveys to the CNDDB.	LTS
Impact 4.13.2e: The Project area and surrounding vicinity may provide foraging habitat for wintering ferruginous hawk and mountain plover. Given the abundance of available open habitat surrounding the Project study area, the loss of foraging habitat to construction within the Therefore, the loss of foraging habitat is considered less than significant.	None required.	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
Potential year-round habitat exists in the Project area for Merced kangaroo rat, San Joaquin pocket mouse, and American badger. These species have potential to occur in the grassland and scrub habitat within the peach-pit disposal and wildlife area in the western portion of the Project study area, adjacent to Hartley Slough. No construction activities would occur in this area. Therefore, with respect to these species, the Project would have no impact.		
Environmentally Sensitive Areas		
Impact 4.14.1: Implementation of the Project would result in the conversion of economically viable prime farmland and farmland of statewide importance to non-agricultural uses. This impact is considered significant.	**Mitigation Measure 4.14.1**: The 25-acres of farmland within the WWTP expansion area, not required for the WWTP facility, shall remain in an agricultural land use. The City shall pay into a "farmland trust" fund for Merced County that will acquire agricultural conservation easements to compensate for the conversion of 20-acres of farmland within the WWTP expansion area. The farmland subject to the easements shall be of the same acreage, and at least the same category of farmland, as identified by the latest FMMP report, as that farmland affected at the WWTP. With the implementation of Mitigation Measure 4.14.1, the impact to the remaining 25-acres would be reduced to a less-than-significant level. However, offsite conservation easements over existing farmland would not provide full Project-level mitigation, because they would not compensate for the loss or farmland due to the Project or replace the resources lost because they would not reduce the overall net loss of farmland by the WWTP. Therefore, the direct impact and permanent conversion of important farmlands as a result of the expanded WWTP would be significant and unavoidable.	LTS
Impact 4.14.2: Construction and/or operation would affect federally protected wetlands, as defined by Section 404 of the Clean Water Act, by removal, filling, hydraulic interruption, or other disturbance. This impact would be potentially significant.	**Mitigation Measure 4.14.2a:** Permanent impacts to jurisdictional waters of the U.S. will be mitigated at a minimum 1:1 ratio consistent with the regulatory guidance of the Corps and/or other agencies with regulatory authority. Compensatory mitigation may include the purchase of mitigation credits at a Corps-approved wetland mitigation bank, or through other options consistent with the Section 404 regulatory program including "in-lieu-fee" mitigation in which the applicant provides funds to an in-lieu-fee sponsor such as the National Fish and Wildlife Foundation (NFWF), or onsite mitigation.	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
	Mitigation Measure 4.14.2b: Construction activities shall avoid and minimize adverse impacts to jurisdictional waters of the U.S. the maximum practicable extent. Areas used for staging and temporary stockpiling during project construction shall be prohibited from being within such waters including wetlands, and shall be clearly defined on final construction plans. Storage of equipment and/or debris shall not occur within 25 feet of jurisdictional waters. Work within jurisdictional waters including trenching and bridge construction shall occur during low-flow or dry periods. Standard and appropriate BMPs including use of silt fences and/or straw bales shall be utilized to prevent incidental discharge of material into jurisdictional waters.	
Impact 4.14.3: Project construction and/or operation could impact sensitive natural communities identified by CDFG or USFWS. (No impact)	None required.	NI
Impact 4.14.4: The Project would conflict with an adopted HCP, NCCP, or other approved local, regional, or state plan for conservation of habitat. (No impact)	None required.	NI
Impact 4.14.5: Project construction on floodway that could impede floodwaters or expose structures to significant losses. (Less than significant)	None required.	LTS
Impact 4.14.6: Project construction could cause the loss of critical habitats. (No impact)	None required.	NI
Solid Waste and Energy		
Impact 4.15.1: Project construction and operation wastes would not be disposed of in a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs. (Less than significant)	None required.	LTS
Impact 4.15.2: Construction of the Project would conflict with federal, state, and local solid waste management statutes and regulations. (Less than significant)	None required.	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
Impact 4.15.3: Operation of the Project would use substantial amounts of energy, which in turn could create a substantial increase in demand upon existing sources of energy, or require construction of additional facilities for energy generation or distribution to meet the increased demand. (Potentially significant)	**Mitigation Measure 4.15.3:** The City will consult with MID to determine the appropriate energy facility upgrades needed to supply the expanded WWTP and in turn will obtain a will-serve letter from MID for energy supplies.	LTS
Transportation and Circulation		
Impact 4.16.1: Construction of the Project would increase the number of daily vehicle trips on local roadways that provide access to the WWTP, in relation to existing traffic and roadway capacity. (Potentially significant)	**Mitigation Measure 4.16.1a:** Prior to the start of Project construction, a Traffic Control Plan shall be prepared addressing vehicle movement along Project-affected roadways and intersections. This plan shall designate haul routes for the Project in consultation with Caltrans and Merced County Department of Transportation. The plan should include the following measures: • Maintaining the maximum amount of travel lane capacity during non-construction periods. • If larger construction equipment or articulated trucks will have difficulty maneuvering at haul route-affected intersections, provide a flagman for traffic control at the access road on an as-needed basis. **Mitigation Measure 4.16.1b:** The City shall arrange for a 24-hour telephone hotline to address public questions and complaints during Project construction. **Mitigation Measure 4.16.1c:** Heavy trucks and other construction transport vehicles shall avoid the busiest commute hours (7 to 8 a.m. and 5 to 6 p.m. on weekdays) on highly congested roadways in the Merced community.	LTS
Impact 4.16.2: Operation of the Project would substantially increase the number of daily vehicle trips on local roadways that provide access to the WWTP, in relation to existing traffic and roadway capacity. (Potentially significant)	**Mitigation Measure 4.16.2:** Implement Mitigation Measures 4.16.1a and 4.16.1c.	LTS
Impact 4.16.3: Construction of the Project would affect general and emergency traffic access to the WWTP, the adjacent shooting range, and the Merced Wildlife Management Area. (Less than significant)	None required.	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
Impact 4.16.4: Construction of the Project would result in significant disruptions to transit service. (Less than significant)	None required.	LTS
Impact 4.16.5: Construction of the Project would generate a need for construction crew parking. (Less than significant)	None required.	LTS
Impact 4.16.6: Construction of the Project would increase wear and tear on the access routes used by construction vehicles to access the Project work site. (Potentially significant)	**Mitigation Measure 4.16.6:** Prior to construction, the City's shall assess current road conditions for the Project construction haul routes including the local access roads and identify post-construction road restoration requirements. An agreement shall be entered into by Merced County prior to construction that details suitable post-construction road restoration improvements. The City shall fund roadway repairs or rehabilitation as necessary such that post-construction requirements are met.	LTS
Public Services		
Impact 4.17.1: The WWTP Expansion Project would generate the need to alter existing government facilities and services including fire protection, police protection, schools, parks and other public facilities. (Less than significant)	None required.	LTS
Public Health and Safety		
Impact 4.18.1: Construction of the Project may expose construction workers, the general public, and the environment to pre-existing hazardous materials contamination. (Potentially significant)	**Mitigation Measure 4.18.1a:** If contaminated soil and/or groundwater or suspected contamination were encountered during Project construction, work shall be halted in the area, and the type and extent of the contamination shall be identified. A contingency plan to dispose of any contaminated soil or groundwater should be developed through consultation with the appropriate regulatory agencies. If dewatering were to occur during Project construction, the RWQCB should be consulted for any special requirements such as containing the water until it can be sampled and analyzed to ensure that no contaminants are in the groundwater that could be released into the Merced Irrigation District drainage system.	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
	Hazardous materials associated with construction equipment, such as fuels, oils, antifreeze, coolants, and other substances could adversely affect water quality if released to surface waters. If precautions are not taken to contain contaminants, construction could produce contaminated stormwater runoff (nonpoint source pollution), a major contributor to the degradation of water quality. In addition, hazardous materials associated with construction equipment could adversely affect surface and groundwater quality if spilled or stored improperly. Without mitigation, construction of the Project could result in potentially significant impacts.	
	Mitigation Measure 4.18.1b: Implement Mitigation Measure 4.2.1b.	LTS
Impact 4.18.2: During construction, there is a risk of exposure to hazardous materials such as fuel and other chemicals used for excavation and construction activities. (Potentially significant)	**Mitigation Measure 4.18.2:** The City shall ensure, through the enforcement of contractual obligations, that all contractors transport, store and handle construction-related hazardous materials in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by the Department of Transportation, California RWQCB, the local fire departments, and the local environmental health department. Recommendations shall include as appropriate transporting and storing materials in appropriate and approved containers, maintaining required clearances, and handling materials using applicable federal, state and/or local regulatory agency protocols. In addition, all precautions required by the RWQCB issued NPDES construction activity stormwater permits would be taken to ensure that no hazardous materials enter any nearby waterways. In the event of a spill, the City shall ensure, through the enforcement of contractual obligations, that all contractors immediately control the source of any leak and immediately contain any spill utilizing appropriate spill containment and countermeasures. If required by the local fire departments, the local environmental health department, or any other regulatory agency, contaminated media shall be collected and disposed of at an offsite facility approved to accept such media.	LTS
Impact 4.18.3: The Project could interfere with an emergency response or evacuation plan. (Less than significant)	None required.	LTS
Impact 4.18.4: Construction of the Project would interfere with safe operations of the Merced Municipal Airport or result in a safety hazard for people residing or working in the Project area, due to its proximity to the airport. (No impact)	None required.	NI

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
Impact 4.18.5: Construction of the Project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires. (Potentially significant)	**Mitigation Measure 4.18.5a:** The City shall designate and ensure, through the enforcement of contractual obligations, that during construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. The City shall keep these areas clear of combustible materials in order to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws. **Mitigation Measure 4.18.5b:** Construction crews shall be required to carry sufficient fire suppression equipment to ensure that any fire resulting from construction activities is immediately extinguished. All off-road equipment using internal combustion engines shall be equipped with spark arrestors.	LTS
Impact 4.18.6: The implementation of the WWTP Expansion Project could present additional vector concerns. (Less than significant)	None required.	LTS
Impact 4.18.7: The use of reclaimed wastewater effluent carries the potential for human contact. (Less than significant)	None required.	LTS
Population and Housing		
Impact 4.19.1 The Proposed Project would displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere. (No impact)	None required.	LTS
Land Use and Zoning		
Impact 4.20.1: The Project would be consistent with applicable land use goals, policies, and objectives of the City's and Merced County's General Plans. (Less than significant)	None required.	LTS

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation **
Impact 4.20.2: Implementation of the Project would create land uses that are incompatible with current and planned land uses adjacent to Project facilities. (Less than significant)	None required.	LTS
Impact 4.20.3: Construction of the Project would not create an obstruction that could physically divide an established community. (No impact)	None required.	LTS
Impact 4.20.4: Implementation of the Project would not conflict with a Williamson Act contract or adjacent agricultural zoning. (No impact)	None required.	LTS
Impact 4.20.5: Construction of the Project could impact farmland and/or adjacent agricultural operations. Additionally, routine maintenance over the long term could potentially conflict with these operations. (Potentially Significant)	**Mitigation Measure 4.20.5:** The City shall consult with all affected landowners where the proposed expansion area would encroach onto productive farmland. As part of the easement acquisition process, the City and affected landowners shall negotiate an agreed-upon compensation for the loss of any existing pasture and/or row crops currently in production. During these consultations, the City shall also, in conjunction with landowners' input, identify areas within the expansion area that could be left in agricultural production. Compensation for the loss of crops and associated revenues will be up to the provisions of law.	LTS

Notes: LTS = Less than significant; SU = Significant and unavoidable; NI = No impact

CHAPTER 1
Project Background

1.1 Introduction

The City of Merced is proposing to upgrade and expand the capacity of its wastewater treatment plant (WWTP) in order to meet demand generated within its Specific Urban Development Plan (SUDP) and the University of California Merced Long Range Development Plan (LRDP) and to satisfy current and anticipated effluent quality regulations,. Without making substantative facility improvements, the WWTP Expansion Project (the Project) would initially increase the capacity of the WWTP from 10 million gallons per day (mgd) to 11.5 mgd. This initial upgrade would be followed by a series of improvements enabling WWTP capacity to reach demand up to 20 mgd.

1.2 Purpose and Need for the Project

The City's has two primary objectives for implementing the Project:

- Install sufficient WWTP capacity to meet wastewater loads generated by planned population growth and development within the City's existing service area, the adjacent UC-Merced campus, and new growth areas identified and made part of the City's SUDP area.

- Install additional levels of wastewater treatment sufficient to meet current and future effluent quality regulatory limits by replacing and adding to aged facilities and implementing improved wastewater treatment technologies and processes.

Completion of these two objectives would enable the City to meet anticipated increases in WWTP capacity while maintaining effluent quality within current and anticipated regulatory limits.

1.2.1 Need for Additional WWTP Capacity

The existing WWTP was constructed in the late 1970s, and has undergone a series of improvements from 1974 to 1980, 1994, and 2003. However, several circumstances have changed, necessitating expansion of the WWTP, including adoption of the 1997 SUDP and the 2001 University of California-Merced (UC-Merced) LRDP. Build-out of the 1997 SUDP would generate an anticipated 17.1 mgd of wastewater flows, and build-out of the UC-Merced LRDP would generate an additional 2.25 mgd of wastewater flows, all of which would be treated at the City's WWTP. In addition, the City is currently preparing an update to its 1997 SUDP, which would identify new growth areas.

The City further anticipates that waste discharge requirements will become more stringent and further restrict allowable contaminant loads in the WWTP effluent. To meet these anticipated requirements, additional treatment methods will need to be installed, and use of other systems, such as chlorine disinfection systems, will need to be terminated.

1.3 Project Description

The City's objectives would be met by implementation of a series of proposed facility improvements described in Table 1-1. Facility improvements would occur in stages corresponding to population growth and development in the City's service area and on UC Merced campus.

TABLE 1-1
PROPOSED FACILITY IMPROVEMENTS

Improvements	Description
12mgd Capacity	
Tertiary pump station	New tertiary pump station for pumping secondary effluent to filters
Equalization basin	New 7-million-gallon basin to equalize peak hourly flows
Rapid mix & flocculation basin	New basin used to chemical condition the secondary effluent prior to filtration
Tertiary filters	Six cloth disk filter units
Ultraviolet disinfection	Three low pressure high intensity lamp ultra-violet channels for pathogen removal
Reaeration basin	New reaeration basin to maintain dissolved oxygen levels above 5 milligrams per liter
Outfall pipe to Hartley Slough	New 54-inch pipe directly to Hartley Slough
Stormwater drain pump station	Two stormwater pump stations that pump stormwater to first flush basin and then back to plant headworks for treatment
Chemical storage	Chemical tanks for coagulants and pH adjustment
Chemical building	New chemical building housing chemical metering pumps and electrical switchgear
Solids dewatering building	New building housing three centrifuges and a truck loading station for biosolids dewatering
Digested biosolids holding tank	New 80-foot tank for digested biosolids prior to dewatering
Active solar dryers	Six greenhouses to dry biosolids to above 50 percent solids prior to disposal
Emergency generator	Expansion of the plant's generator system for emergency power
16mgd Capacity	
Aeration basin #4	Addition of a fourth 1.25 million-gallon aeration basin
Blower building No .2	New blower building housing 3 new aeration blowers
Activated biosolids pump station	New return biosolids pump station for secondary clarifiers No. 3 and 4
Secondary clarifier No. 4	Addition of a fourth 110-foot-diameter secondary clarifier
Dissolved air flotation thickener	New dissolved air flotation thickener for thickening waste solids prior to digestion
Gas flare	New gas flare for digester gas
Primary digester	New 80-foot-diameter primary digester
Digester control building	New building for digester feed pumps and heat exchangers
New headworks	Addition of new mechanical screens, grit removal, and influent pumps
Active solar driers	3 new active solar driers
Laboratory and administration building	New water/wastewater laboratory and offices for plant staff located near plant entrance

TABLE 1-1
PROPOSED FACILITY IMPROVEMENTS

Improvements	Description
20 mgd Capacity	
Head works	Addition of one mechanical screen
Influent pump station	Addition of one submersible pump
Primary clarifier No. 4	Addition of a fourth 95-foot-diameter primary clarifier
Aeration basin No. 5	Addition of a fifth 1.25-million gallon aeration basin
Secondary clarifier No. 5	Addition of a fifth 110-foot-diameter secondary clarifier
Tertiary filtration	Construction of two additional cloth disk filter units
Ultra-violet (UV) disinfection	Construction of an additional UV channel
Effluent cooling	Use of additional surface aerators or cooling towers
Primary digester	Construction of a fourth primary digester

Source: ECO:LOGIC, 2005

In order to accommodate these new facilities, the Project would acquire about 46 acres of land adjacent to the existing WWTP. Approximately half of the land would be used for facility expansion, with the remaining areas being used as an odor buffer and to enable access to adjacent facilities for maintenance purposes. New levees would provide 100-year flood protection around the northern end of the WWTP. Figure 1-1 shows the proposed WWTP layout.

In response to comments received during the Draft EIR review process, the City proposes two minor project modifications, consisting of:

- Lands totaling about 4 acres located on Gove Road will not be acquired as part of WWTP access reconstruction. These lands are located along Gove Road and are shown in Figure 2-4 of the Draft EIR. All roadway reconstruction activities will remain with the existing public right-of-way.

- The City comply with rules and regulations of the San Joaquin Valley Air Pollution Control District to reduce or otherwise offset air pollutant emissions associated with construction of the proposed Project.

SOURCE: ECO:LOGIC, 2006; City of Merced; and ESA, 2006

City of Merced Wastewater Treatment Plant Improvement Project . 205087

Figure 1-1

Proposed WWTP Facilities

CHAPTER 2
Comments Received on Draft EIR and Responses to Comments

List of Commenting Parties

Parties who submitted comments on the August 2006 Draft EIR are listed in Table 2-1. For each commenter, the table identifies the assigned comment letter number and the number of individual comments contained in each letter. Comment letters and responses are reproduced in this chapter.

TABLE 2-1
LIST OF COMMENTORS ON DRAFT EIR

Commenter Name/Agency	Assigned Comment Letter Number	Comments
Governor's Office of Planning and Research	Not Assigned	No Comments
Kim Wittorff, Environmental Scientist State Water Resources Control Board	1	1 through 9
Jessica Willis, Air Quality Specialist San Joaquin Valley Air Pollution Control District	2	1 through 8

Comments on the Draft EIR were received from the City of Merced Planning Commission during a public meeting held on October 4, 2006. Several issues raised by the Commissioners warranted formal response and a memo containing these comments and responses is attached at the end of this section.

Written Comments Received on the Draft EIR and Responses to Comments

Copies of the written comments received on the Draft EIR with the individual comments identified are reproduced on the following pages along with response to each comment. Where the response notes that change, clarifications, or modifications to the Draft EIR are appropriate, these changes are presented in Chapter 4 of this document.

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Arnold Schwarzenegger
Governor

Sean Walsh
Director

September 28, 2006

RECEIVED
SEP 29 2006
ENGINEERING DEPT.

David Tucker
City of Merced
678 W. 18th Street
Merced, CA 95340

Subject: Wastewater Treatment Plant Expansion Project
SCH#: 2005101135

Dear David Tucker:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on September 27, 2006, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2005101135
Project Title Wastewater Treatment Plant Expansion Project
Lead Agency Merced, City of

Type EIR Draft EIR
Description The City of Merced is proposing to upgrade and expand the capacity of its WWTP to accommodate planned wastewater loads generated within its service area and the adjacent UC Merced campus, and to comply with current and anticipated effuent quality regulatory limits. Ultimately, the Project would reach a capacity of 20 mgd.

Lead Agency Contact
Name David Tucker
Agency City of Merced
Phone (209) 385-6846 **Fax**
email
Address 678 W. 18th Street
City Merced **State** CA **Zip** 95340

Project Location
County Merced
City Merced
Region
Cross Streets Gove Road
Parcel No.
Township 8 **Range** 13 **Section** **Base** MDB&M

Proximity to:
Highways 59
Airports
Railways
Waterways Hartley Slough
Schools
Land Use Public / Agriculture

Project Issues Agricultural Land; Air Quality; Archaeologic-Historic; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Growth Inducing; Landuse; Noise; Public Services; Sewer Capacity; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 10; Department of Health Services; Integrated Waste Management Board; State Water Resources Control Board, Clean Water Program; Regional Water Quality Control Bd., Region 5 (Fresno); Department of Toxic Substances Control; Native American Heritage Commission

Date Received 08/14/2006 **Start of Review** 08/14/2006 **End of Review** 09/27/2006

Note: Blanks in data fields result from insufficient information provided by lead agency.

Responses to Comment Letter 1

SEP-27-2006 15:48 CLEAN WATER PROGRAMS 916 341 5707 P.02

State Water Resources Control Board

Division of Financial Assistance
1001 I Street, Sacramento, California 95814 • (916) 341-5700
Mailing Address: P.O. Box 944212 • Sacramento, California 94244-2120
FAX (916) 341-5707 • http://www.waterboards.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

SEP 27 2006

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SEP 27 2006
STATE CLEARING HOUSE

Clear 9-27-06 C

Mr. Dave Tucker
City Engineer
City of Merced
678 West 18th Street
Merced, CA 95340-4708

Dear Mr. Tucker:

DRAFT ENVIRONMENTAL IMPACT REPORT (EIR); CITY OF MERCED (CITY); WASTEWATER TREATMENT PLANT EXPANSION PROJECT (PROJECT); STATE CLEARINGHOUSE NO. 2005101135

Thank you for the opportunity to review the above document. State Water Resources Control Board (State Water Board) staff has reviewed the Draft EIR and has several specific comments, provided below.

We understand that the City is pursuing a State Revolving Fund (SRF) loan for the proposed Project. Please provide us with the following documents: (1) eight copies of the Draft and Final EIR, (2) the resolution certifying the EIR and making California Environmental Quality Act (CEQA) findings, (3) a Statement of Overriding Considerations for identified significant and unavoidable environmental impacts, (4) all comments received during the review period and your responses to those comments, (5) the adopted Mitigation Monitoring Plan (MMP), and (6) the Notice of Determination filed with the Governor's Office of Planning and Research applicable to the Project. In addition, we would appreciate notices of any hearing or meeting held regarding environmental review of the SRF Project.

SRF loans are partially funded by the U.S. Environmental Protection Agency, and require additional "CEQA-Plus" environmental documentation and review. The State Water Board is required to consult directly with agencies responsible for implementing federal environmental laws and regulations, including distributing documents for federal review. Applicants must comply with federal laws pertaining to cultural resources, specifically Section 106 of the National Historic Preservation Act, and provisions of the federal Endangered Species Act. SRF loan projects located in non-attainment areas may be required to meet the federal General Conformity Rule for the federal Clean Air Act.

California Environmental Protection Agency

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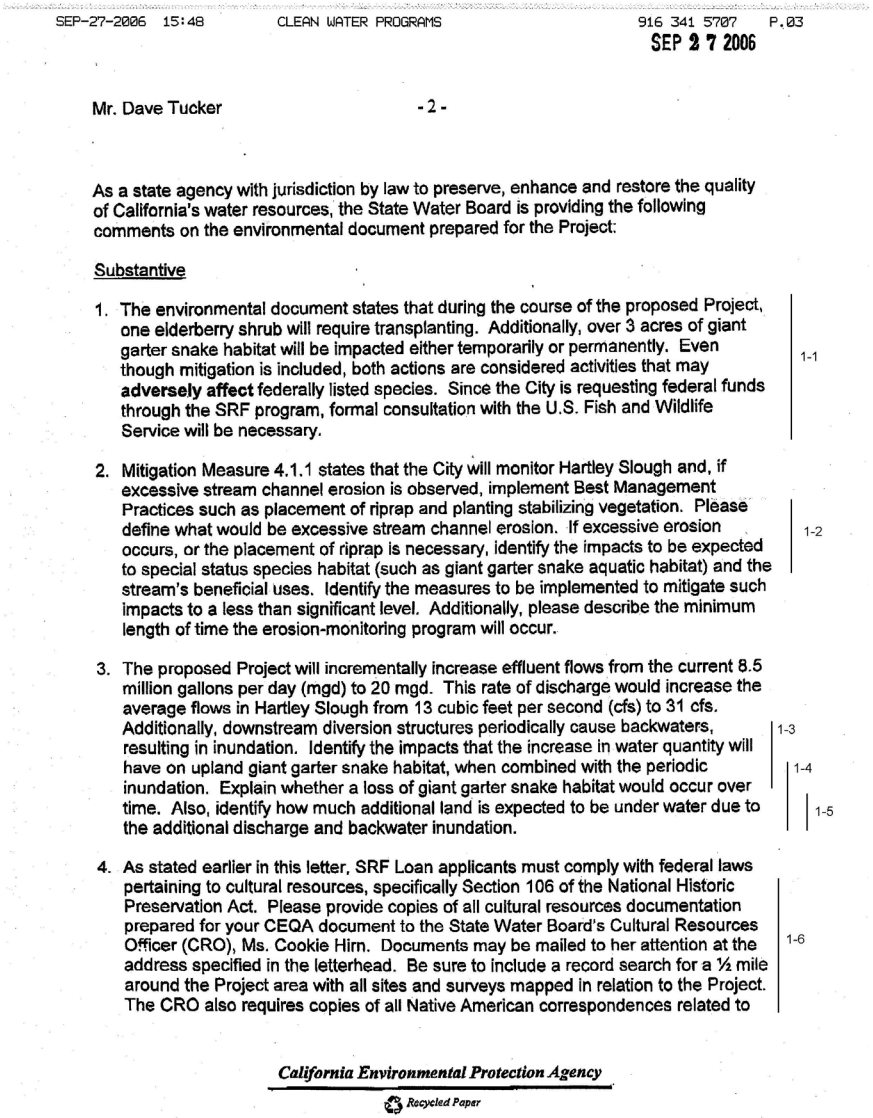

SEP-27-2006 15:48 CLEAN WATER PROGRAMS 916 341 5707 P.03

SEP 2 7 2006

Mr. Dave Tucker -2-

As a state agency with jurisdiction by law to preserve, enhance and restore the quality of California's water resources, the State Water Board is providing the following comments on the environmental document prepared for the Project:

Substantive

1. The environmental document states that during the course of the proposed Project, one elderberry shrub will require transplanting. Additionally, over 3 acres of giant garter snake habitat will be impacted either temporarily or permanently. Even though mitigation is included, both actions are considered activities that may **adversely affect** federally listed species. Since the City is requesting federal funds through the SRF program, formal consultation with the U.S. Fish and Wildlife Service will be necessary. 1-1

2. Mitigation Measure 4.1.1 states that the City will monitor Hartley Slough and, if excessive stream channel erosion is observed, implement Best Management Practices such as placement of riprap and planting stabilizing vegetation. Please define what would be excessive stream channel erosion. If excessive erosion occurs, or the placement of riprap is necessary, identify the impacts to be expected to special status species habitat (such as giant garter snake aquatic habitat) and the stream's beneficial uses. Identify the measures to be implemented to mitigate such impacts to a less than significant level. Additionally, please describe the minimum length of time the erosion-monitoring program will occur. 1-2

3. The proposed Project will incrementally increase effluent flows from the current 8.5 million gallons per day (mgd) to 20 mgd. This rate of discharge would increase the average flows in Hartley Slough from 13 cubic feet per second (cfs) to 31 cfs. Additionally, downstream diversion structures periodically cause backwaters, resulting in inundation. Identify the impacts that the increase in water quantity will have on upland giant garter snake habitat, when combined with the periodic inundation. Explain whether a loss of giant garter snake habitat would occur over time. Also, identify how much additional land is expected to be under water due to the additional discharge and backwater inundation. 1-3 1-4 1-5

4. As stated earlier in this letter, SRF Loan applicants must comply with federal laws pertaining to cultural resources, specifically Section 106 of the National Historic Preservation Act. Please provide copies of all cultural resources documentation prepared for your CEQA document to the State Water Board's Cultural Resources Officer (CRO), Ms. Cookie Hirn. Documents may be mailed to her attention at the address specified in the letterhead. Be sure to include a record search for a ½ mile around the Project area with all sites and surveys mapped in relation to the Project. The CRO also requires copies of all Native American correspondences related to 1-6

California Environmental Protection Agency

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1-1 Comment noted. A biological assessment was prepared and included as Appendix G of the Draft EIR to facilitate formal consultation with the U.S. Fish and Wildlife Service.

1-2 Water from other sources also flow in Hartley Slough. The WWTP effluent discharge composes only a portion of the total Hartley Slough flow. These other sources of water in the Hartley Slough watershed, including stormwater runoff and irrigation return flows, may also contribute to streambank erosion; especially if they occur simultaneously.

The following criteria will be used to define excessive erosion in Hartley Slough:

- Bank undercutting (e.g., over-hanging root wads)
- Bank collapse (the ultimate effect of undercutting and/or bed scouring) e.g., banks held by structure of tree but otherwise eroded and unstable.
- Vegetation – perennial cover to waterline; sparse perennial cover to waterline; no perennial cover near waterline.
- Tree root exposure affecting stability (where trees occur in riparian zone)
- In-channel scouring

BMPs would be implemented if monitoring indicates a high rate for any of the five criteria has occurred as result of increased discharges from the WWTP. BMPs will also be implemented if a medium rate of the above criteria is observed which indicates may subsequently degrade to a high-erosion condition as result of the increased WWTP discharges.

A variety of BMPs are available to control streambank erosion. Their effectiveness would depend on site-specific conditions. Measures, such as installing riprap would be only used as a last resort to control excessive erosion. Other, less-obtrusive measures would be used where appropriate. These measures include:

- *Vegetation Plantings* - Plants can help to control erosion by shielding exposed soil and by holding soils in place with their complex root systems. Root systems also help to control the infiltration rate of the water into the soil. Additionally, streamside vegetation positively impacts the stream by contributing organic materials. Suitable riparian species native to the Merced area will be selected and used for planting.
- *Bioengineering/Integrated Methods* - Integrated methods employ a combination of protective structures and vegetation. An example is the planting of willows interspersed with rock or other hardened structures. The rock provides immediate resistance to erosion and the willows will bind together rock and soil.
- *Other Measures* – Use erosion control matting on steep slopes and use straw mulch on shallow slopes for protecting adjacent exposed soils

If placement of riprap is found to be necessary, the rock structure would result in the loss of giant garter snake habitat corresponding to the linear length of affected streambank. The reduction in linear streambank length would also reduce the corresponding upland habitat within 200-feet of the stream. This loss of giant garter snake habitat would be considered a significant impact.

Riprap would also degrade other beneficial uses of the waterway by displacing riparian vegetation and covering streambank soils. The loss of vegetation would directly reduce habitat values provided by vegetation as well as reduce associated values, such as shading, food sources, and roosting opportunities.

Measures to mitigate the loss of giant garter snake habitat are described in Section 4.7 of the DEIR. These measures would be employed to compensate for the further impacts to giant garter snake that would occur if riprap placement is needed. This mitigation measure will be noted in the Final EIR

Because the discharge rate from the WWTP would gradually increase over time as wastewater loads are generated by population growth and development, erosion monitoring would be performed on a scheduled basis corresponding with actual increases of treated WWTP effluent. At this time, the City would implement a quarterly erosion monitoring program for a one-year period for each 2 mgd (3 cfs) increase in average daily WWTP effluent discharge. The City proposes to prepare a formal monitoring plan in consultation with CDFG and other interested agencies

1-3 Stream channel inundation of Hartley Slough is controlled by a downstream diversion weir, combined with the volume of instream flows from stormwater, WWTP discharges, and agricultural activities. The increase of effluent discharge from the WWTP will contribute to the total flow in the channel.

Potential impacts to giant garter snake habitat resulting from stream channel inundation associated with the increase of WWTP treated effluent cannot be readily estimated, because of the complex variability in the volume of water originating from the other water sources.

Up to 7.9 acres of giant garter snake habitat could be adversely affected with increases in effluent discharge if it results in altering the existing emergent freshwater marsh vegetation found adjacent to Slough by either substantially increasing water depth or by substantially increasing the duration of periodic inundation.

1-4 It is expected that increases in WWTP discharge will take about 20 years to increase from an average 13 cfs to an average 31 cfs. Therefore, assuming no other changes in Hartley Slough hydrologic input, potential changes to giant garter snake habitat will occur gradually, if at all. If increases to WWTP discharge is sufficient to change the composition of the adjacent emergent freshwater marsh vegetation, the change may occur gradually as surface water elevation and/or inundation duration increases.

Because the potential impact to giant garter snake habitat cannot be estimated at this time, the City will undertake a long-term habitat monitoring program to determine if giant garter snake habitat is adversely effected by WWTP discharge increases. If it is found that existing habitat is being adversely effected, the City will initiate suitable mitigation to replace the effected area at acceptable mitigation ratios.

SEP-27-2006 15:48 CLEAN WATER PROGRAMS 916 341 5707 P.04
SEP 2 7 2006

this Project. For additional information or any questions regarding cultural resources requirements, please contact Cookie Hirn at (916) 341-5690 or via e-mail at mhirn@waterboards.ca.gov.

Editorial

1. Page 4-18, states that Project construction would result in an exceedance of the SJVAPCD and federal conformity thresholds for NO_X emissions. Since construction emissions for NO_X will be less than 50 tons per year, as shown in table 4-5, NO_X project emissions are below federal de minimis levels; 1-7
2. In Volume II, Appendix B, the City inadvertently included three copies of the same letter from Community Systems Associates, Inc; 1-8
3. Table 4-10, last line under comments says that the period for transplanting elderberry shrub is in green. There is no green shown on the table. 1-9

Thank you once again for the opportunity to review the document. If you have any questions please contact me at (916) 327-9117 or kwittorff@waterboards.ca.gov.

Sincerely,

Kim Wittorff
Environmental Scientist

cc: State Clearinghouse
(Re: SCH# 2005101135)
P. O. Box 3044
Sacramento, CA 95812-3044

California Environmental Protection Agency

Recycled Paper

TOTAL P.04

1-5 As noted in response to Item 1-4, up to 7.9 acres of adjacent emergent freshwater marsh area could potentially be affected by increases in WWTP discharge.

1-6 Comment noted. Copies of a cultural report consistent with the requirements of Section 106 of the NHPA has been prepared and submitted to SWRCB staff.

1-7 Comment noted. Construction-related NO_x emissions would only exceed SJVAPCD limits. These NO_x emissions would not exceed federal conformity thresholds. The Final EIR will reflect this correction.

1-8 While these letters are similar in content and appearance, they were submitted by three separate parties; therefore, each letter was included.

1-9 Comment noted. The comment shown in Table 4-10 should reference the color grey.

17:34 OCT 04, 2006 ID: SJVAPCD CENTRAL FAX NO: 221-4269 #7184 PAGE: 2/4

October 4, 2006

Reference No.: C200601878

Dave Tucker
City of Merced
Planning & Community Dev.
678 West 18th Street
Merced, CA 95340

Subject: Draft Environmental Impact Report (DEIR) for the City of Merced Wastewater Treatment Plant (WWTP) Expansion Project

Dear Mr. Tucker:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the project referenced above and offers the following comments:

The entire San Joaquin Valley Air Basin is designated non-attainment for ozone and particulate matter (PM10 and PM2.5). The District concurs with the DEIR that the emissions from construction equipment may exceed the District's threshold of significance of 10 tons per year of oxides of nitrogen (NOx). The District also concurs that compliance with Regulation VIII will constitute sufficient mitigation to reduce fugitive dust related PM10 impacts from construction to a level considered less than significant. The increase in emissions from this project, and others like it, cumulatively reduce the air quality in the San Joaquin Valley. A concerted effort should be made to reduce project-related emissions as outlined below: 2-1

The change to the wastewater treatment process (i.e. flares, digesters, daily throughput, etc.) may require changes to the facility's existing District permits (District Facility ID N-4215). Prior to construction, the City of Merced should submit an application for an Authority to Construct (ATC) for the wastewater treatment process in order to determine permit applicability. District approval, if appropriate, will be in the form of an ATC permit after application processing is complete. The land use authority rests with the City of Merced. For further information or assistance, please contact Mr. Ben Ellenberger in the District's Bakersfield office at (661) 326-6900. 2-2

Although the District agrees that a well-managed, modern wastewater treatment plant may not have significant odor problems, equipment failure and unusual conditions may occur that lead to odors. The WWTP has not had any odor complaints. However, if the facility has an event and creates an odor nuisance, it would be in violation of District Rule 4102 (Nuisance) and be subject to District enforcement action.

The District recommends the following amendments to the DEIR:

- The DEIR cites District's Regulation VIII (Fugitive PM10 Prohibitions) as being effective as of May 2002. However, the most current version of the rule was updated on August 19, 2004. Page 4-15, Note 2, defines visible dust as obscuring an observer's view to an opacity of equal to or greater than 40%. Per the 2004 revision, the percentage is 20% opacity. 2-3

Responses to Comment Letter 2

2-1 Comment noted. The City will comply with District regulations to minimize impacts to regional air quality.

2-2 The City intends to prepare and submit an application for an Authority to Construct when sufficient engineering information is available to address the features of the expanded WWTP facilities.

2-3 Comment noted. This change which defines the level of opacity considered to obscure an observer's view will not alter the findings and conclusions presented in the DEIR

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Mr. Tucker
DEIR Merced WWTP Expansion

October 4, 2006
Page 2

- The DEIR also states that the project will comply with Regulation VIII, specifically Rule 8011 (General Requirements). The project will be subject to all of Regulation VIII requirements including the following: Rule 8021 (Construction, Demolition, Excavation, Extraction and Other Earthmoving Activities); Rule 8031 (Bulk Materials); Rule 8041 (Carryout and Trackout); Rule 8051 (Open Areas); Rule 8061 (Paved and Unpaved Roads); Rule 8071 (Unpaved Vehicle/Equipment Traffic Areas); and Rule 8081 (Agricultural Sources). 2-4

- Adhering to the requirements of District rules should be considered compliance rather than mitigation. Mitigation is those measures taken to lower emissions above and beyond what is required by compliance with District rules. The District believes this distinction is important because mitigation measures will require the preparation of a mitigation monitoring program that provides the schedule for implementation and the enforcement mechanism. In future documents, the District recommends that compliance with District rules should be stated separately in the air quality discussion. 2-5

- The District cannot confirm the results of the Health Risk Assessment (HRA) and Toxic Air Contaminant (TAC) Assessment. Although the ISCST3 model may be appropriate for modeling health risks associated with diesel particulate matter, the HRA does not accurately assess the risk from other TACs. Therefore, the District recommends use of the latest version of the Hot Spots Analysis and Reporting Program (HARP) released by CARB because it is the only software that is compliant with the OEHHA guidelines. Also, the DEIR only summarizes the health risks and does not include the electronic input files. The District requires the electronic input files to accurately assess the HRA. 2-6 2-7

The District encourages innovation in measures to reduce air quality impacts. There are a number of measures that could be incorporated into the construction of this project to provide additional reductions of the overall level of emissions.

- The District encourages the applicant and fleet operators using the facility to take advantage of the District's Heavy-Duty Engine program to reduce project emissions. The Heavy Duty program provides incentives for the replacement of older diesel engines with new, cleaner, fuel-efficient diesel engines. The program also provides incentives for the re-power of older, heavy-duty trucks with cleaner diesel engines or alternative fuel engines. New alternative fuel heavy-duty trucks also qualify. For more information regarding this program contact the District at (559) 230-5858 or visit our website at http://www.valleyair.org/transportation/heavydutyidx.htm.

- Construction activity mitigation measures include: 2-8
  - Limit area subject to excavation, grading, and other construction activity at any one time
  - Use catalyst equipped diesel construction equipment.
  - Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set)
  - The applicant should require that all diesel engines be shut off when not in use on the premises to reduce emissions from idling.
  - 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, and "Spare the Air Days," declared by the District.
  - Implement activity management (e.g. rescheduling activities to reduce short-term impacts)
  - During the smog season (May through October), lengthen the construction period to minimize the number of vehicles and equipment operating at the same time.

- Construction equipment may be powered by diesel engines fueled by alternative diesel fuel blends or Ultra Low Sulfur Diesel (ULSD). The California Air Resources Board (CARB) has verified specific alternative diesel fuel blends for NOx and PM emission reduction. Only fuels that have been certified by CARB should be used. Information on biodiesel can be found on CARB's website at http://www.arb.ca.gov/fuels/diesel/altdiesel/altdiesel.htm and the EPA's website at http://www.epa.gov/oms/models/biodsl.htm. The applicant should also use CARB certified alternative fueled engines in construction equipment where practicable. Alternative fueled equipment may be

2-4 Comment noted. The Project will comply with all applicable requirements as determined appropriate by the SJVAPCD.

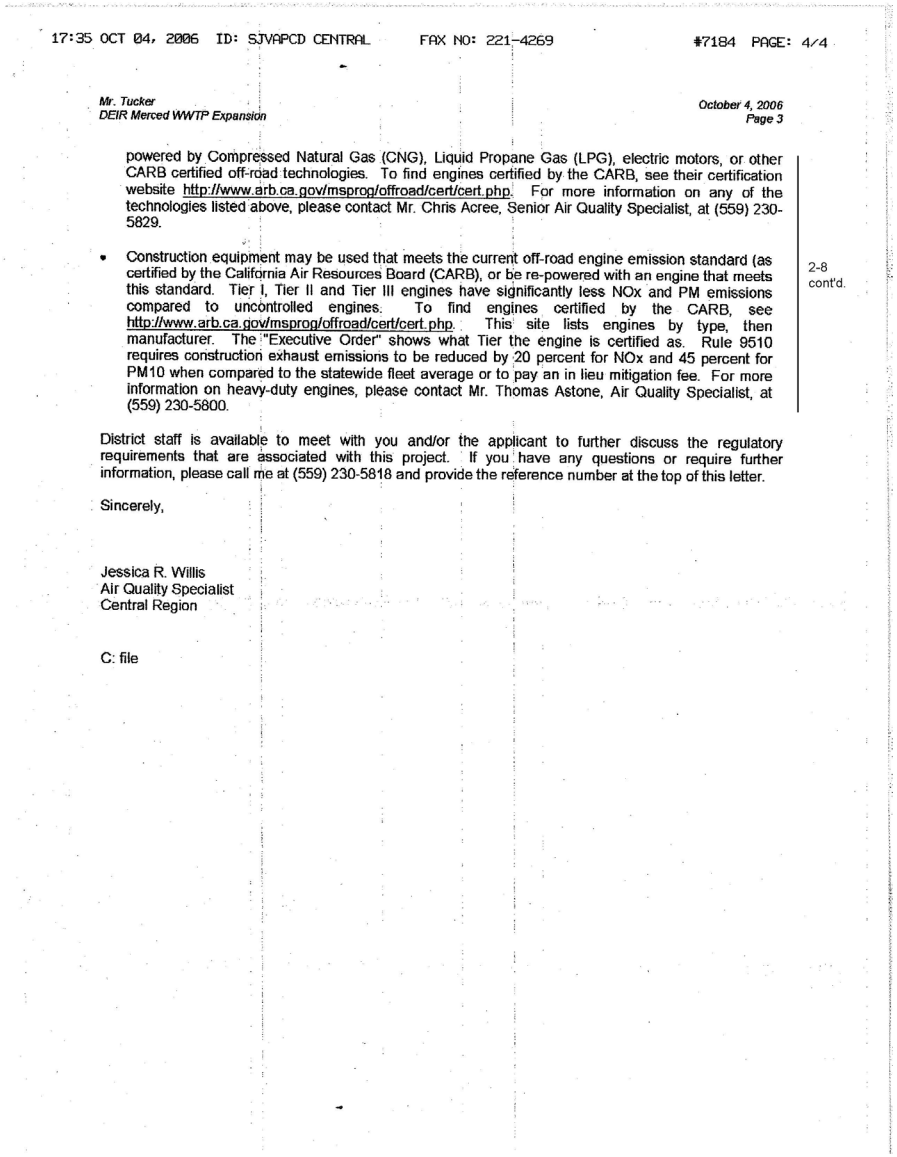
2-5 Comment noted. Measures to adhere to SJVAPCD rules will be deleted as mitigation measures in the Final EIR. These measures will not be included in the Mitigation Monitoring Plan. In future documents, compliance with SJVAPCD regulations will not be regarded as mitigation but shall be considered separately in the impact analysis.

2-6 District methodology and guidelines included in the SJVAPCD *Guide for Assessing and Mitigating Air Quality Impacts*[1] were reviewed prior to commencing the air quality analysis and HRA. District guidelines do not require the use of the CARB Hot Spots Analysis and Reporting Program (HARP) model for HRA analyses. As discussed in Appendix F of the Merced WWTP Expansion DEIR, the Industrial Source Complex-3 (ISC3) model was used for the dispersion modeling analysis.

Dispersion modeling[1] uses hourly averaged meteorological data, terrain elevation data, and emissions and source release data to compute downwind pollutant concentrations over averaging periods ranging from one hour to one year. The results allow a direct comparison of predicted concentrations of pollutants to air quality standards and other criteria such as health risks based on modeled concentrations. The ISC3 model was executed using the regulatory default options (stack-tip downwash, buoyancy induced dispersion, final plume rise), default wind speed profile categories, default potential temperature gradients, no deposition/depletion of particulate matter, and no pollutant decay.

[1] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2002. Guide for Assessing and Mitigating Air Quality Impacts, adopted August 20, 1998, revised January 10, 2002.

[2] Dispersion is the process by which atmospheric pollutants disseminate due to wind and vertical stability.



17:35 OCT 04, 2006 ID: SJVAPCD CENTRAL FAX NO: 221-4269 #7184 PAGE: 4/4

Mr. Tucker
DEIR Merced WWTP Expansion

October 4, 2006
Page 3

powered by Compressed Natural Gas (CNG), Liquid Propane Gas (LPG), electric motors, or other CARB certified off-road technologies. To find engines certified by the CARB, see their certification website http://www.arb.ca.gov/msprog/offroad/cert/cert.php. For more information on any of the technologies listed above, please contact Mr. Chris Acree, Senior Air Quality Specialist, at (559) 230-5829.

- Construction equipment may be used that meets the current off-road engine emission standard (as certified by the California Air Resources Board (CARB), or be re-powered with an engine that meets this standard. Tier I, Tier II and Tier III engines have significantly less NOx and PM emissions compared to uncontrolled engines. To find engines certified by the CARB, see http://www.arb.ca.gov/msprog/offroad/cert/cert.php. This site lists engines by type, then manufacturer. The "Executive Order" shows what Tier the engine is certified as. Rule 9510 requires construction exhaust emissions to be reduced by 20 percent for NOx and 45 percent for PM10 when compared to the statewide fleet average or to pay an in lieu mitigation fee. For more information on heavy-duty engines, please contact Mr. Thomas Astone, Air Quality Specialist, at (559) 230-5800.

2-8 cont'd.

District staff is available to meet with you and/or the applicant to further discuss the regulatory requirements that are associated with this project. If you have any questions or require further information, please call me at (559) 230-5818 and provide the reference number at the top of this letter.

Sincerely,

Jessica R. Willis
Air Quality Specialist
Central Region

C: file

Dispersion modeling analyses tend to be conservative in their prediction of ambient concentrations. Dispersion modeling was performed to model TAC emissions from haul trucks, an emergency generator, the WWTP, the replacement of the candle flare with an enclosed flare, and two digestor gas boilers in association with the expansion project. The haul trucks were separated into two emission sources; an idling area and the roadway. The emergency generator was modeled as a point source. The WWTP was modeled as an area with a height of three meters and located in the area of the clarifiers, headworks, and other processing units. The two flares and the digestor gas boilers were treated as point sources.

In ESA's initial modeling, which was included in the DEIR, TAC emission concentrations from the above sources were used in conjunction with OEHHA Unit Risk Factors (URFs) to determine the health risk for the nearest sensitive receptors in the Merced WWTP vicinity, which is a farm residence, located approximately 2,800 feet to the north of the facility along Gove Road. Using the URF, as established by OEHHA, the maximum carcinogenic risk of the proposed project over a 70 year lifetime of exposure from nearby sources was estimated to be less than 7 cancers in a million (at the maximum exposed individual), assuming no reductions in emissions in the future from regulations related to DPM emissions. This calculated health risk was then compared to the SJVAPCD significance threshold for health risk exposure to TACs of 10 cancers per million for 70-year exposure, as described in the District's *Guide for Assessing and Mitigating Air Quality Impacts*. The impact was less than significant. However, in response to the District's comment regarding the HARP model, the health risk analysis has been rerun using the Cancer Potency Factors (instead of URFs) and a 95% breathing rate (i.e., 95% of the population is covered by this breathing rate), which are more consistent with the HARP model assumptions.

Based on the revised modeling, the maximum carcinogenic risk of the proposed project over a 70 year lifetime exposure from nearby sources was estimated to be less than 1 in a million (at the maximum exposed individual). The impact remains less than significant.

The HARP model is an air quality model that incorporates ISC3 dispersion information and TAC toxicity factors to determine the health risk associated with TAC emissions. One of the major benefits of using the HARP model is that it can analyze multi-pathway (i.e., inhalation, dermal, oral) toxicity for specific TACs, whereas the ISC3 dispersion analysis takes into account only the inhalation pathway. Of the TACs analyzed, metals (primarily hexavalent-chromium) and the polyaromatic hydrocarbons (PAHs) would potentially have multi-pathway toxicity. However, as review of the revised HRA tables indicates, these are minor factors in the total cancer risk for the Merced WWTP expansion project. Finally, it should be noted that when the Merced WWTP facility applies to the SJVAPCD for permits, the District can require HARP as part of the permitting process.

Both the original analysis and the revised analysis (based upon comments from SJVAPCD) found the incremental cancer risk would be less than 10 in a million and less than significant, based on SJVAPCD standards

2-7 ESA has now provided the District with the electronic input files of the updated Health Risk Assessment to facilitate their review of this revised Health Risk Assessment.

2-8 The City will consider these measures as mitigation to reduce air pollutant emissions from project construction.

ESA

8950 Cal Center Drive
Building 3, Suite 300
Sacramento, CA 95826
916.564.4500 phone
916.564.4501 fax

www.esassoc.com

memorandum

date November 17, 2006

to Dave Tucker, City Engineer

from Richard Hunn/ESA

subject Responses to Issues Raised by the Merced Planning Commission Regarding the Wastewater Treatment Plant Expansion Project EIR

On October 4, 2006 the City of Merced Planning Commission held a public meeting to receive comments on the Draft Environmental Impact Report (DEIR) addressing the Wastewater Treatment Plant Expansion Project. Several issues were raised by the Commissioners which warrant a response. The following discussion presents each of the issues raised and the associated response.

1. Long-term wastewater treatment service is being addressed, when will water supply be addressed?

Response: Because the City's water supply is local groundwater, new supplies can be developed with installation of new wells and associated distribution pipelines. The development of each new well is subject to the California Environmental Quality Act (CEQA) compliance at the time additional water supplies are needed. As new development occurs, each project would need to consider whether adequate water supplies are available.

The WWTP requires CEQA compliance at this time because of the proposed new facilities that will be added and increased capacity that is being made available.

2. How will lands outside the SUDP area be served with wastewater treatment services?

Response: The EIR assumes the wastewater treatment service area would correspond to the City's SUDP area and the UC Merced campus. If the City chooses to serve lands outside this area, impacts of this service would need to be addressed in a separate document complying with requirements of CEQA. Serving lands outside the SUDP would need to comply with City Resolution No. 78-3 which ordinarily limits serving areas outside the SUDP to cases of necessity, such as septic failure, or upon agreement to annex. The capacity assigned to serve lands outside the SUDP area and UC Merced campus would need to be subtracted from the capacity available to serve lands within the SUDP.

3. Have alternative locations been considered during facility planning?

Response: The use of satellite wastewater treatment plants, in lieu of expanding the existing site, has been considered during previous studies by the City. An analysis was completed as part of the North Merced Sewer Master Plan (December 2002) and results were recently confirmed as part of the ongoing design studies for the City WWTP Expansion Project that area currently underway.

Satellite wastewater treatment plants are not a preferred alternative for four major reasons:

1) Satellite facilities are more expensive to build and operate than larger, regional facilities, because of certain fixed costs that are required at a WWTP regardless of size, such as administration and operations controls. It was concluded that more efficient and effective wastewater treatment could be accomplished at the City's existing WWTP site;

2) Land requirements for effluent storage/ disposal/ reclamation facilities is significant, on the order of 300 to 400 acres for every 3,000 homes served;

3) Other WWTP locations within the community may pose a conflict with the City's groundwater supply; and,

4) The Regional Water Quality Control Board (RWQCB) would require waste discharge requirements for each of the satellite WWTPs, adding to the cost of designing, constructing and operating multiple WWTPs. The RWQCB encourages the development of regional WWTPs that can be effectively funded and managed, rather than series of smaller, underfinanced treatment systems which may pose greater problems as they age.

4. How will wastewater loads beyond 20 mgd be addressed?

Response: The existing site has been planned for 20 mgd which would likely serve the City for the next 30 years or more. After reaching 20 mgd, the City could utilize City-owned property located south of the WWTP site or consider new facilities in outlying areas. Given the substantial changes that may occur over the next 30 years, it would be speculative to estimate the land requirements, design criteria, or treatment technologies that would be needed to operate a WWTP in compliance with applicable regulations.

5. Why isn't recycled wastewater (wastewater reuse) or grey-water being considered as alternative?

Response: Recycling wastewater is not an alternative to the WWTP Expansion Project. Treatment of the wastewater would still be needed before it could be made available for other uses. Both recycling and grey-water system need to be carefully planned before implementation. Considerations including new pipeline alignments, land use restrictions for applied wastewater, installation of facilities near the potable water supply.

Successful use of grey-water systems has occurred where these system are installed with new development. Installation of grey-water disposal systems are often complicated and costly when done in established communities. Graywater systems have been used in areas experiencing a water supply shortage. Separating out graywater from sewage requires plumbing changes to be completed at time of construction, so it is difficult to plan for at this time.

CHAPTER 3
Changes, Clarifications, or Modifications to the Draft EIR

The following changes to the Draft EIR are made in response to comments received which requested changes, clarifications, or other modifications to the document; or, were made as a result of the City's continuing review and consideration of the information being addressed in this document.

Draft EIR Page ES-11, Impact 4.2.7 is revised as follows, in order to reflect Draft EIR text:

> Potentially Significant impact is corrected to read Less than Significant.

Draft EIR Page ES-26, Impact 4.20.5 is revised as follows, in order to reflect Draft EIR text:

> Impact significance corrected from Less Than Significant to Potentially Significant; Level of Significance after Mitigation corrected from NI to LTS.

Draft EIR Page 4-2, Mitigation Measure 4.1.1 is revised to read:

> The City shall develop and implement a monitoring program to determine if increased effluent discharges are inducing excessive stream channel erosion on Hartley Slough downstream of the effluent discharge to the location of the existing agricultural water diversion facility. If observed, bank stabilization practices and other best management practices (BMPs) to control erosion shall be implemented.
>
> The following criteria will be used to define excessive erosion in Hartley Slough:
>
> - Bank undercutting (e.g., over-hanging root wads)
> - Bank collapse (the ultimate effect of undercutting and/or bed scouring) e.g., banks held by structure of tree but otherwise eroded and unstable.
> - Vegetation – perennial cover to waterline; sparse perennial cover to waterline; no perennial cover near waterline.
> - Tree root exposure affecting stability (where trees occur in riparian zone)
> - In-channel scouring

BMPs would be implemented if monitoring indicates a high rate for any of the five criteria has occurred as result of increased discharges from the WWTP. BMPs will also be implemented if a medium rate of the above criteria is observed which indicates may subsequently degrade to a high-erosion condition as result of the increased WWTP discharges.

Measures could include planting stabilizing vegetation, using integrated measures, and as a last resort, installing riprap. If no substantial stream channel erosion is observed, the program may be terminated.

Draft EIR Page 4-18, text is revised to state:

As shown in Table 4-5, Project construction would result in an exceedance of the SJVAPCD threshold for NO_x emissions. Because construction-related NO_x emissions would be less than 50 tons per year, federal conformity thresholds would not be exceeded.

Draft EIR Page 4-19, Mitigation Measure 4.3.2 is added, stating:

The City shall consider the additional measures recommended by the SJVAPCD to minimize air pollutant emissions during construction, including:

- Making use of the District's Heavy-Duty Engine Program for replacing older diesel engines with newer, cleaner, fuel-efficient diesel engines
- Construction activity mitigation including:
  - Limiting area of excavation or grading, at any one time
  - Use catalyst equipped diesel construction equipment
  - Replace fossil-fueled equipment with electricity-driven equipment
  - Shut off diesel engines when not in use
  - Curtail construction emissions during period of high pollutant concentrations
  - Implement activity management
  - Lengthen construction period to minimize emission occurring at one time
- Use Ultra Low Sulfur Diesel fuel as certified by the California Air Resource Board

Page ES-12 of the Executive Summary was also updated to reflect this change.

Draft EIR Page 4-45, Mitigation Measure 4.13.2c is added, stating:

The City shall implement a fresh emergent marsh monitoring program to determine if increased WWTP discharge is degrading giant garter snake habitat quality. If degradation is found, the City shall consult with the U.S. Fish and Wildlife Service (USFWS) to identify and implement suitable habitat compensation consistent with USFWS mitigation policy for this species.

CHAPTER 4
List of Preparers

4.1 Lead Agency

John Raggio, Director of Public Works - Operations
David Tucker, City Engineer
Humberto Molina, Wastewater Treatment Supervisor
Michael Wegley, Principal Engineer
Bill King, Planner
Jeanne Schechter, City Counsel

4.2 Consultants

Environmental Science Associates

Steve Brown, Project Director
Richard Hunn, Project Manager
Robert Eckard, Mitigation Planning and Report Preparation
Mary Pakenham-Walsh, Biological Resources
Sara Lee, Biological Resources
Mahala Young, Biological Resources
Matt Morales, Air Quality
Paul Miller. Air Quality
Dean Matorana, Cultural Resources
John Patrus, Word Processing and Report Production
Thomas Wyatt, Graphics
Brad Allen, GIS

Erler & Kalinowski

Stephen Tarnantino, Project Manager

Eco:Logic Engineers

Steve Beck, Engineering Manager
Dan Rich, Engineering Project Manager
Doug Brewer, Document Review
Tiffany Knapp, Engineer
Greg Harris, Engineer

Appendix A
Mitigation Monitoring Plan

ESA

APPENDIX A
Mitigation Monitoring Plan

The purpose of this mitigation monitoring plan is to provide information on mitigation scheduling and the parties responsible for mitigation oversight. Included is a brief discussion on the legal background and purpose of the mitigation monitoring plan, a discussion of noncompliance complaints, and a mitigation compliance matrix.

Purpose of the Mitigation Monitoring Plan

Whenever a public agency certifies an environmental impact report or mitigated negative declaration, Public Resource Code (PRC) 21081.6 requires that the agency adopt a mitigation monitoring or reporting program. By complying with the monitoring or reporting program, the agency will fully implement mitigation measures adopted through the California Environmental Quality Act (CEQA) process. To meet this requirement, the City of Merced has adopted its own Mitigation Monitoring and Reporting Program (Merced Municipal Code (MMC) 19.28), which was prepared in accordance with advisory publications from the Governor's Office of Planning and Research advisory document, *Tracking CEQA Mitigation Measures*.

As required by MMC 19.28.050, the following findings are made:

1. The requirements of the adopted mitigation monitoring program for the City of Merced Wastewater Treatment Plant Expansion Project shall run with the real property that is the subject of the project and that successive owners, heirs, and assigns of this real property are bound to comply with all of the requirements of the adopted program.

2. Prior to any lease, sale, transfer, or conveyance of any portion of the real property that is the subject of the project, the applicant shall provide a copy of the adopted program to the prospective lessee, buyer, transferee, or one to whom the conveyance is made.

Mitigation Monitoring Procedures

In general, mitigation measures can be monitored by the City Public Utilities Department. The City of Merced WWTP Expansion Project Mitigation Monitoring Checklist will be attached to approved project plans and specifications, and will be filled out upon project approval with mitigation measures required. As project plans and specifications are checked, compliance with each mitigation measure can be reviewed.

Several mitigation monitoring procedures require on-going monitoring during and after construction. In these cases, the Mitigation Monitoring Checklist will be used until monitoring is no longer necessary. City Public Utilities Department staff may be required to conduct necessary periodic inspections to ensure compliance with mitigation procedures. Outside agencies and/or consultants may also be required to conduct necessary periodic inspections.

Noncompliance Complaints

Any person or agency may file a complaint asserting noncompliance with the mitigation measures outlined within the mitigation monitoring checklist (below). The written complaint shall be addressed to the Director of the Public Utilities Department and provide specific information on the asserted violation. The Director shall initiate an investigation to determine validity of the complaint, and cause appropriate actions to remedy any violation. The complainant shall receive written confirmation indicating the results of the investigation or the final action corresponding to the particular noncompliance issue. Merced Municipal Code (MMC) Sections 19.28.080 and 19.28.090 outline the criminal penalties and civil and administrative remedies which may be incurred in the event of noncompliance. MMC 19.28.100 defines the appeals procedures.

Monitoring Matrix

The table below includes all mitigation measures listed within the City of Merced Wastewater Treatment Plant Expansion Project DEIR, the timing of their implementation, the agency/department in charge of their oversight, and on open column for validation. Columns within the matrix are defined as follows:

Mitigation Measure:	Summarizes the Mitigation Measure (referenced by number) identified in the City of Merced Wastewater Treatment Expansion Project Draft Environmental Impact Report.
Timing:	Identifies at what point in time or phase of the project that the mitigation measure will be completed.
Agency/Department Consultation:	Public agency or City department with which coordination is required in order to satisfy the identified mitigation.
Verification:	These columns will be initialed and dated by the individual designated to verify adherence to the project specific mitigation.

City of Merced Wastewater Treatment Plant Expansion Project

Mitigation Monitoring Checklist

Project Name: _____ **File Number:** _____

Approval Date: _____ **Project Location:** _____

Brief Project Description: _____

_____

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
4.1 Water Quantity			
Mitigation Measure 4.1.1: The City shall develop and implement a monitoring program to determine if increased effluent discharges are inducing excessive stream channel erosion on Hartley Slough downstream of the effluent discharge to the location of the existing agricultural water diversion facility. If observed, bank stabilization practices and other best management practices (BMPs) to control erosion shall be implemented. The following criteria will be used to define excessive erosion in Hartley Slough: • Bank undercutting (e.g., over-hanging root wads) • Bank collapse (the ultimate effect of undercutting and/or bed scouring) e.g., banks held by structure of tree but otherwise eroded and unstable. • Vegetation – perennial cover to waterline; sparse perennial cover to waterline; no perennial cover near waterline. • Tree root exposure affecting stability (where trees occur in riparian zone) • In-channel scouring BMPs would be implemented if monitoring indicates a high rate for any of the five criteria has occurred as result of increased discharges from the WWTP. BMPs will also be implemented if a medium rate of the above criteria is observed which indicates may subsequently degrade to a high-erosion condition as result of the increased WWTP discharges. Measures could include planting stabilizing vegetation, using integrated measures, and as a last resort, installing riprap. If no substantial stream channel erosion is observed, the program may be terminated.	On-going During Operations	City Public Works Department	

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
4.2 Water Quality			
Mitigation Measure 4.2.1a: An Integrated Water Pollution Control Program (IWPCP) shall be developed and implemented to manage and control potential erosion and water quality degradation that would occur during Project construction. Additionally, the program shall describe monitoring during construction activities, dewatering operations, in-water construction activities, and specific best management practices (BMPs) to avoid and minimize impacts to water quality. The plan shall be approved by the City prior to commencement of construction and shall be made conditions of performance with the City's contractor selected to build the Project. The IWPCP shall incorporate control measures in the following categories: • Soil stabilization practices • Sediment and runoff control practices • Monitoring protocols • Non-storm water management and waste management and disposal control practices • Construction dewatering • Hazardous materials management Once approved by the City, the contractor shall be responsible throughout the duration of Project construction for installing, constructing, inspecting, and maintaining the control measures included in the IWPCP.	Prior to Construction and On-going During Construction Activities	City Public Works Department	
Mitigation Measure 4.2.1b: The City will monitor groundwater that is collected during groundwater dewatering and, if it exceeds applicable surface water quality standards, will convey it into a water treatment system, where it will undergo treatment prior to its discharge to Hartley Slough. The water treatment system may use either temporary mobile treatment equipment or the WWTP. Either system would need to have applicable capability (i.e., activated carbon filtration or other suitable treatment technology) to treat and/or remove water quality constituents that exceed applicable surface water criteria	On-going During Construction Activities	City Public Works Department	
Measure 4.2.2: The City shall assess and install a suitable effluent cooling system to comply with temperature receiving water objectives as identified in the Basin Plan (CVRWQCB, 1998). The selected system for effluent cooling, including use of the equalization basins, or installing mechanical chillers or cooling towers, would be sized to provide sufficient cooling to maintain effluent temperature within 5°F of the average annual ambient water temperature. The cooling system shall be constructed within the boundaries of the expanded WWTP site and not generate additional adverse effects to biological resources, wetlands, or sensitive habitats; would not pose a visual nuisance; or would not create obtrusive noise or other emissions. Cooling technologies will initially be sized for the 16 mgd capacity, with a provision to add additional units to accommodate the ultimate 20 mgd capacity.	Prior to Construction, During Construction, and During Operation	City Public Works Department	

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
4.3 Air Quality			
Mitigation Measure 4.3.1a: The City shall consider including other air pollutant reduction measures as referenced in the SJVAPCD letter dated October 4, 2006, that exceed mandatory compliance levels, which can be implemented by construction contractors during facility construction. The City will consider the implementation of such measures as one of several criteria in the selection of the project construction contractor.	Prior to Construction	City Public Works Department	
Mitigation Measure 4.3.2 The City shall consider the additional measures recommended by the SJVAPCD to minimize air pollutant emissions during construction, including: • Making use of the District's Heavy-Duty Engine Program for replacing older diesel engines with newer, cleaner, fuel-efficient diesel engines • Construction activity mitigation including: o Limiting area of excavation or grading, at any one time o Use catalyst equipped diesel construction equipment o Replace fossil-fueled equipment with electricity-driven equipment o Shut off diesel engines when not in use o Curtail construction emissions during period of high pollutant concentrations o Implement activity management • Lengthen construction period to minimize emission occurring at one time • Use Ultra Low Sulfur Diesel fuel as certified by the California Air Resource Board	Prior to Construction	City Public Works Department	
4.6 Vegetation			
Mitigation Measure 4.6.1a: The City shall avoid spreading invasive plants that could impact biological resources in the Project area. The City will ensure that all fill material brought onto the Project area from offsite shall be from weed-free sources. The upland filled areas and upland areas disturbed by grading and excavation activities will be re-vegetated with appropriate native species to discourage the colonization of invasive plants in the Project study area. All seed for re-vegetation shall consist of 100 percent native plant species. The seed mix shall be premixed and packaged by a commercial seed supplier, labeled in accordance with the California Agricultural Code; shall be delivered to the site in original, unopened containers; and shall bear a dated guaranteed analysis. **Mitigation Measure 4.6.1b:** The City shall avoid unnecessary disturbance to native vegetation. In order to avoid and minimize potential impacts from trampling to established vegetation communities, construction activities will be limited to designated staging areas, construction footprints, and construction easements. These areas shall be reseeded with native plants (as prescribed in Mitigation Measure 4.6.1a).	On-going During Construction Activities and On-going During Operations	City Public Works Department	

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
4.8 Aesthetic Resources			
Mitigation Measure 4.8.3: The City shall install security lighting with directional shields to concentrate lighting toward the Project site. The nighttime security and associated parking lighting fixtures will be equipped with directional shields that aim light downward and away from adjacent properties and public roadways. In addition, lighting fixtures will be placed to concentrate light onsite to avoid spillover onto adjacent properties and public roadways	Building Permits	City Public Works Department	
4.9 Noise			
Mitigation Measure 4.9.1: The applicant shall implement the following measures: • Construction activities shall be limited to between 7:00 a.m. and 10:00 p.m. Monday through Saturday to avoid noise-sensitive hours of the day. Construction activities shall be prohibited on Sundays and holidays. • Construction equipment noise shall be minimized during Project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools. • Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby residences.	Building Permits	City Public Works Department	
4.11 Open Space			
Mitigation Measure 4.11.1: (Same as Mitigation 4.14.1) The 20 acres of farmland within the WWTP expansion area, not required for the WWTP facility, shall remain in an agricultural land use. The City shall pay into a "farmland trust" fund for Merced County that will acquire agricultural conservation easements to compensate for the conversion of 18 acres of farmland within the WWTP expansion area. The farmland subject to the easements shall be of the same acreage, and at least the same category of farmland, as identified by the latest FMMP report, as that farmland affected at the WWTP.	Prior to Construction and On-going During Operations		
4.12 Cultural Resources			
Mitigation Measure 4.12.1: In the event of accidental discovery of cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, etc.), work will be suspended and City staff will be contacted. A qualified cultural resource specialist will be retained and will perform any necessary investigations to determine the significance of the find. The City will then implement any mitigation deemed necessary for the recordation and/or protection of the cultural resources. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the Project proponent will determine whether avoidance is feasible in light of the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed on other parts of the Project site while the mitigation for historical resources or unique archaeological resources is carried out.	On-going During Construction Activities	City Public Works Department	

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
In addition, pursuant to Sections 5097.97 and 5097.98 of the California Public Resources Code and Section 7050.5 of the California Health and Safety Code, in the event of the discovery of human remains, all work will be halted and the County Coroner will be immediately notified. If the remains are determined to be Native American, their treatment and disposition will adhere to the Native American Heritage Commission guidelines.			
Mitigation Measure 4.12.2: The City shall notify a qualified paleontologist of unanticipated discoveries, in order to document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in Section 15064.5 of the CEQA Guidelines. In the event a fossil is discovered during construction, activities that could potentially affect the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The paleontologist will notify City to determine procedures to be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist will prepare an excavation plan for mitigating the effect of the Project on the qualities that make the resource important, and the plan will be implemented. The plan will be submitted to the City for review and approval.	On-going During Construction Activities	City Public Works Department	
4.13 Threatened and Endangered Species			
Mitigation Measure 4.13.1a: The one elderberry shrub that cannot be avoided by the project shall be transplanted following USFWS (1999) guidelines. Transplanting this shrub meets the definition of "take" of a federally-listed species and will require coordination with and approval from the USFWS. Transplanting shall only occur when the shrub is dormant (approximately November through the first two weeks in February) and shall follow the procedures described in USFWS (1999) as updated. The area that the shrub is transplanted to shall also be planted with at least 10 additional elderberry cutting or seedlings, and at least 5 associated native species, and shall be protected in perpetuity per USFWS (1999).	Prior to Construction and On-going During Construction and Operations	City Public Works Department	
Mitigation Measure 4.13.1c: The following mitigation measures shall be implemented to reduce Project impacts on giant garter snake: • All construction activity within giant garter snake habitat shall be conducted between May 1 and October 1. This is the active period for giant garter snakes and the potential for direct impacts are reduced because snakes are actively moving and avoiding danger. More danger is posed to snakes during their inactive period, because they are occupying underground burrows or crevices and are more susceptible to direct effects, especially during excavation. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take. • Any dewatered habitat must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.	Prior to Construction and On-going for One Year After Restoration	City Public Works Department	

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
• Construction personnel shall participate in a worker environmental awareness program. Under this program, workers shall be informed about the presence of giant garter snakes and habitat associated with the species and that unlawful take of the animal or destruction of its habitat is a violation of the Federal Endangered Species Act (FESA). This instruction shall be conducted by a qualified biologist prior to construction activities. Proof of this instruction shall be submitted to the City. • The City shall implement a fresh emergent marsh monitoring program to determine if increased WWTP discharge is degrading giant garter snake habitat quality. If degradation is found, the City shall consult with the U.S. Fish and Wildlife Service (USFWS) to identify and implement suitable habitat compensation consistent with USFWS mitigation policy for this species. • Within 24 hours before construction activities begin in areas of giant garter snake habitat, the site shall be inspected by a qualified biologist. The biologist will provide the City with a field report form documenting the monitoring efforts within 24 hours of commencement of construction activities. The monitoring biologist shall be available thereafter; if a snake is encountered during construction activities, the monitoring biologist shall have the authority to stop construction activities until appropriate corrective measures have been completed or it is determined that the snake will not be harmed. Giant garter snakes encountered during construction activities will be allowed to move away from construction activities on their own. Capture and relocation of trapped or injured individuals shall only be attempted by personnel or individuals with current Service recovery permits pursuant to section 10(a)1(A) of FESA. The biologist shall be required to report any incidental take to the City immediately by telephone and by written letter within one working day. The Project area shall be reinspected whenever a lapse in construction activity of two weeks or greater has occurred. • Clearing of wetland vegetation will be confined to the minimal area necessary to excavate toe of bank for riprap or fill placement. Excavation of channel for removal of accumulated sediments will be accomplished by using equipment located on and operated from top of bank, with the least interference practical for emergent vegetation. • Movement of heavy equipment to and from the project site shall be restricted to established roadways to minimize habitat disturbance. Preserved giant garter snake habitat shall be designated as Environmentally Sensitive Areas and shall be flagged by a qualified biologist and avoided by all construction personnel. • After completion of construction activities, any temporary fill and construction debris shall be removed and, wherever feasible, disturbed areas shall be restored to pre-project conditions. • Affected giant garter snake habitat shall be replaced or restored in kind at a 3:1 ratio (see Table 4-9). This table assumes that temporary impacts will only last one season. • All replacement habitats must include both upland and aquatic habitat components. Upland and aquatic habitat components must be included in the replacement habitat at a ratio of 2:1 upland acres to aquatic acres (see Table 4-9).	On-going for duration of Project Operations	City Public Works Department	

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
• Restored habitat shall receive one year of monitoring with a photo documentation report due to the City one year from implementation of the restoration with pre- and post-project area photos. • Monitoring replacement habitat with photo documentation report shall be conducted for five years and submitted to the City annually.			
Mitigation Measure 4.13.1d: In order to avoid impacts to nesting Swainson's hawk, pre-construction surveys shall be conducted by a qualified biologist during the bird and raptor breeding season (March 1 to August 15), before the start of any construction activities. Similar to Mitigation Measure 4.13.2d, the Project applicant shall contract with a qualified biologist to conduct surveys in habitat suitable for nesting raptors. However, for Swainson's hawk, the survey area includes a one-half mile zone from any construction activities. Surveys may be combined with general raptor surveys as detailed in mitigation measure 4.13.2d and shall follow the same survey schedule. If nesting Swainson's hawk is detected within the survey area, the Project applicant shall install a one-half-mile buffer around the nests of Swainson's hawk. No construction activities shall be allowed within these buffers during active nesting. Buffers shall be marked in the field with stakes and flagging at all potential access points to the buffer. Buffers shall remain in place until the nest is no longer active, as determined by a qualified biologist. If a buffer distance needs to be reduced, a qualified biologist will determine if the reduction is appropriate, and what the reduced buffer distance will be. A reduction in buffer distance must be approved by the City of Merced, who may consult with CDFG. If the buffer is reduced, a qualified biologist shall be retained to monitor the nest daily during construction activity occurring within one-half-mile of the nest. The biologist shall inform the City's construction manager immediately if construction activities within the half mile buffer threaten to cause the nest to fail.	Prior to Construction	City Public Works Department	
Mitigation Measure 4.13.2a: Implement measures to avoid construction-related impacts to tricolored blackbirds. In order to avoid impacts to nesting tricolored blackbirds, pre-construction surveys shall be conducted in potential breeding habitat within 500 feet of construction by a qualified biologist during the breeding season (March 1 to July 15), before the start of any construction activities. The Project applicant shall contract with a qualified biologist to conduct surveys in habitat suitable for tricolored colonies. Any construction within the Project study area shall avoid active tricolored blackbird colonies by a 500 foot buffer. If warranted by site conditions (as evaluated and documented by a qualified biologist), this buffer may be reduced with the approval of the City, which may consult with CDFG.	Prior to Construction	City Public Works Department	
Mitigation Measure 4.13.2b: Implement measures to avoid construction-related impacts to Sacramento splittail and western pond turtle. To avoid mortality of Sacramento splittail or western pond turtle during construction, a qualified biologist shall be onsite during any dewatering activities. This biologist shall remove any stranded Sacramento splittail or western pond turtles and shall release them to Hartley Slough.	On-going During Construction Activity	City Public Works Department	

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
Mitigation Measure 4.13.2c: Implement measures to avoid construction-related impacts to burrowing owl. The following mitigation will be implemented to avoid potential impacts from Project construction activities: • A pre-construction survey of suitable habitat and buffers will be conducted within 30 days prior to construction to ensure no additional burrowing owls have established territories since the initial surveys. If ground disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site shall be resurveyed. • No disturbance shall occur within 75 meters (~250 feet) of an occupied burrow during the breeding season (February 1 – August 31) or within 50 meters (~160 feet) during the non-breeding season. • Foraging habitat contiguous with occupied burrow sites shall be permanently preserved at a ratio of 6.5 acres per pair of breeding or single unpaired resident burrowing owl; this is equivalent to a 100-meter (~300-foot) foraging radius around the burrow. The protected habitat shall be adjacent to occupied burrowing owl habitat and its configuration shall be approved by a qualified biologist. • When destruction of occupied burrows is unavoidable, existing unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows shall be created by installing artificial burrows at a ratio of 2:1 on the protected lands site. If owls must be moved away from the disturbance area, passive relocation with one-way doors shall be used, but only during the non-breeding season. Owls shall be excluded from burrows in the immediate impact zone and within a 50-meter (~160-foot) buffer zone by installing one-way doors in burrow entrances. One-way doors shall be left in place 48 hours to ensure that owls have left the burrow before excavation. Two natural or artificial burrows shall be provided for each burrow in the Project study area that will be rendered biologically unsuitable. The Project study area shall be monitored daily for one week to confirm owl use of the new burrows before excavating burrows in the immediate impact zone. Burrows shall be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe shall be inserted into the tunnels during excavation to maintain an escape route for any animals within the burrow.	Prior to Construction	City Public Works Department	
Mitigation Measure 4.13.2d: Implement measures to avoid construction-related impacts to nesting raptors. In order to avoid impacts to nesting raptors, pre-construction surveys shall be conducted 30-days prior to the start of construction by a qualified biologist during the raptor breeding season (March 1 to August 15). The City shall have a qualified biologist conduct three surveys in habitat suitable for nesting raptors and other birds within 500 feet of any construction activities. These surveys shall be conducted by a qualified biologist with demonstrated bird and raptor nest-searching experience.	Prior to Construction	City Public Works Department	

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
If nesting raptors are detected within the survey area, the Project applicant shall maintain a 500-foot buffer around the nest. No construction activities shall be allowed in these buffers. Buffers shall be marked in the field with stakes and flagging at all potential access points to the buffer. Buffers shall remain in place until the nest is no longer active, as determined by a qualified biologist. If warranted by site conditions (as evaluated and documented by a qualified biologist), this buffer may be reduced with the approval of the City, which may consult with CDFG. The biologist shall submit the locations of nests detected during the surveys to the CNDDB.			
4.14 Environmentally Sensitive Areas			
Mitigation Measure 4.14.1: The 22 acres of farmland within the WWTP expansion area, not required for the WWTP facility, shall remain in an agricultural land use. The City shall pay into a recognized trust fund that will acquire agricultural conservation easements to compensate for the conversion of 20 acres of farmland within the WWTP expansion area. The farmland subject to the easements shall be of the same acreage, and at least the same category of farmland, as identified by the latest FMMP report, as that farmland affected at the WWTP.	Prior to Construction and On-going During Operations	City Public Works Department	
Mitigation Measure 4.14.2a: Permanent impacts to jurisdictional waters of the U.S. will be mitigated at a minimum 1:1 ratio consistent with the regulatory guidance of the Corps and/or other agencies with regulatory authority. Compensatory mitigation may include the purchase of mitigation credits at a Corps-approved wetland mitigation bank, or through other options consistent with the Section 404 regulatory program including "in-lieu-fee" mitigation in which the applicant provides funds to an in-lieu-fee sponsor such as the National Fish and Wildlife Foundation (NFWF), or onsite mitigation.	On-going During Construction Activities	City Public Works Department	
Mitigation Measure 4.14.2b: Construction activities shall avoid and minimize adverse impacts to jurisdictional waters of the U.S. the maximum practicable extent. Areas used for staging and temporary stockpiling during project construction shall be prohibited from being within such waters including wetlands, and shall be clearly defined on final construction plans. Storage of equipment and/or debris shall not occur within 25 feet of jurisdictional waters. Work within jurisdictional waters including trenching and bridge construction shall occur during low-flow or dry periods. Standard and appropriate BMPs including use of silt fences and/or straw bales shall be utilized to prevent incidental discharge of material into jurisdictional waters.	On-going During Construction Activities	City Public Works Department	
4.15 Solid Waste and Energy			
Mitigation Measure 4.15.3: The City will consult with MID to determine the appropriate energy facility upgrades needed to supply the expanded WWTP and in turn will obtain a will-serve letter from MID for energy supplies.	Prior to Construction	City Public Works Department	

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
4.16 Transportation and Circulation			
Mitigation Measure 4.16.1a: Prior to the start of Project construction, a Traffic Control Plan shall be prepared addressing vehicle movement along Project-affected roadways and intersections. This plan shall designate haul routes for the Project in consultation with Caltrans and Merced County Department of Transportation. The plan should include the following measures: • Maintaining the maximum amount of travel lane capacity during non-construction periods. If larger construction equipment or articulated trucks will have difficulty maneuvering at haul route-affected intersections, provide a flagman for traffic control at the access road on an as-needed basis.	Building Permits	City Public Works Department	
Mitigation Measure 4.16.1b: The City shall arrange for a 24-hour telephone hotline to address public questions and complaints during Project construction.	Building Permits	City Public Works Department	
Mitigation Measure 4.16.1c: Heavy trucks and other construction transport vehicles shall avoid the busiest commute hours (7 to 8 a.m. and 5 to 6 p.m. on weekdays) on highly congested roadways in the Merced community.	On-going During Construction Activities	City Public Works Department	
Mitigation Measure 4.16.6: Prior to construction, the City's shall assess current road conditions for the Project construction haul routes including the local access roads and identify post-construction road restoration requirements. An agreement shall be entered into by Merced County prior to construction that details suitable post-construction road restoration improvements. The City shall fund roadway repairs or rehabilitation as necessary such that post-construction requirements are met.	Building Permits	City Public Works Department	
4.18 Public Health and Safety			
Mitigation Measure 4.18.1a: If contaminated soil and/or groundwater or suspected contamination were encountered during Project construction, work shall be halted in the area, and the type and extent of the contamination shall be identified. A contingency plan to dispose of any contaminated soil or groundwater should be developed through consultation with the appropriate regulatory agencies. If dewatering were to occur during Project construction, the RWQCB should be consulted for any special requirements such as containing the water until it can be sampled and analyzed to ensure that no contaminants are in the groundwater that could be released into the Merced Irrigation District drainage system. Hazardous materials associated with construction equipment, such as fuels, oils, antifreeze, coolants, and other substances could adversely affect water quality if released to surface waters. If precautions are not taken to contain contaminants, construction could produce contaminated stormwater runoff (nonpoint source pollution), a major contributor to the degradation of water quality. In addition, hazardous materials associated with construction equipment could adversely affect surface and groundwater quality if spilled or stored improperly. Without mitigation, construction of the Project could result in potentially significant impacts.	On-going During Construction Activites	City Public Works Department	

Mitigation Measure	Timing	Agency or Department Consultation	City Verification (Date & Initials)
Mitigation Measure 4.18.2: The City shall ensure, through the enforcement of contractual obligations, that all contractors transport, store and handle construction-related hazardous materials in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by the Department of Transportation, California RWQCB, the local fire departments, and the local environmental health department. Recommendations shall include as appropriate transporting and storing materials in appropriate and approved containers, maintaining required clearances, and handling materials using applicable federal, state and/or local regulatory agency protocols. In addition, all precautions required by the RWQCB issued NPDES construction activity stormwater permits would be taken to ensure that no hazardous materials enter any nearby waterways. In the event of a spill, the City shall ensure, through the enforcement of contractual obligations, that all contractors immediately control the source of any leak and immediately contain any spill utilizing appropriate spill containment and countermeasures. If required by the local fire departments, the local environmental health department, or any other regulatory agency, contaminated media shall be collected and disposed of at an offsite facility approved to accept such media.	On-going During Construction Activities	City Public Works Department	
Mitigation Measure 4.18.5a: The City shall designate and ensure, through the enforcement of contractual obligations, that during construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. The City shall keep these areas clear of combustible materials in order to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws.	On-going During Construction Activities	City Public Works Department	
Mitigation Measure 4.18.5b: Construction crews shall be required to carry sufficient fire suppression equipment to ensure that any fire resulting from construction activities is immediately extinguished. All off-road equipment using internal combustion engines shall be equipped with spark arrestors.	On-going During Construction Activities	City Public Works Department	
4.20 Land Use and Zoning			
Mitigation Measure 4.20.5: The City shall consult with all affected landowners where the proposed expansion area would encroach onto productive farmland. As part of the easement acquisition process, the City and affected landowners shall negotiate an agreed-upon compensation for the loss of any existing pasture and/or row crops currently in production. During these consultations, the City shall also, in conjunction with landowners' input, identify areas within the expansion area that could be left in agricultural production. Compensation for the loss of crops and associated revenues will be up to the provisions of law.	Prior to Construction	City Public Works Department	