

CITY OF FRESNO RECYCLED WATER MASTER PLAN

Final Environmental Impact Report

Prepared for
City of Fresno

June 2011



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CHAPTER 1

Introduction

1.1 Introduction

The City of Fresno (Fresno or City) circulated the City of Fresno Recycled Water Master Plan (proposed project or Master Plan) Draft Environmental Impact Report (EIR) for public and agency review and comment between March 25, 2011 and May 9, 2011. At the end of the 45-day public comment period, a total of 8 written letters were received addressing the content and analysis in the Draft EIR.

This document is the Final EIR for the proposed project and it contains written responses to all comments received by City of Fresno on the Draft EIR. The responses to comments clarify and amplify text in the Draft EIR and do not change the findings or conclusions of the Draft EIR. In addition, this Final EIR includes a list of commenters, comment letters received, and the Mitigation Monitoring and Reporting Program (MMRP) which identifies the adopted mitigation measures, timing of action and responsibilities for implementation and monitoring.

This Final EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) and together with the Draft EIR (and appendices) constitutes the EIR for the proposed Recycled Water Master Plan.

1.2 Summary of Project and Project Objectives

1.2.1 Summary of Project

The City proposes a Recycled Water Master Plan that identifies potential recycled water use opportunities within the City and its Sphere of Influence (SOI), including Fresno County lands located in or adjacent to the SOI (proposed project area). The Master Plan includes a plan for the installation and operation of treatment, storage and distribution infrastructure to serve the proposed project area with recycled water. In addition to the proposed Master Plan, the City intends to consider the adoption of a “Recycled Water Ordinance” to assist the City in implementing the Recycled Water Program set forth in the proposed Master Plan. The purpose of the ordinance would be to establish water recycling policy and criteria for its use within the current City limits as well as its SOI as lands within the sphere are annexed into the City. More specifically, the Ordinance would contain provisions addressing various topics related to implementation of the goals, policies and objectives of the Master Plan. In addition, the Ordinance would delegate authority to the Waste

Water Management Division of the City of Fresno Public Utilities Department to prepare, adopt, and administer rules and regulations related to the implementation of various provisions of the ordinance, consistent with the intent of those provisions, to the extent the topic is not already adequately addressed in the Ordinance.

Development of new and upgraded recycled water reclamation facilities, distribution pipelines, pump stations, recharge basins and storage facilities proposed under the Master Plan would be phased based on funding, technical and other factors. Construction of the first phase could begin in 2011 and construction would continue through approximately 2025.

Chapter 3 of the Draft EIR includes a detailed description of the proposed project.

1.2.2 Project Objectives

The proposed Master Plan would plan and implement a recycled water treatment and distribution system that would:

- Protect and improve groundwater quality by reducing the use of percolation ponds currently used as part of the Regional Wastewater Reclamation Facility's (RWRF) effluent disposal processes;
- Increase the use of recycled water through urban reuse, groundwater recharge and agricultural reuse to help meet the water demands in the region;
- Expand the recycled water system to enable the City's offset of potable water use, thereby enhancing the sustainability of the water supply; and
- Facilitate the goals related to recycled water use set forth in the City's Urban Water Management Plan.

1.3 Organization of FEIR

This FEIR is organized as follows:

Chapter 1 – Introduction: This chapter summarizes the proposed project, describes the content and format of the Final EIR, summarizes the public participation and review process, and describes the CEQA certification and project approval process.

Chapter 2 – Summary of Text Changes to the Draft EIR: Chapter 2 summarizes revisions to the Draft EIR. These revisions are in response to comments made on the Draft EIR and/or staff-initiated text changes. The revisions contain clarification, amplification, and corrections that have been identified since publication of the Draft EIR.

Chapter 3 – Responses to Comments: Chapter 3 includes a list of the comment letters received followed by the comment letters and responses to the comments contained in each letter. The responses to comments are numbered consistent with the comment number in each letter. For example, the response to the first comment in Comment Letter 1 is Response to Comment 1-1.

Appendix A - Mitigation Monitoring and Reporting Program: This chapter contains the MMRP for the timing, responsibility and monitoring of adopted mitigation measures.

Appendix B – Letter 7 Attachment: Federal Aviation Administration Advisory Circular 150/5200-33b

1.4 Public Participation and Environmental Review Process

The following lists the actions that took place during the preparation, distribution and review of the DEIR.

- A Notice of Preparation (NOP) for preparation of the Draft EIR was filed with the State Clearinghouse (SCH # 210051015) on May 10, 2010. The 30-day comment period for the NOP ended June 9, 2010.
- The availability of the NOP and information on the scoping meeting was noticed in the Fresno Bee.
- The NOP was distributed to all responsible and trustee agencies, and interested groups, organizations and individuals and was made available for review at the following locations:
 - City Planning and Development Department website - <http://www.fresno.gov/Government/DepartmentDirectory/PlanningandDevelopment/Planning/MajorProjectsunderReview.htm>
 - City of Fresno City Hall, 2600 Fresno Street, 3rd Floor, Room 3065, Public Utilities Department Administration, Fresno CA 93721
 - County of Fresno Central Library, 2420 Mariposa Street, Fresno CA 93721
- A public scoping meeting was held on May 24, 2010 at the City of Fresno City Hall.
- The Draft EIR was filed with the State Clearinghouse on March 25, 2011. The 45-day comment period ended May 9, 2011.
- The availability of the DEIR and information on the public meetings was noticed in the Fresno Bee.
- The DEIR was distributed to all responsible and trustee agencies, and interested groups, organizations and individuals and was made available for review at the following locations:
 - City Planning and Development Department website - <http://www.fresno.gov/Government/DepartmentDirectory/PlanningandDevelopment/Planning/MajorProjectsunderReview.htm>
 - City of Fresno City Hall, 2600 Fresno Street, 3rd Floor, Room 3065, Public Utilities Department Administration, Fresno CA 93721
 - County of Fresno Central Library, 2420 Mariposa Street, Fresno CA 93721
- A public meeting was held on April 18, 2011 at the City of Fresno City Hall to receive comments on the content and analysis of the Draft EIR. No members of the public or agency representatives attended the public meeting. No oral comments were received.

1.5 CEQA Certification and Project Approval

Prior to considering the project for approval, the City of Fresno City Council will review and consider the information presented in the Program EIR (Draft and Final EIR) and will certify that the Program EIR has been adequately prepared in accordance with CEQA. Once the Program EIR is certified, the City may proceed to consider project approval (*CEQA Guidelines* §15090 and 15096(f)). Prior to approving the project, the City shall make Findings regarding any significant, unavoidable environmental effects identified in the Final Program EIR, and if necessary, adopt Statements of Overriding Considerations regarding these impacts (*CEQA Guidelines* §15091 and 15093).

Following certification of the Program EIR and project approval the City will file a Notice of Determination (NOD) with the County of Fresno Clerk and the State Clearinghouse. The Responsible Agencies will then adopt the certified Program EIR and file separate NODs prior to implementing their segments of the proposed project. Each Responsible Agency also shall make Findings and adopt Statements of Overriding Considerations for any significant, unavoidable environmental effects identified in the Final Program EIR (*CEQA Guidelines* §15096(h)).

CHAPTER 2

Summary of Text Changes to the Draft Program EIR

2.1 Introduction

This Chapter presents corrections and revisions made to the Draft Program EIR initiated by responses to comments or by staff. New text is shown in a double underline and text to be deleted is shown in ~~strike-out~~. The responses to comments clarify and amplify text in the Draft Program EIR and do not change the findings or conclusions of the Draft Program EIR.

2.2 Text Changes to the Draft Program EIR

Executive Summary

The findings of significance before mitigation in Table ES-3 for Impacts 4.12.2, 4.12.3, 4.12.4 and 4.12.6 are corrected from LS to S. The findings of significance are correctly shown in Section 4.12.

1. Introduction

The third paragraph on page 1-3 is revised to read as follows:

...The 45-day public review period for the proposed project will be from March 25, 2011 through ~~April~~ May 9, 2011 ending at 5 PM....

2. Background

The first paragraph on page 2-3 is revised to read as follows:

...The plant is master planned for expansion to ~~1.08~~ 1.25 mgd (average monthly flow) at buildout. ...During wet weather months, recycled water in excess of turf demands will be dechlorinated and sent to a nearby percolation basin owned and managed by the Fresno Metropolitan Flood Control District (FMFCD), and used to irrigate landscaped areas within the basin. Projected recycled water production for the NFWRF ranges from about 750 AFY to about 1,250 AFY at buildout. To support development of this facility, the applicant for the Copper River Ranch development would be entering into an agreement

with FMFCD, that would define effluent discharge capacities to be allowed into FMFCD facilities.

3. Project Description

The second paragraph on page 3-7 is revised to read as follows:

...The plant is master planned for expansion to ~~4.08~~ 1.25 mgd (average monthly flow) at buildout.

Table 3-1, Alternative 1, Northeast Quadrant on page 3-14 is revised to read as follows:

(NE1) Some users would be served from the NFWRF (~~4.08~~ 1.25 mgd maximum capacity)...

The first paragraph on page 3-24 is revised to read as follows:

The NFWRF uses a sequencing batch reactor (SBR) technology and has a current capacity of 0.71 mgd. It was designed to be expanded to 1.25 mgd using the current SBR technology, ~~although recent estimates of the potential for expansion limit the capacity to 4.08 mgd.~~ In NE Alternative 1 (NE1), the NFWRF is expanded to its full capacity of ~~4.08~~ 1.25 mgd using the existing SBR treatment technology. Additionally, the distribution pipeline described in NW1 is extended east of Highway 41 to supply large users from the RWRf that cannot be supplied from the NFWRF (see **Figure 3-15**). Since potential peak recycled water demand in the NE Quadrant is much higher than either ~~4.08~~ 0.71 or 1.25 mgd, it would be desirable to increase the recycled water production from the NFWRF. However, there is insufficient sewer flow at the current time and projected into the future to make an investment in switching technologies worthwhile.

The second paragraph on page 3-36 is revised to read as follows:

The NFWRF in north Fresno, currently a recycled water reclamation facility operating at a tertiary level of treatment, is master planned for expansion to ~~4.08~~ 1.25 mgd (average monthly flow) at buildout under both urban reuse Alternatives 1 and 2....

4.4 Hydrology and Water Quality

The second paragraph on page 4.4-1 is revised to read as follows:

A network of small, channelized streams and canals extend throughout the City of Fresno. As shown on **Figure 4.4-1**, these include Big Dry Creek, Dog Creek, Dry Creek Canal, Lower Dry Creek Canal, Houghton Canal, Mill Canal, Herndon Canal, ~~Gould~~ Gould Canal, and Fancher Creek Canal. These waterways provide drainage and water conveyance within the City and, through a network of natural and engineered drainages, Some of these canals and creeks; eventually flow into the San Joaquin River and the Sacramento-San Joaquin Delta. However, several canals and creeks within the Project

area, including Fancher Creek Canal, Lower Dry Creek, and Houghton Canal, drain into the Tulare Lake basin. The Kings River is located approximately 25 miles south of the city on the southern border of Fresno County.

The first paragraph on page 4.4-2 is revised to read as follows:

... The reservoir has a capacity of approximately 1 million acre-feet. The river, via FID infrastructure, provides water to Fresno and its vicinity for agricultural use, groundwater recharge, and municipal water supply at two surface water treatment plants and other beneficial uses. The Kings River is connected with the San Joaquin River via the Fresno Slough and James Bypass.

The fourth paragraph on page 4.4-2 is revised to read as follows:

... As shown in Figure 4.4-1, FEMA-defined 100-year flood zones are located along a northeast to southwest corridor that crosses the City, as well as along select areas of Mill Canal Creek, and in the downtown area of the City.

Figure 4.4-1 on page 4.4-3 is revised as follows and is included at the end of this chapter: “Dry Creek” was relabeled as “Big Dry Creek;” “Mill Creek” was relabeled as “Mill Canal;” “Gourd Canal” was relabeled as “Gould Canal;” “Fancher Creek Canal” was relabeled as “Fancher Creek Canal.”

The third paragraph on page 4.4-5 is revised to read as follows:

...The City’s Leaky Acres facility, located northwest of the Fresno Yosemite International Airport, provides an additional 210 acres of groundwater recharge facilities, and FID and the City of Clovis maintain several recharge facilities within their service/urban areas. The Fresno Metropolitan Flood Control District maintains approximately 150 groundwater recharge basins. ...

The first paragraph on page 4.4-10 is revised to read as follows:

California State Nondegradation Antidegradation Policy

In 1968, as required under the federal antidegradation policy described above, the SWRCB adopted an antidegradation ~~nondegradation~~ policy aimed at maintaining high quality for waters in California. The antidegradation ~~nondegradation~~ policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state...

The second through third paragraphs under *Basin Plans and Water Quality Objectives* on pages 4.4-11 and 4.4-12 is revised to read as follows:

Basin plans provide the technical basis for determining waste discharge requirements and taking regulatory enforcement actions if deemed necessary. The project area is located within the jurisdiction of the CVRWQCB Tulare Lake Basin Basin Plan (CVRWQCB, 2004). Some potential project alternatives that involve discharging to the San Joaquin River would be within the jurisdiction of the Basin Plan for the Sacramento and San Joaquin River Basins (CVRWQCB, 2009). A basin plan has been adopted for the Sacramento and San Joaquin River Basin (“Basin Plan,” CVRWQCB, 2009), which covers all of the project area. Together, the two Basin Plans cover all of the potential project areas. The Basin Plans sets water quality objectives for the surface waters in its region for the following substances and parameters: ammonia, bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, radioactivity, salinity, sediment, settleable material, suspended material, taste and odor, temperature, toxicity, turbidity, and pesticides. For groundwater, water quality objectives applicable to all groundwater have been set for bacteria, chemical constituents, radioactivity, salinity, taste, odors, and toxicity (CVRWQCB, 2009; CVRWQCB 2004).

Specific objectives for concentrations of chemical constituents are also applied to bodies of water based on their designated beneficial uses. The Sacramento and San Joaquin River Basin Plan indicates the following beneficial uses for the San Joaquin River ~~(as discussed elsewhere in this section, surface drainages and other stormwater conveyance facilities in the project area discharge into facilities that end in groundwater infiltration basins, or the San Joaquin River)~~ in the vicinity of the project area, as shown in **Table 4.4-2**.

The first paragraph on page 4.4-15 is revised to read as follows:

In compliance with the Federal Clean Water Act and implementing storm water permit regulations, the FMFCD, County of Fresno, City of Fresno, City of Clovis, CSU Fresno, and Caltrans developed a stormwater quality management program to be implemented in the Fresno-Clovis metropolitan area. The program proposal was submitted to the CVRWQCB as a part of the NPDES municipal stormwater permit process. The CVRWQCB incorporated into the permit specific program requirements, including best management practices to prevent and reduce stormwater pollutants. The NPDES permit was issued to the participating agencies in September 1994, and is currently being renewed through the CVRWQCB.

~~A Storm Water Quality Management Program (SWQMP) prepared by the FMFCD was adopted for use in Fresno, Clovis and urban areas of Fresno County in 2005 (If this is a FMFCD program, suggest moving it under the FCFMD section above). It~~ The Fresno-Clovis Storm Water Quality Management Program is intended to reduce the discharge of potential water quality pollutants from the local storm drain system. ...

The first full paragraph on page 4.4-16 is revised to read as follows:

...Implementation of the Storm Drainage Master Plan is funded under a rate structure identified within the Storm Drainage Master Plan. Payment of such fees is required for construction of new facilities, and maintenance of existing facilities and storm drainage

~~basins, excepting underground conduits, pipelines, or similar developments which do not materially alter the natural surface of a parcel of land. Each property within the planning area thereby contributes a pro-rata share of the cost of implementing upgrades to the existing public stormwater drainage system, in order to ensure that, as new properties are developed, additional stormwater drainage and flood control facilities are also developed as warranted to support conveyance of stormwater drainage without resulting in increases in flooding downstream.~~

The third paragraph under Impact 4.4.2 on page 4.4-21 is revised to read as follows:

There could be increased agricultural reuse of undisinfected secondary effluent from the RWRf under two of the five Agricultural Reuse options for the proposed project. If improperly managed, the increased agricultural application of undisinfected secondary treatment water could result in water quality degradation. The existing RWRf's waste discharge requirements (WDRs) NPDES permit allow for discharge to agricultural fields for restricted irrigation uses. Permit conditions WDR requirements specify measures to ensure the protection of water quality at the agricultural reuse areas. ~~These Conditions~~ may include, but would not be limited to, restriction of discharge to agronomic application rates for water (total volume), and nutrients; ~~and maximum pollutant load restrictions for pathogens, salts, heavy metals, and various other pollutants.~~ Increases in agricultural use, or changes in the place of use for undisinfected secondary effluent from the RWRf ~~would~~ requires acquisition of new Water Reclamation Requirements (WRRs) by private landowners a revised NPDES permit, containing an updated effluent discharge rate and/or place of use.

The first sentence of the second paragraph on page 4.4-22 is revised to read as follows:

The SWRCB's ~~NPDES~~ General Permit for Landscape Irrigation Uses of Municipal Recycled Water would also be applicable to the project, insofar as project water would be used for landscape irrigation purposes.

4.5 Biological Resources

Mitigation Measure 4.5.3 on page 4.5-29 is revised to read as follows:

Measure 4.5.3: Elderberry shrubs shall be avoided where possible. The project proponent shall ensure that elderberry shrubs within 100 feet of the proposed project activities shall conform to the following the *USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS, 1999) to avoid impacts to and take of VELB as defined under the Endangered Species Act..

1. Prior to initiating project related activities, elderberry shrubs within the project boundaries including those areas outside of the project boundaries and within 100-feet of proposed project activities shall be surveyed by a qualified botanist/biologist. The results of the survey shall be submitted to USFWS for review, approval and to be used as the basis for determining appropriate avoidance and mitigation measures.

2. For all shrubs that can be avoided by construction activities, a 100-foot buffer surrounding the plant shall be maintained at all times. The buffer shall be fenced with temporary fencing and flagging. Signs shall be placed along the fencing every 50 feet that state the following: “This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.” The above sign shall be readable from a distance of 20 feet and maintained through the duration of construction. Work crews shall be briefed on the status of the beetle, the need to protect its host plant (elderberries), requirements to avoid damaging elderberry shrubs, and possible penalties for not complying with identified avoidance and minimization measures. In addition, construction workers should be made aware of the habitat needs of VELB and the location of protection areas on the site (USFWS, 1999).
3. Where complete avoidance of shrubs within 100 feet is not feasible, USFWS shall be consulted prior to any disturbance taking place. Protective measures include:
 - Establishing a 20-foot buffer shall be fenced with temporary fencing and flagging and maintained throughout construction. Signs shall be placed along the fencing as described above, and work crews shall be briefed as described above.
 - The project proponent shall restore any damage occurring within 100 feet of elderberry shrubs that are not removed by the project during construction. Erosion control shall be provided and the area shall be revegetated with appropriate native plants.
 - No insecticides, herbicides, fertilizers, or other chemical shall be used within 100 feet of any elderberry shrub with one or more stems measuring 1 inch or greater in diameter at ground level.
 - A written description of planned restoration, protection, and maintenance of buffer areas post-construction shall be provided.
4. For any affected shrubs (shrubs within 100 feet of disturbance), the project proponent shall provide compensatory mitigation by either: 1) purchasing credits for all required compensation from the USFWS-approved Conservation Bank, 2) transplanting the shrubs at a location approved by USFWS and purchasing credits for any remaining mitigation requirements using mitigation ratios described in *USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS, 1999), or 3) transplanting the shrubs onto the Conservation Bank property and planting additional seedlings for any remaining mitigation requirements using mitigation ratios described in *USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS, 1999). Each credit purchased from the Conservation Bank will provide compensatory mitigation for five elderberry stems and five associated native plant species. If the shrubs are relocated to the Conservation Bank property, all Conservation Guidelines described by USFWS (1999) for elderberry

transplants shall be implemented, and the project proponent's contractor shall coordinate with the Conservation Bank to replant the shrubs.

. Mitigation Measure 4.5.5 on page 4.5-32 is revised to read as follows:

Measure 4.5.5: To ensure that impacts to the California tiger salamander and its habitat are avoided or reduced, the following measures shall be implemented:

- Prior to project approval, a Site Assessment shall be conducted by ~~Not less than two weeks prior to the onset of ground-disturbing activities,~~ a qualified biologist ~~shall survey all~~ to determine if suitable habitat for California tiger salamander (CTS) ~~exists~~ exists within the project site that may be directly affected by project activities and whether further studies will be required. The survey shall be conducted and findings report prepared according to the methods outlined in the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (USFWS, 2003) and submitted to USFWS for review and approval.
- ~~Prior to construction,~~ In the event that further protocol-level surveys are required and that the surveys result in a negative finding per USFWS and CDFG guidance, a solid barrier such as silt fencing shall be installed to exclude CTS from entering the project site and per the guidance and ~~as~~ approved by the on-site biologist.
- Daily visual clearance surveys shall also be conducted during initial ground-disturbing activities. If a CTS is identified where habitat disturbance is proposed, work shall be halted and an USFWS-approved biologist shall be contacted to determine appropriate actions, unless already stipulated by the USFWS and California Department of Fish and Game (CDFG). If the USFWS and CDFG approve moving salamanders, the qualified biologist shall be allowed sufficient time to move the species from the work site before work activities resume. Only USFWS-approved biologists, and as allowed for under the conditions of a State Incidental Take Permit (ITP), shall participate in the capturing, handling, and translocation of CTS. Any CTS relocated by the project shall be moved to nearby appropriate habitat, as determined by the qualified biologist and approved by USFWS and CDFG. Results of the preconstruction surveys shall be reported to USFWS.
- As approved by the USFWS and the CDFG, the applicant shall mitigate for the permanent loss of CTS habitat at a 0.2:1 ratio. Mitigation may be achieved by purchasing appropriate mitigation credits at a USFWS and CDFG-approved bank or preserve or through the purchase of fee title or conservation easement lands as approved by USFWS and CDFG.

4.9. Hazards and Hazardous Materials

Mitigation Measure 4.9.4 on page 4.9-13 is revised to read as follows:

Measure 4.9.4: Proposed recycled water facilities shall ~~not~~ be sited at least one quarter mile from existing or proposed schools.

Impact 4.9.5 and the impact discussion on page 4.9.13 and Mitigation Measures 4.9.4 on page 4.9-14 are revised to read as follows:

Impact 4.9.5: Proposed project facilities could be located within ~~two~~ five miles of an airport resulting in a safety hazard. (Less Than Significant With Mitigation)

Construction of the facilities associated with the proposed project would potentially result in locating some facilities within ~~two~~ five miles of an existing public airport, or within the vicinity of a private airport. The Fresno-Yosemite International Airport, Chandler Downtown Executive Airport, and the Sierra Sky Park Airport are the major airports located in the plan area. The project area also includes private airstrips used for agricultural or recreational purposes. These are scattered across rural portions of the project area.

Specific locations for most facilities associated with the proposed project remain unknown at the time of publication of this document. However, the potential SRWFs, groundwater recharge basins, and pump stations could be located ~~near~~ within five miles of these airports. Groundwater recharge basins could attract waterfowl that could increase the potential for birdstrikes posing a safety threat to airplanes during landing and takeoff. This would result in *significant* impact.

Mitigation Measures

Implementation of the following mitigation measures would reduce this impact to a *less-than-significant* level by complying with Federal Aviation Administration guidance for siting surface water features, including locating groundwater basins, at a distance to minimize the potential for bird strikes.

Measure 4.9.5: Groundwater recharge basins and other surface water features shall be sited consistent with the guidance contained in the Federal Aviation Administration Advisory Circular 150/5200-33b Hazardous Wildlife Attractants on or Near Airports, including filing Form 7460-1 with the Federal Aviation Administration, as applicable.

Impact Significance After Mitigation: Less Than Significant.

8. References

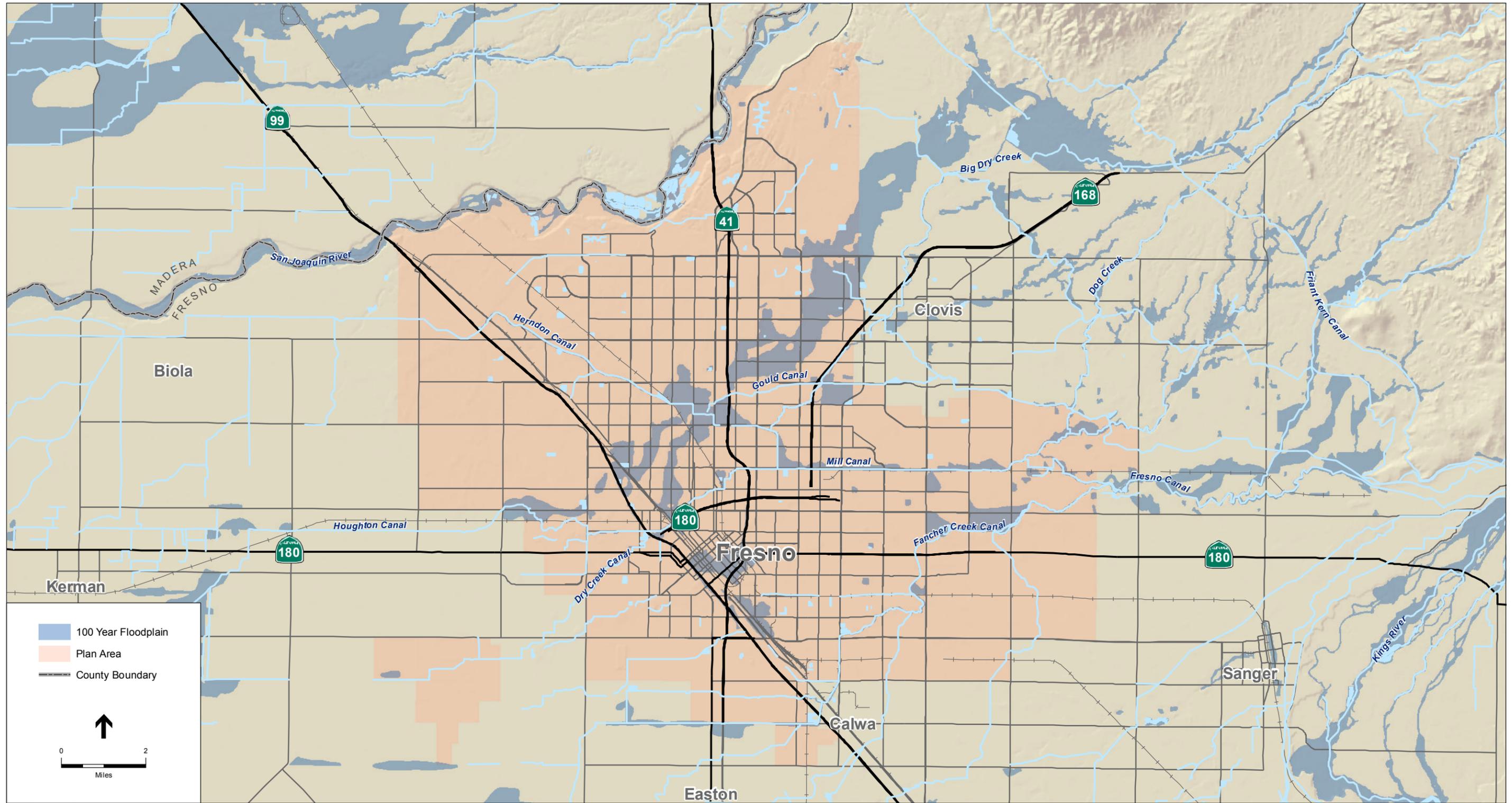
Page 8-2 has been updated as follows:

4.4 Hydrology and Water Quality

California Department of Water Resources (DWR), 2006. California's Groundwater Bulletin 118: Tulare Lake Hydrologic Region, San Joaquin Valley Groundwater Basin, Kings Subbasin. Last updated on January 20, 2006.

CVRWQCB, 2004. Water Quality Control Plan (Basin Plan) for the Tulare Lake Basin, Second Edition. Revised January, 2004 with Approved Amendments.

CVRWQCB, 2009. Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley Region. Sacramento and San Joaquin River Basins, Fourth Edition. Revised September, 2009 with Approved Amendments.



SOURCE: FEMA, 2005; ESRI, 2009; and ESA, 2011

City of Fresno Recycled Water Master Plan, 209405
Figure 4.4-1
 FEMA Floodplains in the Vicinity of the Project Area

CHAPTER 3

Responses to Comments

At the end of the public circulation period, a total of 8 letters were received, and they are listed below in Table 3-1. Each letter has been assigned a number. Individual comments within each letter have been bracketed based on the issue presented and assigned a number. For example, the first comment in Letter 1 is comment number 1-1. Following each comment letter are the responses to the individual bracketed comments. Where it is appropriate to fully respond to a comment, references are provided to other responses in this Final Program EIR. Text changes in response to comments are included in the individual responses in this chapter, and they are summarized in Chapter, 2 Summary of Text Changes to the Draft Program EIR.

**TABLE 3-1
COMMENT LETTERS SUBMITTED ON THE DRAFT PROGRAM EIR**

Comment ID	Name of Commenter	Title	Organization/ Affiliation	Page Number
Letter 1	Scot Morgan	Director, State Clearinghouse	Governor's Office of Planning and Research	3-2
Letter 2	Jeffrey Single, Ph.D.	Regional Manager	California Department of Fish and Game	3-15
Letter 3	Michelle Lobo	Environmental Scientist	State Water Resources Control Board	3-29
Letter 4	W. Dale Harvey	Senior Engineer	Central Valley Regional Water Quality Control Board	3-44
Letter 5	Mark Montelongo		San Joaquin Valley Air Pollution Control District	3-53
Letter 6	William R. Stretch, P.E.	Chief Engineer	Fresno Irrigation District	3-57
Letter 7	Daniel Yrigollen	Airports Projects Supervisor	Fresno Yosemite International Airport	3-66
Letter 8	Rick Lyons	Engineering Technician III	Fresno Metropolitan Flood Control District	3-71



JERRY BROWN
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



May 10, 2011

Kevin Norgaard
City of Fresno
Department of Public Utilities
5607 West Jensen Avenue
Fresno, CA 93706

Subject: City of Fresno Recycled Water Master Plan and Ordinance Program EIR
SCH#: 2010051015

Dear Kevin Norgaard:

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 May 9, 2011, 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.

1 - 1

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

**Document Details Report
State Clearinghouse Data Base**

SCH# 2010051015
Project Title City of Fresno Recycled Water Master Plan and Ordinance Program EIR
Lead Agency Fresno, City of

Type EIR Draft EIR
Description The City of Fresno proposes a Recycled Water Master Plan (proposed project or Master Plan) that identifies potential recycled water use opportunities within the City and its Sphere of Influence (SOI), including Fresno County lands located in or adjacent to the SOI. The Master Plan includes a plan for the installation and operation of treatment, storage and distribution infrastructure to serve the proposed project area with recycled water.

Lead Agency Contact

Name Kevin Norgaard
Agency City of Fresno
Phone 559-621-5297 **Fax**
email
Address Department of Public Utilities
 5607 West Jensen Avenue
City Fresno **State** CA **Zip** 93706

Project Location

County Fresno
City Fresno
Region
Lat / Long
Cross Streets various
Parcel No.
Township

Range **Section** **Base**

Proximity to:

Highways Hwy 99, 41, 168 and 180
Airports FYI, Chandler, Sierra Skyport
Railways UPTC, BNSF, Amtrak
Waterways San Joaquin River
Schools CSUF, 8 school districts
Land Use Various urban, suburban and rural land uses as shown on the Fresno 2025 General Plan

Project Issues Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Central Valley Flood Protection Board; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 6; State Water Resources Control Board, Division of Water Quality; Regional Water Quality Control Bd., Region 5 (Fresno); Department of Toxic Substances Control; Native American Heritage Commission; Public Utilities Commission; San Joaquin River Conservancy

Date Received 03/25/2011 **Start of Review** 03/25/2011 **End of Review** 05/09/2011

MAY-06-11 14:09 FROM-DFG

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State of California - The Natural Resource Agency

DEPARTMENT OF FISH AND GAME

Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
<http://www.dfg.ca.gov>

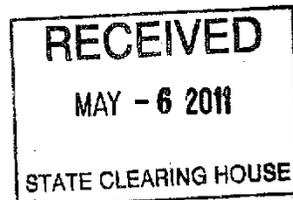
JOHN McCAMMAN, Director



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5/9/2011
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May 2, 2011

Kevin Norgaard
City of Fresno
Department of Public Utilities
5607 West Jensen Avenue
Fresno, California 93706



Subject: Draft Environmental Impact Report (DEIR)
City of Fresno Recycled Water Master Plan
SCH No. 2010051015

Dear Mr. Norgaard:

The Department of Fish and Game (Department) has reviewed the DEIR for the City of Fresno Recycled Water Master Plan (Project) submitted by the City of Fresno Department of Public Utilities (City). The Project would identify potential recycled water use opportunities within the City and its Sphere of Influence (SOI), including Fresno County lands located in or adjacent to the SOI. Project approval would allow the installation and operation of treatment, storage, and distribution infrastructure to serve the Project area with recycled water.

The Department has the following comments regarding the information provided in Section 4.5-Biological Resources, of the DEIR.

Trustee Agency Authority

The Department is a Trustee Agency with the responsibility under the California Environmental Quality Act (CEQA) for commenting on projects that could impact plant and wildlife resources. Pursuant to Fish and Game Code Section 1802, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. As a Trustee Agency for fish and wildlife resources, the Department is responsible for providing, as available, biological expertise to review and comment on environmental documents and impacts arising from project activities, as those terms are used under CEQA.

Kevin Norgaard
May 2, 2011
Page 2

Responsible Agency Authority

California Endangered Species Act (CESA): The Department has regulatory authority over projects that could result in the "take" of any species listed by the State as threatened or endangered, pursuant to Fish and Game Code Section 2081. If the Project could result in the "take" of any species listed as threatened or endangered under CESA, the Department may need to issue an Incidental Take Permit (ITP) for the Project. CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (Sections 21001(c), 21083, Guidelines sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports a Statement of Overriding Consideration (SOC). The CEQA Lead Agency's SOC does not eliminate the project proponent's obligation to comply with Fish and Game Code Section 2080.

Listed species known to occur in the vicinity of the Project area include the State threatened and federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*), the State and federally threatened California tiger salamander (*Ambystoma californiense*), the State endangered Swainson's hawk (*Buteo swainsoni*), the Federally threatened and State endangered San Joaquin Valley orcutt grass (*Orcuttia inaequalis*), and the State and federally endangered California jewel-flower (*Caulanthus californicus*).

Project Recommendations

Impact 4.5.4 states that implementation of the Project could result in potentially significant impacts to San Joaquin kit fox through direct and indirect impacts to den sites. The San Joaquin kit fox is listed as threatened under CESA and is listed as endangered under the Federal Endangered Species Act (ESA). As such, both the United States Fish and Wildlife Service (USFWS) and the Department are responsible for the protection of the species and the habitat upon which it relies, and the Department agrees with the conclusion that impacts to this species should be mitigated to reduce that impact to a less than significant level. The Department agrees with the Mitigation Measures provided in the DEIR with the following exceptions/additions.

- 1) Individuals conducting surveys or destroying unoccupied burrows should be appropriately authorized by the Department (California Fish and Game Code sections 2081 or 2080.1) and the USFWS to do so.
- 2) Occupied natal or pupping dens should not be destroyed until the pups and adults have vacated the dens and then only after consultation with the Department and the USFWS.

Kevin Norgaard
May 2, 2011
Page 3

- 3) Destruction of unoccupied dens (by individuals authorized to do so) should be accomplished through hand excavation unless ground conditions preclude it. After complete excavation, the dens should be backfilled and compacted.

The Department recommends that the above three points be included in the Final Environmental Impact Report (EIR) as required Mitigation Measures.

Impact 4.5.5 states that implementation of the Project could result in potential disturbance to or loss of California tiger salamander (CTS) as suitable breeding and upland habitat exists within the Project area. CTS is listed as a threatened species under both ESA and CESA. As such, both the USFWS and the Department are responsible for the protection of the species and the habitats on which they rely and the Department agrees that Project-related impacts to this species should be mitigated to reduce the impact to a less than significant level. Mitigation Measure 4.5.5 attempts to do this and the Department agrees with the Mitigation Measures provided in the DEIR with the following exceptions/additions.

- 1) Surveys conducted following the protocol (USFWS 2003) require at least two years to complete to be reasonably assured that CTS are absent from any particular area and should be conducted by qualified biologists. Individuals conducting surveys or participating in on-site biological monitoring that may involve the handling, moving, corralling, or capturing of animals are required to have appropriate authorization from both the Department (Fish and Game Code Sections 2081 or 2080.1) and the USFWS.
- 2) Installation of silt fencing around a construction area where protocol-level surveys have not been conducted to support a negative finding from point 1 above, is considered by the Department to be capture, which is a form of "take" as defined by Section 86 of the Fish and Game Code. "Take" cannot occur without authorization from the Department in the form of an ITP pursuant to Section 2081 of the California Fish and Game Code. Since the species is also federally listed, separate authorization may be required from USFWS.
- 3) In the absence of a State ITP issued as described above, there can be no handling, moving, corralling, or capturing of animals as this constitutes "take".
- 4) Compensatory mitigation is calculated based on the population, quality of habitat, connectivity of habitat and gene flow between populations, etc. Compensatory mitigation can be fulfilled through purchase of mitigation credits at a bank approved by the Department to sell credits for CTS breeding

Kevin Norgaard
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Page 4

and upland habitat. As of the date of this letter, there are no Department-approved banks from which to purchase CTS credits that include the Project area in the bank service area. This would most likely result in the need for the City or their agent to purchase fee-title or a conservation easement on lands that support CTS, and either transfer them to the Department or a Department approved non-profit conservation (with the Department as a third party beneficiary). Management of these lands would need to be funded in perpetuity in the form of a non-wasting endowment.

In summary, since the DEIR indicates that Project-related impacts to CTS are likely and significant, the City can 1) either assume presence in areas containing suitable breeding habitat and uplands within 1.24 miles of breeding habitat, obtain an ITP through the Department, and mitigate accordingly or 2) conduct CTS surveys according to the protocol (requires at least two years to complete depending on precipitation and other factors) and if the surveys result in negative findings, the City can proceed with Project-related activities without the need to obtain an ITP. It should be noted that surveys resulting in negative findings are only good for one year after their completion and additional surveys would be necessary the following spring should the individual project not be initiated by that time. If the surveys result in detections of CTS, the City would follow the first option by obtaining an ITP, mitigation lands, and providing funding for management of said mitigation lands.

Table 4.5-2 in the DEIR is a list of special status species potentially occurring in the Project area. According to the table, listed invertebrates have a low potential to exist within the Project area. However, the Department recommends that these invertebrates be fully analyzed for Project-related impacts in the Final EIR because frequently these species are found in the same ponded water and seasonal wetlands used by CTS for breeding. As has already been noted, the DEIR discloses that ponded waters and seasonal wetlands occur within the Project area and discusses the potential of these waterbodies to be significantly impacted through implementation of the Project. The Department also recommends the USFWS be consulted well in advance of Project implementation.

Mitigation Measure 4.5.1 should include measures to address Project-related impacts to burrowing owl burrows and loss of foraging habitat. To offset these impacts, the Department recommends that an appropriate amount of foraging habitat (no less than 6.5 acres per pair or unpaired bird) be acquired and permanently protected. Protected lands should be adjoining those that are impacted and at a location approved by the Department. When burrow destruction is unavoidable, existing unsuitable burrows should be enhanced or new burrows created (install artificial burrows) at a ratio of 2:1 on the protected lands. The City should also provide funding for the long-term

Kevin Norgaard
May 2, 2011
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management and monitoring of the protected lands. These mitigation measures should be included in the Final EIR.

In addition to the measures outlined in Mitigation Measure 4.5.2, the Department recommends adding that no Project-related activities should occur during the general bird nesting season (February 1 through September 15). If this is infeasible, then a qualified biologist should conduct thorough tree, shrub, and ground searches for active bird nests. Since no specific no-disturbance buffer distances were provided in the DEIR for the protection of active bird nests, no Project-related activities should occur until after consultation with the Department and implementation of the on the ground protective buffers occurs. Additionally, active nests of State-listed species may not be able to be removed (or the vegetation in which they are located) even outside of the general nesting season for the listed bird without ITP authorization. These additional recommendations should be included as Mitigation Measures in the Final EIR.

Impact 4.5.3 – Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (VELB). The Department recommends that a qualified botanist/biologist survey the Project area for the VELB host plant (elderberry species) prior to initiating Project-related activities. This additional mitigation measure should be included in the Final EIR.

Impact 4.5.6 – Western pond turtle (*Emys marmorata*). The Department recommends that the Final EIR include an additional Mitigation Measure requiring the City to prepare and submit a turtle relocation plan for Department approval prior to initiating any Project-related activities.

Mitigation Measure 4.5.7 should include a requirement for the City to prepare and submit an American badger (*Taxidea taxus*) relocation plan for Department approval prior to initiating any Project-related activities. It should also include a requirement to avoid all potential San Joaquin pocket mouse (*Perognathus inornatus*) burrows by 50 feet during the breeding season identified as March 1 through July 31 and to the greatest extent possible outside the breeding season (August 1 through February 28). These additional recommendations should be included as Mitigation Measures in the Final EIR.

Mitigation Measure 4.5.9 should indicate that special status plant surveys will be conducted multiple times during the appropriate blooming period for each plant for optimal identification and detectability. If State endangered or threatened plants are found within the Project area, removal or relocation of plants and destruction of the plant's seed bank are considered "take", which could only be authorized by the Department through an Incidental Take Permit pursuant to California Fish and Game

Kevin Norgaard
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Page 6

Code Section 2081. Issuance of the Incidental Take Permit would need to occur prior to commencing Project-related activities with the potential to impact listed plant species. As mentioned in paragraphs above, "take" of listed plants could result in acquiring lands for the protection and management of the species along with providing funding for management in perpetuity.

Mitigation Measure 4.5.11 indicates that Project-related activities may impact watercourses under the jurisdiction of the Department, which would require issuance of a Stream and Lake Alteration Agreement. A single watercourse is identified in the DEIR as requiring a Stream and Lake Alteration Agreement. The Department recommends that all Project-related disturbances to watercourses and ponded water be identified and analyzed in a Stream and Lake Alteration Agreement Notification whereby the Department will make the determination which activities on which water bodies may need an agreement. The language should be modified to include submitting a 1602 notification for all activities that may impact any water body and included in the Final EIR.

Swainson's Hawk: There is no mention of the State-listed threatened Swainson's hawk as having the potential to occur within the Project area. Particularly on the south, east, and north sides of the Project area, the Department believes the potential exists for Swainson's hawk to nest or forage within the Project area. The Department recommends that potential Project-related impacts to this species be analyzed in the Final EIR. Because Swainson's hawk is a State-listed species, no "take" is allowed without authorization from the Department through issuance of an ITP. To prevent unauthorized "take" of this species, the Department recommends that the City include in the Final EIR a mitigation measure to have a qualified biologist conduct surveys following the protocol established by the Swainson's Hawk Technical Advisory Committee (2000), which requires multiple surveys be conducted throughout the Swainson's hawk breeding season (March 1 through July 31) in the season prior to start of Project activities. If active Swainson's hawk nests are found, they should be protected by a ½-mile no-disturbance buffer until the young have fledged and are no longer dependent on the nest or parents for survival. If maintaining this buffer throughout the breeding period is not feasible, then the City should submit to the Department an application for an ITP. The Final EIR should also include a Mitigation Measure to off-set any loss of Swainson's hawk foraging habitat. This would include acquiring and protecting appropriate lands and providing funding for management of the land for the protection of Swainson's hawk in perpetuity (Department, 1994).

Kevin Norgaard
May 2, 2011
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If you have any questions regarding these comments, please contact Lisa Gymer, Environmental Scientist, at the address provided on this letterhead or by telephone at (559) 243-4014, extension 238.

Sincerely,



Jeffrey R. Single, Ph.D.
Regional Manager

cc Michael Welsh
United States Fish and Wildlife Service
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

Kate Dadey
United States Army Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Matt Scroggins
Regional Water Quality Control Board
1685 E Street
Fresno, California 93706

Kevin Norgaard
May 2, 2011
Page 8

Literature Cited

The Burrowing Owl Consortium. 1993. Burrowing owl survey protocol and mitigation guidelines. The Burrowing Owl Consortium, April 1993.

CDFG, 1995. Staff Report on Burrowing Owl Mitigation. California Department of Fish and Game.

CDFG, 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo Swainsoni*) in the Central Valley of California. California Department of Fish and Game.

USFWS, DFG 2003. Interim Guidance on Conducting Site Assessments and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander. U.S. Fish and Wildlife Service, California Department of Fish and Game.



Linda S. Adams
Acting Secretary for
Environmental Protection

State Water Resources Control Board

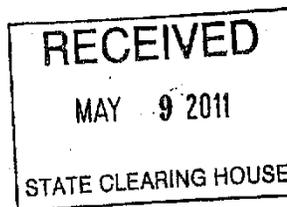
Division of Financial Assistance
1001 I Street • Sacramento, California 95814 • (916) 341-5700 FAX (916) 341-5707
Mailing Address: P.O. Box 944212 • Sacramento, California • 94244-2120
Internet Address: <http://www.waterboards.ca.gov>



Edmund G. Brown Jr.
Governor

MAY - 9 2011

Mr. Kevin Norgaard
City of Fresno, Department of Public Utilities
5607 West Jensen Avenue
Fresno, CA 93706



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5/9/2011
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Dear Mr. Norgaard:

DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) FOR CITY OF FRESNO DEPARTMENT OF PUBLIC UTILITIES (CITY); CITY OF FRESNO RECYCLED WATER MASTER PLAN (PROJECT); STATE CLEARINGHOUSE NO. 2010051015

We understand the City may be pursuing Clean Water State Revolving Fund (CWSRF) financing for this Project. As a funding agency and a state agency with jurisdiction by law to preserve, enhance, and restore the quality of California's water resources, the State Water Resources Control Board (State Water Board) is providing the following information and comments for the California Environmental Quality Act (CEQA) document prepared for the Project.

The City may want to consider the CWSRF Program to provide funding for future construction. The State Water Board, Division of Financial Assistance, is responsible for administering CWSRF financing. The primary purpose for the CWSRF Program is to implement the Clean Water Act and various state laws by providing financial assistance for wastewater treatment facilities necessary to prevent water pollution, recycle water, correct nonpoint source and storm drainage pollution problems, and provide for estuary enhancement, thereby protecting and promoting health, safety and welfare of state inhabitants. The CWSRF Program provides low-interest funding equal to one-half the most recent State General Obligation Bond Rates with a 20-year term. Applications are accepted and processed continuously. For more information refer to the State Water Board's CWSRF website at www.waterboards.ca.gov/waterissues/programs/grantsloans/srf/index.shtml.

The CWSRF Program is partially funded by the United States Environmental Protection Agency (USEPA) and requires additional "CEQA-Plus" environmental documentation and review. Three information sheets are included that further explain the environmental review process and additional federal requirements in the CWSRF Program. In addition, an environmental evaluation form is included for the City to submit should it pursue CWSRF financing. The State Water Board can consult directly with agencies responsible for implementing federal environmental laws and regulations. Any environmental issues raised by federal agencies or their representatives will need to be resolved prior to State Water Board approval of a CWSRF financing commitment. For further information on the CWSRF Program environmental review requirements please contact Ms. Michelle Lobo at (916) 341-6983.

It is important to note that prior to a CWSRF financing commitment, projects are subject to the provisions of the Federal Endangered Species Act and must obtain approval from the United States Fish and Wildlife Service (USFWS), and/or National Marine Fisheries Service (NMFS) for any potential effects to special status species. Please be advised that the State Water Board can consult with the USFWS, and/or NMFS on behalf of the City regarding all federal special status species the Project has the potential to impact if the Project is to be funded under the CWSRF Program.

California Environmental Protection Agency



Recycled Paper

Mr. Kevin Norgaard

- 3 -

Following are specific comments on the draft EIR:

1. Please indicate the listing status of the California Horned Lark on page 4.5-10 and the San Joaquin Pocket Mouse on page 4.5-11.
2. Page 3-38, section 3.5.3.5, states that the Project would result in the construction of groundwater recharge basins. Since there is the potential for these basins to serve as breeding habitat for mosquitoes, please discuss measures to prevent mosquitoes from inhabiting the Project area.

The State Water Board has no further comments on the draft EIR at this time. Thank you for the opportunity to review the City's environmental document. If you have any questions or concerns, please feel free to contact me at (916) 341-6983 or MLobo@waterboards.ca.gov, or contact Mr. Alex Hunt at (916) 341-7388 or AHunt@waterboards.ca.gov.

Sincerely,



Michelle Lobo
Environmental Scientist

Enclosures (4)

cc: State Clearinghouse w/o enclosures
(Re: SCH# 2010051015)
P. O. Box 3044
Sacramento, CA 95812-3044



Letter 1: Governor's Office of Planning and Research State Clearinghouse and Planning Unit

Response to Comment 1-1

The comment acknowledges that the City has complied with the State Clearinghouse review requirements for the Draft EIR pursuant to CEQA. One letter was attached received from the California Department of Fish and Game Central Region. See Responses to Letter 2.



FACSIMILE LEADER PAGE

**California Department of Fish and Game
Central Region
Region 4
1234 East Shaw Avenue
Fresno, California 93710**

INFO (559) 243-4017

FAX (559) 243-3004

DATE: 5/6/11 **PAGE 1 OF** 9

TO: Kevin Norgaard
City of Fresno, Department of Public Utilities

FAX: (559) 498-1700 **PHONE:** (559) 621-5297

FROM: Lisa Gymer

INSTRUCTIONS: Original to follow by mail.

**DEPARTMENT OF FISH AND GAME**

JOHN McCAMMIAN, Director



Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
<http://www.dfg.ca.gov>

May 2, 2011

Kevin Norgaard
City of Fresno
Department of Public Utilities
5607 West Jensen Avenue
Fresno, California 93706

Subject: Draft Environmental Impact Report (DEIR)
City of Fresno Recycled Water Master Plan
SCH No. 2010051015

Dear Mr. Norgaard:

The Department of Fish and Game (Department) has reviewed the DEIR for the City of Fresno Recycled Water Master Plan (Project) submitted by the City of Fresno Department of Public Utilities (City). The Project would identify potential recycled water use opportunities within the City and its Sphere of Influence (SOI), including Fresno County lands located in or adjacent to the SOI. Project approval would allow the installation and operation of treatment, storage, and distribution infrastructure to serve the Project area with recycled water.

The Department has the following comments regarding the information provided in Section 4.5-Biological Resources, of the DEIR.

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Conserving California's Wildlife Since 1870

Kevin Norgaard
May 2, 2011
Page 2

Responsible Agency Authority

California Endangered Species Act (CESA): The Department has regulatory authority over projects that could result in the "take" of any species listed by the State as threatened or endangered, pursuant to Fish and Game Code Section 2081. If the Project could result in the "take" of any species listed as threatened or endangered under CESA, the Department may need to issue an Incidental Take Permit (ITP) for the Project. CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (Sections 21001(c), 21083, Guidelines sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports a Statement of Overriding Consideration (SOC). The CEQA Lead Agency's SOC does not eliminate the project proponent's obligation to comply with Fish and Game Code Section 2080.

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Project Recommendations

Impact 4.5.4 states that implementation of the Project could result in potentially significant impacts to San Joaquin kit fox through direct and indirect impacts to den sites. The San Joaquin kit fox is listed as threatened under CESA and is listed as endangered under the Federal Endangered Species Act (ESA). As such, both the United States Fish and Wildlife Service (USFWS) and the Department are responsible for the protection of the species and the habitat upon which it relies, and the Department agrees with the conclusion that impacts to this species should be mitigated to reduce that impact to a less than significant level. The Department agrees with the Mitigation Measures provided in the DEIR with the following exceptions/additions.

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2-1

Kevin Norgaard
May 2, 2011
Page 3

- 3) Destruction of unoccupied dens (by individuals authorized to do so) should be accomplished through hand excavation unless ground conditions preclude it. After complete excavation, the dens should be backfilled and compacted.

2-1
Con ' t

The Department recommends that the above three points be included in the Final Environmental Impact Report (EIR) as required Mitigation Measures.

Impact 4.5.5 states that implementation of the Project could result in potential disturbance to or loss of California tiger salamander (CTS) as suitable breeding and upland habitat exists within the Project area. CTS is listed as a threatened species under both ESA and CESA. As such, both the USFWS and the Department are responsible for the protection of the species and the habitats on which they rely and the Department agrees that Project-related impacts to this species should be mitigated to reduce the impact to a less than significant level. Mitigation Measure 4.5.5 attempts to do this and the Department agrees with the Mitigation Measures provided in the DEIR with the following exceptions/additions.

- 1) Surveys conducted following the protocol (USFWS 2003) require at least two years to complete to be reasonably assured that CTS are absent from any particular area and should be conducted by qualified biologists. Individuals conducting surveys or participating in on-site biological monitoring that may involve the handling, moving, corralling, or capturing of animals are required to have appropriate authorization from both the Department (Fish and Game Code Sections 2081 or 2080.1) and the USFWS.
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- 3) In the absence of a State ITP issued as described above, there can be no handling, moving, corralling, or capturing of animals as this constitutes "take".
- 4) Compensatory mitigation is calculated based on the population, quality of habitat, connectivity of habitat and gene flow between populations, etc. Compensatory mitigation can be fulfilled through purchase of mitigation credits at a bank approved by the Department to sell credits for CTS breeding

2-2

Kevin Norgaard
May 2, 2011
Page 4

and upland habitat. As of the date of this letter, there are no Department-approved banks from which to purchase CTS credits that include the Project area in the bank service area. This would most likely result in the need for the City or their agent to purchase fee-title or a conservation easement on lands that support CTS, and either transfer them to the Department or a Department approved non-profit conservation (with the Department as a third party beneficiary). Management of these lands would need to be funded in perpetuity in the form of a non-wasting endowment.

2-2
Con't

In summary, since the DEIR indicates that Project-related impacts to CTS are likely and significant, the City can 1) either assume presence in areas containing suitable breeding habitat and uplands within 1.24 miles of breeding habitat, obtain an ITP through the Department, and mitigate accordingly or 2) conduct CTS surveys according to the protocol (requires at least two years to complete depending on precipitation and other factors) and if the surveys result in negative findings, the City can proceed with Project-related activities without the need to obtain an ITP. It should be noted that surveys resulting in negative findings are only good for one year after their completion and additional surveys would be necessary the following spring should the individual project not be initiated by that time. If the surveys result in detections of CTS, the City would follow the first option by obtaining an ITP, mitigation lands, and providing funding for management of said mitigation lands.

Table 4.5-2 in the DEIR is a list of special status species potentially occurring in the Project area. According to the table, listed invertebrates have a low potential to exist within the Project area. However, the Department recommends that these invertebrates be fully analyzed for Project-related impacts in the Final EIR because frequently these species are found in the same ponded water and seasonal wetlands used by CTS for breeding. As has already been noted, the DEIR discloses that ponded waters and seasonal wetlands occur within the Project area and discusses the potential of these waterbodies to be significantly impacted through implementation of the Project. The Department also recommends the USFWS be consulted well in advance of Project implementation.

2-3

Mitigation Measure 4.5.1 should include measures to address Project-related impacts to burrowing owl burrows and loss of foraging habitat. To offset these impacts, the Department recommends that an appropriate amount of foraging habitat (no less than 6.5 acres per pair or unpaired bird) be acquired and permanently protected. Protected lands should be adjoining those that are impacted and at a location approved by the Department. When burrow destruction is unavoidable, existing unsuitable burrows should be enhanced or new burrows created (install artificial burrows) at a ratio of 2:1 on the protected lands. The City should also provide funding for the long-term

2-4

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management and monitoring of the protected lands. These mitigation measures should be included in the Final EIR.

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In addition to the measures outlined in Mitigation Measure 4.5.2, the Department recommends adding that no Project-related activities should occur during the general bird nesting season (February 1 through September 15). If this is infeasible, then a qualified biologist should conduct thorough tree, shrub, and ground searches for active bird nests. Since no specific no-disturbance buffer distances were provided in the DEIR for the protection of active bird nests, no Project-related activities should occur until after consultation with the Department and implementation of the on the ground protective buffers occurs. Additionally, active nests of State-listed species may not be able to be removed (or the vegetation in which they are located) even outside of the general nesting season for the listed bird without ITP authorization. These additional recommendations should be included as Mitigation Measures in the Final EIR.

2-5

Impact 4.5.3 – Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (VELB). The Department recommends that a qualified botanist/biologist survey the Project area for the VELB host plant (elderberry species) prior to initiating Project-related activities. This additional mitigation measure should be included in the Final EIR.

2-6

Impact 4.5.6 – Western pond turtle (*Emys marmorata*). The Department recommends that the Final EIR include an additional Mitigation Measure requiring the City to prepare and submit a turtle relocation plan for Department approval prior to initiating any Project-related activities.

2-7

Mitigation Measure 4.5.7 should include a requirement for the City to prepare and submit an American badger (*Taxidea taxus*) relocation plan for Department approval prior to initiating any Project-related activities. It should also include a requirement to avoid all potential San Joaquin pocket mouse (*Perognathus inornatus*) burrows by 50 feet during the breeding season identified as March 1 through July 31 and to the greatest extent possible outside the breeding season (August 1 through February 28). These additional recommendations should be included as Mitigation Measures in the Final EIR.

2-8

Mitigation Measure 4.5.9 should indicate that special status plant surveys will be conducted multiple times during the appropriate blooming period for each plant for optimal identification and detectability. If State endangered or threatened plants are found within the Project area, removal or relocation of plants and destruction of the plant's seed bank are considered "take", which could only be authorized by the Department through an Incidental Take Permit pursuant to California Fish and Game

2-9
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Code Section 2081. Issuance of the Incidental Take Permit would need to occur prior to commencing Project-related activities with the potential to impact listed plant species. As mentioned in paragraphs above, "take" of listed plants could result in acquiring lands for the protection and management of the species along with providing funding for management in perpetuity.

2-9
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Mitigation Measure 4.5.11 indicates that Project-related activities may impact watercourses under the jurisdiction of the Department, which would require issuance of a Stream and Lake Alteration Agreement. A single watercourse is identified in the DEIR as requiring a Stream and Lake Alteration Agreement. The Department recommends that all Project-related disturbances to watercourses and ponded water be identified and analyzed in a Stream and Lake Alteration Agreement Notification whereby the Department will make the determination which activities on which water bodies may need an agreement. The language should be modified to include submitting a 1602 notification for all activities that may impact any water body and included in the Final EIR.

2-10

Swainson's Hawk: There is no mention of the State-listed threatened Swainson's hawk as having the potential to occur within the Project area. Particularly on the south, east, and north sides of the Project area, the Department believes the potential exists for Swainson's hawk to nest or forage within the Project area. The Department recommends that potential Project-related impacts to this species be analyzed in the Final EIR. Because Swainson's hawk is a State-listed species, no "take" is allowed without authorization from the Department through issuance of an ITP. To prevent unauthorized "take" of this species, the Department recommends that the City include in the Final EIR a mitigation measure to have a qualified biologist conduct surveys following the protocol established by the Swainson's Hawk Technical Advisory Committee (2000), which requires multiple surveys be conducted throughout the Swainson's hawk breeding season (March 1 through July 31) in the season prior to start of Project activities. If active Swainson's hawk nests are found, they should be protected by a 1/2-mile no-disturbance buffer until the young have fledged and are no longer dependent on the nest or parents for survival. If maintaining this buffer throughout the breeding period is not feasible, then the City should submit to the Department an application for an ITP. The Final EIR should also include a Mitigation Measure to off-set any loss of Swainson's hawk foraging habitat. This would include acquiring and protecting appropriate lands and providing funding for management of the land for the protection of Swainson's hawk in perpetuity (Department, 1994).

2-11

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If you have any questions regarding these comments, please contact Lisa Gymer, Environmental Scientist, at the address provided on this letterhead or by telephone at (559) 243-4014, extension 238.

Sincerely,



James R. Single, Ph.D.
Regional Manager

cc Michael Welsh
United States Fish and Wildlife Service
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

Kate Dadey
United States Army Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Matt Scroggins
Regional Water Quality Control Board
1685 E Street
Fresno, California 93706

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The Burrowing Owl Consortium. 1993. Burrowing owl survey protocol and mitigation guidelines. The Burrowing Owl Consortium, April 1993.

CDFG, 1995. Staff Report on Burrowing Owl Mitigation. California Department of Fish and Game.

CDFG, 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo Swainsoni*) in the Central Valley of California. California Department of Fish and Game.

USFWS, DFG 2003. Interim Guidance on Conducting Site Assessments and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander. U.S. Fish and Wildlife Service, California Department of Fish and Game.

Letter 2: California Department of Fish and Game

Response to Comment 2-1

The City acknowledges CDFG's concern regarding impacts to the San Joaquin kit fox. Mitigation Measure 4.5.4a on page 4.5-31 of the Draft EIR reduces impacts to this species by requiring identification of active San Joaquin kit fox dens prior to initiation of construction activities, and includes measures to minimize the potential for their dens to be disturbed or their habitat lost. Therefore, Mitigation Measures 4.5.4a provides the same intent as the additions requested in the comment letter and additional mitigation is not required.

Response to Comment 2-2

Comment noted. Mitigation Measure 4.5.5 on page 4.5-32 of the Draft EIR is revised to read as follows:

Measure 4.5.5: To ensure that impacts to the California tiger salamander and its habitat are avoided or reduced, the following measures shall be implemented:

- Prior to project approval, a Site Assessment shall be conducted by ~~Not less than two weeks prior to the onset of ground-disturbing activities,~~ a qualified biologist ~~shall survey all~~ to determine if suitable habitat for California tiger salamander (CTS) ~~exists~~ exists within the project site that may be directly affected by project activities and whether further studies will be required. The survey shall be conducted and findings report prepared according to the methods outlined in the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (USFWS, 2003) and submitted to USFWS for review and approval.
- ~~Prior to construction,~~ In the event that further protocol-level surveys are required and that the surveys result in a negative finding per USFWS and CDFG guidance, a solid barrier such as silt fencing shall be installed to exclude CTS from entering the project site and per the guidance and ~~as~~ approved by the on-site biologist.
- Daily visual clearance surveys shall also be conducted during initial ground-disturbing activities. If a CTS is identified where habitat disturbance is proposed, work shall be halted and an USFWS-approved biologist shall be contacted to determine appropriate actions, unless already stipulated by the USFWS and California Department of Fish and Game (CDFG). If the USFWS and CDFG approve moving salamanders, the qualified biologist shall be allowed sufficient time to move the species from the work site before work activities resume. Only USFWS-approved biologists, and as allowed for under the conditions of a State Incidental Take Permit (ITP), shall participate in the capturing, handling, and translocation of CTS. Any CTS relocated by the project shall be moved to nearby appropriate habitat, as determined by the qualified biologist and approved by USFWS and CDFG. Results of the preconstruction surveys shall be reported to USFWS.
- As approved by the USFWS and the CDFG, the applicant shall mitigate for the permanent loss of CTS habitat at a 0.2:1 ratio. Mitigation may be achieved by purchasing appropriate mitigation credits at a USFWS and CDFG-approved bank

or preserve or through the purchase of fee title or conservation easement lands as approved by USFWS and CDFG.

Response to Comment 2-3

The City acknowledges CDFG's concern regarding impacts to listed invertebrates. Habitat suitability for Conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool fairy shrimp (*Branchinecta lynchi*), midvalley fairy shrimp (*Branchinecta mesovallensis*), and California linderiella (*California linderiella*) was addressed during preparation of the Draft EIR (as discussed in Table 4.5-2 and depicted in Figure 4.5-2, pages 4.5-9 and 4.5-14, respectively). It was determined that there was a low potential for these species to occur in the project area based on the CNDDDB records search (CDFG, 2010), which revealed no known occurrences in the project area, and the fact that suitable habitat was limited. Special-status species with a low to unlikely potential to occur in the proposed project area were omitted from discussion in the Draft EIR based on the fact that the project area is out of their range, devoid of suitable habitat, and/or the chances of occurrence are limited based on specific project site conditions.

Additionally, the potential for presence of listed invertebrates will be evaluated on a project-specific basis by the U.S. Army Corps of Engineers (Corps) and United States Fish and Wildlife Service (USFWS) during the Section 404 and Section 7 review process and through implementation of Mitigation Measure 4.5.10. The Corps is required to consult with the USFWS to ensure federally listed species that may inhabit Section 404 waters are not adversely affected by project activities as required by Section 7 of the Endangered Species Act. Therefore, no further mitigation is required.

Response to Comment 2-4

The City acknowledges CDFG's concern regarding loss of foraging habitat for burrowing owls. However, as the burrowing owl is a Species of Special Concern and not a State listed species, proposed Mitigation Measure 4.5.1 on pages 4.5-27 and 4.5-28 adequately addresses potential impacts to this species per the requirements of CEQA. Mitigation Measure 4.5.1 requires identification of nests prior to initiation of construction activities and includes measures to minimize the potential for burrowing owls to be disturbed or their habitat lost. Therefore, additional mitigation is not required.

Response to Comment 2-5

The City acknowledges CDFG's concern regarding impacts to nesting birds. Mitigation Measure 4.5.2 on page 4.5-29 of the Draft EIR requires identification of potential nests prior to initiation of construction activities and the minimization of potential impacts to raptor nesting and foraging habitat. Therefore, Mitigation Measures 4.5.2 provides the same intent as the additions requested in the comment letter and additional mitigation is not required.

Response to Comment 2-6

Comment noted. Mitigation Measure 4.5.3 on page 4.5-29 of the Draft EIR is revised to read as follows:

Measure 4.5.3: Elderberry shrubs shall be avoided where possible. The project proponent shall ensure that elderberry shrubs within 100 feet of the proposed project activities shall conform to the following the *USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS, 1999) to avoid impacts to and take of VELB as defined under the Endangered Species Act..

1. Prior to initiating project related activities, elderberry shrubs within the project boundaries including those areas outside of the project boundaries and within 100-feet of proposed project activities shall be surveyed by a qualified botanist/biologist. The results of the survey shall be submitted to USFWS for review, approval and to be used as the basis for determining appropriate avoidance and mitigation measures.
2. For all shrubs that can be avoided by construction activities, a 100-foot buffer surrounding the plant shall be maintained at all times. The buffer shall be fenced with temporary fencing and flagging. Signs shall be placed along the fencing every 50 feet that state the following: “This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.” The above sign shall be readable from a distance of 20 feet and maintained through the duration of construction. Work crews shall be briefed on the status of the beetle, the need to protect its host plant (elderberries), requirements to avoid damaging elderberry shrubs, and possible penalties for not complying with identified avoidance and minimization measures. In addition, construction workers should be made aware of the habitat needs of VELB and the location of protection areas on the site (USFWS, 1999).
3. Where complete avoidance of shrubs within 100 feet is not feasible, USFWS shall be consulted prior to any disturbance taking place. Protective measures include:
 - Establishing a 20-foot buffer shall be fenced with temporary fencing and flagging and maintained throughout construction. Signs shall be placed along the fencing as described above, and work crews shall be briefed as described above.
 - The project proponent shall restore any damage occurring within 100 feet of elderberry shrubs that are not removed by the project during construction. Erosion control shall be provided and the area shall be revegetated with appropriate native plants.
 - No insecticides, herbicides, fertilizers, or other chemical shall be used within 100 feet of any elderberry shrub with one or more stems measuring 1 inch or greater in diameter at ground level.
 - A written description of planned restoration, protection, and maintenance of buffer areas post-construction shall be provided.

4. For any affected shrubs (shrubs within 100 feet of disturbance), the project proponent shall provide compensatory mitigation by either: 1) purchasing credits for all required compensation from the USFWS-approved Conservation Bank, 2) transplanting the shrubs at a location approved by USFWS and purchasing credits for any remaining mitigation requirements using mitigation ratios described in *USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS, 1999), or 3) transplanting the shrubs onto the Conservation Bank property and planting additional seedlings for any remaining mitigation requirements using mitigation ratios described in *USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS, 1999). Each credit purchased from the Conservation Bank will provide compensatory mitigation for five elderberry stems and five associated native plant species. If the shrubs are relocated to the Conservation Bank property, all Conservation Guidelines described by USFWS (1999) for elderberry transplants shall be implemented, and the project proponent's contractor shall coordinate with the Conservation Bank to replant the shrubs.

Response to Comment 2-7

The City acknowledges CDFG's concern regarding western pond turtle. The western pond turtle is a Species of Special Concern and not a State listed species. Mitigation Measure 4.5.6 on page 4.5-33 of the Draft EIR ensures that impacts to western pond turtle breeding and foraging habitat would be minimized. Therefore, Mitigation Measure 4.5.6 provides the same intent as the additions requested in the comment letter and additional mitigation is not required.

Response to Comment 2-8

The City acknowledges CDFG's concern regarding the American Badger and San Joaquin pocket mouse. However, proposed Mitigation Measure 4.5.7 (see page 4.5-34 of the Draft EIR) is adequate per CEQA and addresses impacts to both species. The American badger is not a state listed species and therefore a relocation plan is not required per CEQA. Mitigation Measure 4.5.7 ensures that impacts to both species breeding and foraging habitat would be minimized. Therefore, additional mitigation is not required.

Response to Comment 2-9

The City acknowledges the CDFG's concern regarding impacts to special status plants. Mitigation Measure 4.5.9 on page 4.5-36 of the Draft EIR requires that special status plant species are identified and protected prior to initiation of construction activities. Therefore, Mitigation Measure 4.5.9 provides the same intent as the additions requested in the comment letter and additional mitigation is not required.

Response to Comment 2-10

The City acknowledges the CDFG's concern regarding impacts to watercourses under the jurisdiction of the watercourses under its jurisdiction. Mitigation Measure 4.5.11 on page 4.5-38 of the Draft EIR requires that waters of the US are identified and protected prior to initiation of

construction activities. Therefore, Mitigation Measure 4.5.11 provides the same intent as the additions requested in the comment letter; therefore, additional mitigation is not required.

Response to Comment 2-11

The City acknowledges the CDFG's concern regarding impacts to Swainson's hawk and loss of Swainson's hawk foraging habitat. The potential for presence of suitable nesting and foraging habitat for Swainson's hawk was addressed during preparation of the Draft EIR (as discussed in Table 4.5-2 and depicted in Figure 4.5-2, pages 4.5-9 and 4.5-14, respectively) and a determination was made that the likelihood for presence is low. Special-status species with a low to unlikely potential to occur in the proposed project area were omitted from discussion in the Draft EIR based on the fact that the project area is out of their range, devoid of suitable habitat, and/or the chances of occurrence are limited based upon specific project site conditions.

This determination was based upon the CNDDDB records search (CDFG, 2010) which revealed no known nest sites in the project area and the California Swainson's Hawk Inventory which documents that Swainson's hawk numbers are sparse in the project area as it is located within the far southern extent of its current range. Mitigation Measure 4.5.2 on page 4.5-29 of the Draft EIR requires identification of potential nests before initiation of construction activities and the minimization of potential impacts to raptor nesting and foraging habitat. This mitigation measure adequately addresses potential impacts to Swainson's hawk per the requirements of CEQA and CESA; therefore, additional mitigation is not required.



Linda S. Adams
Acting Secretary for
Environmental Protection

State Water Resources Control Board

Division of Financial Assistance

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



Edmund G. Brown Jr.
Governor

MAY - 9 2011

Mr. Kevin Norgaard
City of Fresno, Department of Public Utilities
5607 West Jensen Avenue
Fresno, CA 93706

Dear Mr. Norgaard:

DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) FOR CITY OF FRESNO DEPARTMENT OF PUBLIC UTILITIES (CITY); CITY OF FRESNO RECYCLED WATER MASTER PLAN (PROJECT); STATE CLEARINGHOUSE NO. 2010051015

We understand the City may be pursuing Clean Water State Revolving Fund (CWSRF) financing for this Project. As a funding agency and a state agency with jurisdiction by law to preserve, enhance, and restore the quality of California's water resources, the State Water Resources Control Board (State Water Board) is providing the following information and comments for the California Environmental Quality Act (CEQA) document prepared for the Project.

The City may want to consider the CWSRF Program to provide funding for future construction. The State Water Board, Division of Financial Assistance, is responsible for administering CWSRF financing. The primary purpose for the CWSRF Program is to implement the Clean Water Act and various state laws by providing financial assistance for wastewater treatment facilities necessary to prevent water pollution, recycle water, correct nonpoint source and storm drainage pollution problems, and provide for estuary enhancement, thereby protecting and promoting health, safety and welfare of state inhabitants. The CWSRF Program provides low-interest funding equal to one-half the most recent State General Obligation Bond Rates with a 20-year term. Applications are accepted and processed continuously. For more information refer to the State Water Board's CWSRF website at: www.waterboards.ca.gov/waterissues/programs/grantsloans/srf/index.shtml.

The CWSRF Program is partially funded by the United States Environmental Protection Agency (USEPA) and requires additional "CEQA-Plus" environmental documentation and review. Three information sheets are included that further explain the environmental review process and additional federal requirements in the CWSRF Program. In addition, an environmental evaluation form is included for the City to submit should it pursue CWSRF financing. The State Water Board can consult directly with agencies responsible for implementing federal environmental laws and regulations. Any environmental issues raised by federal agencies or their representatives will need to be resolved prior to State Water Board approval of a CWSRF financing commitment. For further information on the CWSRF Program environmental review requirements please contact Ms. Michelle Lobo at (916) 341-6983.

It is important to note that prior to a CWSRF financing commitment, projects are subject to the provisions of the Federal Endangered Species Act and must obtain approval from the United States Fish and Wildlife Service (USFWS), and/or National Marine Fisheries Service (NMFS) for any potential effects to special status species. Please be advised that the State Water Board can consult with the USFWS, and/or NMFS on behalf of the City regarding all federal special status species the Project has the potential to impact if the Project is to be funded under the CWSRF Program.

3-1

California Environmental Protection Agency



Recycled Paper

Mr. Kevin Norgaard

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In addition, CWSRF projects must comply with federal laws pertaining to cultural resources, specifically Section 106 of the National Historic Preservation Act. The State Water Board has been delegated responsibility for carrying out the requirements of Section 106 under a Nationwide Programmatic Agreement executed for the CWSRF Program by the USEPA, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers.

As stated above, the State Water Board has responsibility for ensuring compliance with Section 106 and the State Water Board Cultural Resources Officer (CRO) consults directly with the California State Historic Preservation Officer (SHPO). SHPO consultation is initiated when sufficient information is provided by the CWSRF applicant for projects having potential impacts to cultural resources. Please contact the State Water Board CRO Ms. Cookie Hirn at 916-341-5690, to find out more about the requirements and questions on how to begin the Section 106 compliance process.

Please provide the CRO with a copy of a current Records Search for the Project area, including maps that show all recorded sites and surveys in relation to the APE for the Project. The APE is three-dimensional and includes all areas that may be affected by the Project. The APE includes the surface area and extends below ground to the depth of any Project excavations. The Records Search request should be made for an area larger than the APE. The appropriate area varies for different projects but should be drawn large enough to provide information on what types of sites may exist in the vicinity. Specifically, please send copies of the Records Search maps with all sites and surveys mapped in relation to the Project, and copies of Native American consultation including documentation of follow-up phone calls. Additionally, the Project archeologist will need to provide the CRO with a map delineating the areas deemed sensitive for buried resources, and a rationale for the designations.

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Native American and Interested Party Consultation are required for Section 106 compliance:

- A Project description and map should be sent to the Native American Heritage Commission (NAHC). The NAHC will provide a list of Native American tribes and individuals that are culturally afflicted with your Project area and recommend that they all be contacted
- A Project description and map should be sent to everyone on the list provided by the NAHC, asking for information on the Project area
- Similar letters should be sent to local historical organizations
- Follow-up contact should be made by phone, if possible, and a phone log should be included

Comments from the NAHC, local tribes, and historical organizations affiliated with the Project area, as well as the City's response to these comments should be included in the submittal to the CRO.

The NAHC can be contacted at:

915 Capitol Mall, Room 364
Sacramento, CA 95814
(916) 653-4082



Mr. Kevin Norgaard

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Following are specific comments on the draft EIR:

1. Please indicate the listing status of the California Horned Lark on page 4.5-10 and the San Joaquin Pocket Mouse on page 4.5-11.
2. Page 3-38, section 3.5.3.5, states that the Project would result in the construction of groundwater recharge basins. Since there is the potential for these basins to serve as breeding habitat for mosquitoes, please discuss measures to prevent mosquitoes from inhabiting the Project area.

3-2

3-3

The State Water Board has no further comments on the draft EIR at this time. Thank you for the opportunity to review the City's environmental document. If you have any questions or concerns, please feel free to contact me at (916) 341-6983 or MLobo@waterboards.ca.gov, or contact Mr. Alex Hunt at (916) 341-7388 or AHunt@waterboards.ca.gov.

Sincerely,



Michelle Lobo
Environmental Scientist

Enclosures (4)

cc: State Clearinghouse w/o enclosures
(Re: SCH# 2010051015)
P. O. Box 3044
Sacramento, CA 95812-3044



BASIC CRITERIA FOR CULTURAL RESOURCES REPORTS

FOR SECTION 106 CONSULTATION WITH THE STATE HISTORIC PRESERVATION OFFICER (SHPO) UNDER THE NATIONAL HISTORIC PRESERVATION ACT (NHPA)

CURRENT RECORDS SEARCH INFORMATION

- A current (less than a year old) records search from the appropriate Information Center is necessary. The records search should include maps that show all recorded sites and surveys in relation to the area of potential effects (APE) for the project.
- The APE is three-dimensional and includes all areas that may be affected by the project. It includes the surface area and extends below ground to the depth of any project excavations.
- The records search request should be made for an area larger than the APE. The appropriate area varies for different projects but should be drawn large enough to provide information on what types of sites may exist in the vicinity.

NATIVE AMERICAN AND INTERESTED PARTY CONSULTATION

- Native American and interested party consultation should be initiated at the beginning of any cultural resource investigations. The purpose is to gather information from people with local knowledge that may be used to guide research.
- A project description and map should be sent to the Native American Heritage Commission (NAHC) requesting a check of their Sacred Lands Files. The Sacred Lands Files include religious and cultural places that are not recorded at the information centers.
- The NAHC will include a list of Native American groups and individuals with their response. A project description and maps should be sent to everyone on the list asking for information on the project area.
- Similar letters should be sent to local historical organizations.
- Follow-up contact should be made by phone if possible and a phone log should be included in the report.

REPORT TERMINOLOGY

- A cultural resources report used for Section 106 consultation should use terminology consistent with the NHPA.
-

- This doesn't mean that the report needs to "filled" with passages and interpretations of the regulations, the SHPO reviewer already knows the law.
- If "findings" are made they must be one of the four "findings" listed in Section 106. These include:
 - "No historic properties affected" (no properties are within the APE, including the below ground APE).
 - "No effect to historic properties" (properties may be near the APE but the project will not impact them).
 - "No adverse effect to historic properties" (the project may affect historic properties but the impacts will not be adverse)
 - "Adverse effect to historic properties". *Note: the SHPO must be consulted at this point. If your consultant proceeds on his own, his efforts may be wasted.*

WARNING PHRASES IN ALREADY PREPARED CEQA REPORTS

- A finding of "**no known resources**", this doesn't mean anything. The consultant's job is to find out if there are resources within the APE or to explain why they are not present.
- "**The area is sensitive for buried archaeological resources**", followed by a statement that "**monitoring is recommended as mitigation**". Monitoring is not an acceptable mitigation. A reasonable effort should be made to find out if buried resources are present in the APE.
- "**The area is already disturbed by previous construction**", this may be true, but documentation is still needed to show that the new project will not affect cultural resources. As an example, an existing road can be protecting a buried archaeological site. Or, previous construction may have impacted an archaeological site that was never documented.
- No mention of "**Section 106**", a report that gives adequate information for CEQA may not be sufficient to comply with Section 106.

Please contact me with any questions.

Cookie Hirn
SWRCB
Cultural Resources Officer
916-341-5690
Mhim@waterboards.ca.gov

INSTRUCTIONS AND GUIDANCE FOR "ENVIRONMENTAL COMPLIANCE INFORMATION"

Introduction:

Detailed information, including statutes and guidelines on the California Environmental Quality Act (CEQA), can be obtained at <http://ceres.ca.gov/ceqa>. A CEQA Process Flowchart that shows interaction points between lead and responsible agencies can be found at http://ceres.ca.gov/topic/env_law/ceqa/flowchart/index.html. In addition, State Water Board environmental staff is available to answer questions about the CEQA process. Please contact your assigned Project Manager to be directed to an appropriate environmental staff person for further clarification.

CEQA Checklist:

All projects coming to the State Water Board for funding are considered "projects" under CEQA because the State Water Board is providing discretionary approval for that funding.

The types of CEQA documents that might apply to an applicant's project include one of the following: 1. Notice of Exemption; 2. Initial Study/Negative Declaration (or Mitigated Negative Declaration with a Mitigation Monitoring and Reporting Program [MMRP]); or 3. Environmental Impact Report (EIR) with an MMRP. The applicant must determine the appropriate document for its project and submit the additional supporting information listed under the applicable section of the CEQA Checklist. Please submit two copies of all documents. If the applicant is using a CEQA document that is older than five years, the applicant must re-evaluate environmental and project conditions, and develop and submit an updated document based on the results of that re-evaluation.

The applicant must ensure the CEQA document is specific to the project for which funding is being requested. Tier I CEQA documents, such as Program or Master Plan EIRs, may not be suitable for satisfying State Water Board requirements if these documents are not project-specific. Instead, the applicant should be submitting a Tier II CEQA document that is project-specific. If this Tier II CEQA document references pertinent environmental and mitigation information contained in the Tier I CEQA document, then the applicant must submit both documents. *[NOTE: Tier I and Tier II documents refer to documents as defined under CEQA. Although the same terminology is used, these documents do not relate to the Tier I and Tier II level of reviews under the CWSRF Program.]*

Each applicant, if it is a public agency, is responsible for approving the CEQA documents it uses regardless of whether or not it is a lead agency under CEQA. Non-profit organizations, however, shall only be responsible for approving the applicable project mitigation measures identified in the MMRP. For purposes of State Water Board funding, all public agencies applying for this funding shall file either a Notice of Exemption or a Notice of Determination with the Governor's Office of Planning and Research (State Clearinghouse). Stamped copies of these notices shall be submitted with the rest of the environmental documents.

If the CEQA document is linked to a National Environmental Policy Act (NEPA) document (such as an Environmental Assessment or an Environmental Impact Statement), then the applicant shall submit the additional corresponding NEPA items with either a Finding of No Significant Impact, or a Record of Decision made by the lead agency under NEPA.

Clean Water SRF Program
Environmental Compliance

Note that additional information may be requested from the applicant after review of all the environmental documents to ensure the State Water Board can complete its own CEQA compliance.

Federal Information:

CEQA requires full disclosure of all aspects of the project, including impacts and mitigation measures that are not only regulated by state agencies, but also by federal agencies. Early consultation with state and federal agencies in the CEQA process will assist in minimizing changes to the project when funding is being requested from the State Water Board. For the items that follow the CEQA Checklist, the applicant shall provide the information and/or reference any applicable sections from the documents being submitted to assist with environmental staff's CEQA review, as well as to provide applicant guidance on any potential concerns, and to assist with federal coordination as needed.

1. Federal Endangered Species Act (ESA), Section 7:

For further information on the federal ESA relating to law, regulation, policy, and notices, go to <http://www.fws.gov/endangered/policy/index.html> and <http://www.nmfs.noaa.gov/pr/laws/esa/>. Note that compliance with both state and federal ESA is required of projects having the potential to impact special status species. Although overlap exists between the federal and state ESAs, there might be additional or more restrictive state requirements. For further information on the state ESA, go to <http://www.dfg.ca.gov/habcon/cesa/>.

2. National Historic Preservation Act, Section 106:

The NHPA focuses on federal compliance. In addition, CEQA requires that impacts to cultural and historic resources be analyzed. The "CEQA and Archeological Resources" section from the Governor's Office of Planning and Research CEQA Technical Advice Series states that the lead agency obtains a current records search from the appropriate California Historical Resources File System Information Center. In addition, the Native American Heritage Commission (NAHC) will provide a list of Native American tribes to be contacted and that are culturally affiliated with a project area.

The NAHC can be contacted at:

915 Capitol Mall, Room 364
Sacramento, CA 95814
(916) 653-4082

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Environmental Compliance

3. Clean Air Act:

For CWSRF financed projects, we recommend including a general conformity section in the CEQA documents so that another public review process will not be needed, should a conformity determination be required. The applicant should check with its air quality management district and review the State Air Resources Board [California air emissions map](#) for information on the State Implementation Plan. For information on the analysis steps involved in evaluating conformity, please contact the environmental staff person through the assigned Project Manager.

4. Coastal Zone Management Act:

For affected areas, refer to <http://coastalmanagement.noaa.gov/mystate/docs/StateCZBoundaries.pdf>. For additional information please refer to <http://www.coastal.ca.gov/ccatc.html> and/or <http://www.bcdc.ca.gov/>.

5. Farmland Protection Policy Act:

The Natural Resources Conservation Service provides information on the Farmland Protection Policy Act at <http://www.nrcs.usda.gov/programs/fppa>. Please see the following website regarding the Williamson Act <http://www.consrv.ca.gov/dlrp/lca>.

6. Floodplain Management - Executive Order 11988:

Each agency shall provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities. Before taking an action, each agency shall determine whether the proposed action will occur in a floodplain. The generally established standard for risk is the flooding level that is expected to occur every 100 years. If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain. The agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. For further information, please consult the following web link: <http://www.epa.gov/owow/wetlands/regs/eo11988.html>.

7. Migratory Bird Treaty Act (MBTA):

The MBTA, along with subsequent amendments to this Act, provides legal protection for almost all breeding bird species occurring in the United States and must be addressed in CEQA. The MBTA restricts the killing, taking, collecting and selling or purchasing of native bird species or their parts, nests, or eggs. The treaty allows hunting of certain game bird species, for specific periods, as determined by federal and state governments. In the CEQA document, each agency must make a finding that a project will comply with the MBTA. For further information, please consult the following web link: <http://www.fws.gov/laws/lawsdigest/migtrea.html>.

8. Protection of Wetlands – Executive Order 11990:

Projects, regardless of funding, must get approval for any temporary or permanent disturbance to federal and state waters, wetlands, and vernal pools. The permitting process is usually through the

Clean Water SRF Program
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U.S. Army Corps of Engineers (USACOE), can be lengthy and may ultimately require project alterations to avoid wetlands. Applicants must consult with USACOE early in the planning process if any portion of the project site contains wetlands, or other federal waters. The USACOE Wetland Delineation Manual is available at: <http://www.wetlands.com/regs/tlpage02e.htm>. Also note that the Water Boards are involved in providing approvals through a 401 Water Quality Certification and/or Waste Discharge Requirements (http://www.waterboards.ca.gov/water_issues/programs/cwa401/index.shtml).

9. Wild and Scenic Rivers Act:

There are construction restrictions or prohibitions for projects near or on a "wild and scenic river." A listing of designated "wild and scenic rivers" can be obtained at <http://www.rivers.gov/wildriverslist.html>. Watershed information can be obtained through the "Watershed Browser" at: http://cwp.resources.ca.gov/map_tools.php.

10. Source Water Protection:

For more information, please visit: <http://epa.gov/region09/water/groundwater/ssa.html>.

**CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
CHECKLIST FOR THE APPLICANT
What to Submit to your State Water Board's Project Manager**

If project is covered under a **CEQA Categorical or Statutory Exemption**, submit a copy of the following:

- Notice of Exemption (filed with the Governor's Office of Planning and Research)**
- List of Best Management Practices (BMPs) and their locations, if project implements BMPs**
- Map of the project area**

If project is covered under a **Negative Declaration**, submit a copy of the following:

- Draft and Final Initial Study/Negative Declaration**
(or Mitigated Negative Declaration, if applicable)
 - Comments and Responses to the Draft**
 - Mitigation Monitoring and Reporting Program (if using a Mitigated Negative Declaration)**
- Resolution approving the CEQA documents**
 - Adopting the Negative Declaration**
 - Making CEQA Findings**
- Notice of Determination (filed with the Governor's Office of Planning and Research)**

If project is covered under an **Environmental Impact Report (EIR)**, submit a copy of the following:

- Draft and Final EIR**
 - Comments and Responses to the Draft**
 - Mitigation Monitoring and Reporting Program (MMRP)**
- Resolution approving the CEQA documents**
 - Certifying the EIR and adopting the MMRP**
 - Making CEQA Findings**
 - Adopting a Statement of Overriding Considerations for any adverse impact(s) that cannot be avoided or fully mitigated if project is implemented**
- Notice of Determination (filed with the Governor's Office of Planning and Research)**

If EIR is a joint CEQA/National Environmental Policy Act document (EIR/Environmental Impact Statement or EIR/Environmental Assessment), submit the applicable Record of Decision and/or Finding of No Significant Impact.

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State Water Resources Control Board (State Water Board)
Clean Water State Revolving Fund Program

Evaluation Form for Environmental Review and Federal Coordination

1. **Federal Endangered Species Act:**

Does the project involve any direct effects from construction activities, or indirect effects such as growth inducement that may affect federally listed threatened or endangered species that are known, or have a potential, to occur on-site, in the surrounding area, or in the service area?

No. Discuss why the project will not impact any federally listed special status species:

Yes. Include information on federally listed species that could potentially be affected by this project and any proposed avoidance and compensation measures so that the State Water Board can initiate informal/formal consultation with the applicable federally designated agency. Document any previous ESA consultations that may have occurred with the project.

Attach project-level biological surveys, evaluations analyzing the project's direct and indirect effects on special-status species, and a current species list for the project area.

2. **National Historic Preservation Act:**

Identify the Area of Potential Effects (APE), including construction, staging areas, and depth of any excavation. (Note that the APE is three dimensional and includes all areas that may be affected by the project, including the surface area and extending below ground to the depth of any project excavations.)

Attach a current records search with maps showing all sites and surveys drawn in relation to the project area, and records of Native American consultation.

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3. Clean Air Act: Is the project subject to a State Implementation Plan (SIP) conformity determination?

No. The project is in an attainment or unclassified area.

Yes. The project is in a nonattainment area or attainment area subject to maintenance plans. Include information to indicate the nonattainment designation (e.g. moderate, serious or severe), if applicable. If estimated emissions (below) are above the federal de minimis levels, but the project is sized to meet only the needs of current population projections that are used in the approved SIP for air quality, then quantitatively indicate how the proposed capacity increase was calculated using population projections.

Air Basin Name: _____

Provide the estimated project construction and operational air emissions (in tons per year) in the chart below, and attach supporting calculations.

Attach any air quality studies that may have been done for the project.

Pollutant	Status (Attainment, Nonattainment or Unclassified)	Threshold of Significance for the Area (if applicable)	Construction Emissions (Tons/Year)	Operation Emissions (Tons/Year)
Carbon Monoxide (CO)				
Ozone (O ₃)				
Oxides of Nitrogen (NO _x)				
Particulate Matter (PM _{2.5})				
Particulate Matter (PM ₁₀)				
Reactive Organic Gases (ROG)				
Sulfur Dioxide (SO ₂)				
Volatile Organic Compounds (VOC)				

4. Coastal Zone Management Act:

Is any portion of the project site located within the coastal zone?

No. The project is not within the coastal zone.

Yes. Describe the project location with respect to coastal areas, and the status of the coastal zone permit:

Clean Water SRF Program
Environmental Compliance

5. **Farmland Protection Policy Act:**

Is any portion of the project site located on important farmland?

No. The project will not impact farmland.

Yes. Include information on the acreage that would be converted from important farmland to other uses. Indicate if any portion of the project site is located within Williamson Act control and the amount of affected acreage:

6. **Flood Plain Management:**

Is any portion of the project site located within a 100-year floodplain as depicted on a floodplain map or otherwise designated by the Federal Emergency Management Agency?

No. Provide a description of the project location with respect to streams and potential floodplains:

Yes. Describe the floodplain, and include a floodplain map and a floodplains/wetlands assessment. Describe any measures and/or project design modifications that would minimize or avoid flood damage by the project:

7. **Migratory Bird Treaty Act:**

Will the project affect protected migratory birds that are known, or have a potential, to occur on-site, in the surrounding area, or in the service area?

No.

Yes. Discuss the impacts (such as noise and vibration impacts, modification of habitat) to migratory birds that may be directly or indirectly affected by the project and mitigation measures to reduce or eliminate these impacts. Include a list of all migratory birds that could occur where the project is located:

Clean Water SRF Program
Environmental Compliance

8. Protection of Wetlands:

Does any portion of the project area contain areas that should be evaluated for wetland delineation or require a permit from the U.S. Army Corps of Engineers?

No. Provide the basis for such a determination:

Yes. Describe the impacts to wetlands, potential wetland areas, and other surface waters, and the avoidance, minimization, and mitigation measures to reduce such impacts. Provide the status of the permit and information on permit requirements:

9. Wild and Scenic Rivers Act:

Is any portion of the project located within a wild and scenic river?

No. The project will not impact a wild and scenic river.

Yes. Identify the wild and scenic river watershed and project location relative to the affected wild and scenic river:

Identify watershed where the project is located: _____

10. Source Water Protection:

Is the project located in an area designated by the U.S. Environmental Protection Agency, Region 9, as a Sole Source Aquifer?

No. The project is not within the boundaries of a sole source aquifer.

Yes. Identify the aquifer (e.g., Santa Margarita Aquifer, Scott's Valley, the Fresno County Aquifer, the Campo/Cottonwood Creek Aquifer or the Ocotillo-Coyote Wells Aquifer):

Letter 3: State Water Resources Control Board Division of Financial Assistance

Response to Comment 3-1

Comment noted. As individual project's are proposed to be implemented under the Master Plan, funding sources will be evaluated. It is possible that the City could seek Clean Water State Revolving Fund (CWSRF) financing for these future projects. As described on pages 1-1 to 1-2 of the Draft EIR, this EIR is a programmatic EIR. Consistent with CEQA, the Program EIR assesses the documents and broad environmental impacts of the Master Plan, and specific future projects will be examined in light of the EIR's programmatic nature to determine whether additional subsequent environmental review would be required. Therefore, as individual projects are implemented under the proposed Master Plan, and if CWSRF financing is pursued, the City will prepare the appropriate subsequent environmental review, which would include preparation of a CEQA-Plus document consistent with CWSRF program requirements.

Response to Comment 3-2

As noted in the legend for Table 4.5-2 on pages 4.5-9 through 4.5-13 of the Draft EIR, the notation for the California Horned Lark and San Joaquin Pocket Mouse indicates that neither species is currently a federally or state listed species.

Both the California Horned Lark and the San Joaquin Pocket Mouse are California Species of Special Concern (see pages 4.5-16 and 4.5-17, respectively). As discussed on page 4.5-22, California Species of Special Concern do not have the same legal protection as listed species or fully protected species but they may be added to official lists in the future. Under CDFG policy, California Species of Special Concern are not subject to the same consultation requirements as listed endangered, rare, or threatened species, but the agency encourages informal consultation for these species that may become officially listed before completion of the CEQA process. The Draft EIR does include an analysis of potential impacts to both these species. See Impact 4.5.2 on page 4.5-28 (California Horned Lark) and Impact 4.5.7 on page 4.5-33 (San Joaquin Pocket Mouse).

Response to Comment 3-3

If necessary, mosquito control for proposed groundwater basins would be managed by the Fresno Mosquito and Vector District.



California Regional Water Quality Control Board Central Valley Region

Katherine Hart, Chair



Linda S. Adams
Acting Secretary for
Environmental Protection

1685 E Street, Fresno, California 93706
(559) 445-5116 • Fax (559) 445-5910
<http://www.waterboards.ca.gov/centralvalley>

Edmund G. Brown Jr.
Governor

12 May 2011

Mr. Kevin Norgaard
Fresno Department of Water Utilities
5607 West Jensen Avenue
Fresno, CA 93706

DRAFT ENVIRONMENTAL IMPACT REPORT, CITY OF FRESNO RECYCLED WATER MASTER PLAN, FRESNO COUNTY (SCH NO. 2010051015)

We appreciate the opportunity to comment on the subject Draft Environmental Impact Report (Draft EIR) and commend the City of Fresno on its proactive efforts to increase the amount of water it recycles. We believe these efforts are consistent with both State Water Resources Control Board (State Board) and Central Valley Regional Water Quality Control Board (Central Valley Water Board) policies on this issue. However, we do have some concerns regarding the Draft EIR. In general, the Draft EIR states that the proposed discharges will have little or no impact on water quality but does not include appropriate data or analyses to support such conclusions. Therefore, we cannot at this time as a responsible agency under CEQA determine whether the proposed project will have a significant impact on water quality or whether mitigation measures proposed are adequate. Our specific concerns are described in more detail below, as are some recommendations for corrections to descriptions and terminology used in the Draft EIR.

4-1

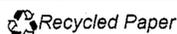
As you are aware, the Central Valley Water Board commented on the City's 10 May 2010 Initial Study and Notice of Preparation for the City Of Fresno Recycled Water Master Plan. Central to those comments was the suggestion that the City include in the Draft EIR an antidegradation analysis demonstrating that the proposed project would meet the requirements of State Water Resources Control Board Resolution 68-16, commonly referred to as the State Antidegradation Policy. The City responded by including a discussion in the Draft EIR of the Antidegradation Policy requirements and stating that an antidegradation analysis will be completed before construction of the proposed project. The purpose of an antidegradation analysis is to identify and quantify impacts to surface and groundwater and demonstrate whether such impacts will be consistent with applicable public plans and policies. Therefore, we believe that the antidegradation analysis belongs in the EIR. Such an analysis is necessary to identify and quantify the project's potential impacts on water quality and support the Draft EIR's conclusions that the project discharges will be mitigated to a less than significant level.

4-2

To wit, groundwater beneath the City of Fresno is derived largely from the Sierra Nevada and is of high quality with respect to salinity (EC and TDS). As water, groundwater in particular, moves west across the San Joaquin Valley, it generally becomes more mineralized. The City's project by definition will result in the application of higher salinity recycled water back to the east over

4-3

California Environmental Protection Agency



areas now receiving lower salinity irrigation water. Resulting salinity impacts may be offset to an extent by less pumping of supply wells, but still one would expect accelerated degradation with salts of groundwater underlying recycled water application areas. These application areas also supply part of the City's drinking water supply. Central Valley Water Board staff cannot assess the significance of these impacts or the appropriateness of proposed mitigation measures until the level of degradation is quantified and demonstrated to be consistent with the requirements of Resolution 68-16. Board staff believes the City has the data available to quantify potential impacts and that these impacts and mitigation measures should be described in the Draft EIR.

4-3
Con't

4-4

Draft EIR page ES-2 states that the project will implement a recycled water treatment and distribution system that will protect and improve groundwater quality by reducing the use of percolation ponds currently used as part of the Regional Wastewater Reclamation Facility's (RWRF) effluent disposal processes. Draft EIR page 3-7 mirrors the language of page ES-2. Reducing the effluent loading on the percolation ponds may result in some water quality improvements under and near the RWRF. However, as described above, the application of higher salinity recycled water back to the east over areas now receiving lower salinity irrigation water will likely accelerate degradation of better quality upgradient groundwater with salts. Thus the project has the potential to spread an existing problem upgradient to an area of better quality groundwater. This impact is neither disclosed nor discussed in the Draft EIR, but could be quantified and considered in an antidegradation analysis. Without such an analysis, Central Valley Water Board staff cannot concur that the benefit of improving groundwater quality near the RWRF outweighs the costs associated with any degradation of higher quality groundwater upgradient of the RWRF.

4-5

Draft EIR page 4.4-21 states:

The recycled water produced by an upgraded RWRF (Alternative 1) and new SRWFs (Alternative 2) would be of higher quality than that produced under existing (undisinfected secondary level of treatment) conditions.

Where tertiary treated wastewater would replace the use of secondary treated wastewater under existing conditions, this would result in a net benefit to water quality, and a net positive change to water quality in the underlying aquifer, for existing recharge activities.

4-6

Tertiary effluent is usually of better quality than secondary effluent with respect to pathogens and organic constituents. The same cannot necessarily be said for salts. Whether tertiary effluent is of better quality than secondary effluent with respect to salts depends on the proposed treatment and disinfection systems employed. It is not uncommon for tertiary effluents to be higher in salinity than secondary effluents due to the addition of flocculation chemicals and disinfectants. Thus the statement that tertiary effluent will result in improvements to the quality of underlying groundwater should be substantiated by data included in an antidegradation analysis.

Text on Draft EIR page 4.4-21 refers to the "...RWRF's NPDES permit..." Existing Waste Discharge Requirements Order No. 5-01-254 is not a National Pollutant Discharge Elimination System (NPDES) Permit. Similarly, text on Draft EIR page 4.4-22 refers to "The SWRCB's NPDES General Permit for Landscape Irrigation Uses of Municipal Recycled Water..." The State Board's General Permit is not an NPDES Permit. These references should be corrected.

4-7

Mr. Kevin Norgaard

- 3 -

12 May 2011

Draft EIR page 4.4-11 states:

A basin plan has been adopted for the Sacramento and San Joaquin River Basin ("Basin Plan," CVRWQCB, 2009), which covers all of the project area.

The majority of the discharge area described in the Draft EIR is subject to the requirements of the *Water Quality Control Plan for the Tulare Lake Basin, revised February 2004* (Tulare Lake Basin Plan), not the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins, revised September 2009* (Sacramento/San Joaquin Basin Plan). Generally, only surface water discharges to Fresno Irrigation District canals that outfall directly to the San Joaquin River would be subject to the surface water requirements of the Sacramento/San Joaquin Basin Plan. All other discharges would be subject to the requirements of the Tulare Lake Basin Plan. The Draft EIR should be modified as appropriate.

4-8

Draft EIR Page 4.4-10 refers to the requirements of State Board Resolution 68-16 as the State's "Nondegradation Policy." The policy is properly referred to as the State's Antidegradation Policy, not "Nondegradation Policy." The reference should be corrected.

4-9

If you have any questions regarding this matter, please call Denise Soria at (559) 444-2488 or via email at dsoria@waterboards.ca.gov.



W. DALE HARVEY
Senior Engineer
RCE No. 55628

cc: Ms. Betsy Lichti, California Department of Public Health, Fresno

Letter 4: Central Valley Regional Water Quality Control Board

Response to Comment 4-1

The City acknowledges the Central Valley Regional Water Quality Control Board's (CVRWQCB) concern regarding the protection of water quality within its jurisdiction. However, as discussed in response to subsequent comments in this letter, the level of detail provided in support of the Draft EIR is adequate for a programmatic level analysis under CEQA. For additional discussion, see Responses to Comments 4-2 through 4-6.

Response to Comment 4-2

The City understands the purpose of an antidegradation analysis and the role of such an analysis in regards to the protection of water quality within the jurisdiction of the Regional Board. However, as described on pages 1-1 to 1-2 of the Draft EIR, the EIR is a programmatic EIR. Consistent with CEQA, the Program EIR assesses the documents and broad environmental impacts of the Master Plan, and specific future projects will be examined in light of the EIR's programmatic nature to determine whether additional subsequent environmental review would be required. Such subsequent environmental review would concentrate on environmental issues specific to individual Master Plan projects that were not fully evaluated in the program EIR. As a programmatic EIR, the Draft EIR provides an analysis of the order and magnitude of potential impacts that would result from implementation of the proposed Recycled Water Master Plan, and applies mitigation measures to reduce the intensity of those impacts as relevant. This programmatic EIR does not contain, and is not required to contain under CEQA, an exhaustive evaluation of all potential impacts that would occur as a result of implementing the proposed Master Plan.

The City recognizes that, prior to installation of new recycled water production capacity and installation of recycled water distribution/application infrastructure, completion of an antidegradation analysis may be required, pursuant to Resolution No. 68-16, as cited in the comment. As discussed in greater detail Section 4.4.3 of the Draft EIR (starting on page 4.4-6), state and Federal antidegradation policies require that (1) existing instream uses and the water quality necessary to protect those uses shall be maintained and protected; (2) where existing water quality is better than required under existing water quality control plans, such quality is to be maintained to the extent that any change would not unreasonably affect beneficial uses of such water; and (3) any activity that produces waste or increases volume or concentration of waste discharged to high quality waters would be required to meet waste discharge requirements that would prevent pollution or nuisance and ensure that the highest water quality consistent with the maximum benefit to the people of California would be maintained.

However, due to the programmatic nature of this EIR, completion of an antidegradation analysis in support of this programmatic EIR is not required under CEQA, and due to lack of available project-specific information, cannot be meaningfully completed at this time. As described in the

Draft EIR, many aspects of the proposed project have not yet been defined or determined. These include, but are not limited to, specific wastewater treatment processes and treatment types; concentrations of disinfection byproducts, salts, nutrients, and other potential water quality pollutants; and precise locations and uses for recycled water application. For instance, as of the publication date of this document, the City had not yet determined several key characteristics for the proposed RWRf and recharge facility upgrades. These include but are not limited to:

1. Type of treatment that would be employed at the RWRf (membrane bioreactor, tertiary filtration and disinfection, disinfection via chlorine, ultraviolet radiation, and/or other possible treatment options);
2. Estimates of the concentrations of key water quality constituents that would be contained in the recycled water;
3. Volume of recycled of water allocated to each potential beneficial use; and
4. Location, design, and schematics for recycled water distribution and application facilities.

Without these key pieces of information, preparation of an antidegradation analysis would be speculative. Additionally, acquisition of coverage under a general or individual discharge permit or other recycled water application/use permit would not be required by the CVRWQCB at the time of certification of this programmatic EIR or at the time of approval of the proposed project, but would instead be tied to installation of a physical project that would result in a discharge or other new or expanded application of recycled water.

In lieu of preparing an antidegradation analysis in support of this programmatic EIR, the City expects to prepare an antidegradation analysis, to the extent required by the Regional Board, concurrent with a separate project level environmental evaluation of the proposed RWRf facility upgrade, pursuant to CEQA. The antidegradation analysis and subsequent environmental evaluation completed in support of the RWRf would evaluate the potential for all recycled water generated by the RWRf to degrade water quality within the project area (that is, within the project area for the present programmatic EIR). Completing the antidegradation analysis concurrent with the environmental documentation for the RWRf will ensure that sufficient facility design and water quality data are available to complete the antidegradation analysis. Completing the antidegradation analysis concurrent with RWRf environmental documentation will also enable a programmatic level environmental review of all proposed recycled water discharges, in order to evaluate the potential for a cumulative impact to water quality.

The City expects to complete additional environmental documentation in support of the RWRf as required by CEQA, and would apply for required discharge permits prior to initiation of operations at the upgraded RWRf. Without completion of upgrades at the RWRf, no recycled water capacity would be available, and the proposed facilities and recycled water uses discussed in the proposed Master Plan could not be implemented. Therefore, preparation of an antidegradation analysis will be completed prior to groundbreaking for the tertiary upgrade of the RWRf and associated environmental documentation, but is not warranted in support of this programmatic EIR.

Response to Comment 4-3

The City acknowledges the CVRWQCB's concern regarding salts. However, the volume of recycled water applications, salt loadings contained in the recycled water that would be applied, the amount of recycled water that would be applied to each of the uses identified in the Draft EIR, and specific locations where recycled water would be applied, have not yet been identified within the scope of this programmatic level EIR. Therefore a reliable and accurate analysis evaluating the fine scale changes in salt distribution within the underlying groundwater basin is not yet possible, and would instead be included in subsequent project level environmental analysis. See Response to Comment 4-5.

Response to Comment 4-4

The nature and magnitude of potential water quality impacts have been evaluated at the programmatic level within the Draft EIR I Section 4.4 Hydrology and Water Quality, including potential for degradation of water quality that could result from increased use of recycled water. These impacts are evaluated on pages 4.4-21, 4.4-22, 4.4-25, and 4.4-26 of the Draft EIR. Additional project level analysis is warranted under CEQA and is anticipated by the City, and would address the Regional Board's concerns regarding antidegradation. For additional discussion, see Responses to Comments 4-2, 4-3 and 4-5.

Response to Comment 4-5

Potential for salt loading associated with implementation of the proposed project is discussed in the Draft EIR under Impact 4.4.2 on pages 4.4-21 to 4.4-22, and under Impact 4.4.6, on pages 4.4-25 and 4.4-26. The Draft EIR acknowledges, on page 4.4-25, that the use of recycled water could result in higher application rates of water pollutants, including salts, for irrigation and other purposes, within the project area. However, any increases in the application of salts associated with the use of recycled water for irrigation or other purposes would be directly offset by concurrent reductions in salt loading at the existing infiltration basins associated with the RWTF. Therefore no net change in salt loading within the groundwater basin underlying the project area would occur. The project would not alter existing salt loading rates within the basin.

The City recognizes the Regional Board's concern regarding fine scale changes in the distribution and application of salt-containing recycled water. However, due to the programmatic nature of the EIR, the locations of specific facilities and features that would be utilized for recycled water distribution and application are not yet known. For instance, it is not yet known how much recycled water would be allocated to each potential beneficial use identified within the proposed Master Plan, nor have volumes of recycled water (and therefore salt loads) been allocated to specific areas within the project area. These data are not yet available, and would be variable based on localized demand, available infrastructure, and operational parameters that remain unknown at present. Therefore, within the programmatic framework of this EIR, it is not possible to meaningfully evaluate fine scale the effects of applying recycled water within the project area at this time. Such analysis would be provided, as relevant, prior to the installation of physical facilities. For additional discussion of the programmatic nature of this EIR and the timing and

nature of subsequent project level review that would be required under CEQA, see Response to Comment 4-1.

Response to Comment 4-6

The City acknowledges that completion of an antidegradation analysis would substantiate the analysis provided within the EIR regarding potential impacts to water quality. However, as discussed in Response to Comment 4-2, completion of an antidegradation analysis is not warranted at this time in support of this programmatic EIR, and could not adequately be completed given the level of information that is currently available regarding project-level components and operations. As also discussed in Response to Comment 4-2, the type of tertiary treatment, and therefore the types of chemicals used during the treatment process at the upgraded RWRf has not yet been determined. However, subsequent environmental documentation in support of an upgraded RWRf would evaluate the mode of tertiary treatment that would be employed in support of the project, including an antidegradation analysis.

The comment is correct that, generally speaking, some types of tertiary treatment processes can add a small amount of additional dissolved solids/salts to effluent water. However, in consideration of the total salt load contained in the incoming wastewater, the effect of added chemical flocculants and chlorine or other disinfectants on water quality is not yet known, because the City has not yet identified which treatment process options may be utilized at the upgraded RWRf. Potential for chemical flocculants and other additives to increase the TDS of recycled water would be evaluated under subsequent, project specific environmental documentation. Therefore, no additional analysis is warranted with respect to this programmatic EIR.

Response to Comment 4-7

Comment noted. The third paragraph under Impact 4.4.2 on page 4.4-21 of the Draft EIR is revised to read as follows:

There could be increased agricultural reuse of undisinfected secondary effluent from the RWRf under two of the five Agricultural Reuse options for the proposed project. If improperly managed, the increased agricultural application of undisinfected secondary treatment water could result in water quality degradation. The existing RWRf's waste discharge requirements (WDRs) NPDES permit allow for discharge to agricultural fields for restricted irrigation uses. Permit conditions WDR requirements specify measures to ensure the protection of water quality at the agricultural reuse areas. These Conditions may include, but would not be limited to, restriction of discharge to agronomic application rates for water (total volume), and nutrients; and maximum pollutant load restrictions for pathogens, salts, heavy metals, and various other pollutants. Increases in agricultural use, or changes in the place of use for undisinfected secondary effluent from the RWRf would requires acquisition of new Water Reclamation Requirements (WRRs) by private landowners a revised NPDES permit, containing an updated effluent discharge rate and/or place of use.

The first sentence of the second paragraph on page 4.4-22 of the Draft EIR is revised to read as follows:

The SWRCB's ~~NPDES~~ General Permit for Landscape Irrigation Uses of Municipal Recycled Water would also be applicable to the project, insofar as project water would be used for landscape irrigation purposes.

Response to Comment 4-8

Based on conversations with Fresno Irrigation District (FID), potential surface water discharges associated with the project that would be conveyed along some FID infrastructure could potentially be discharged to the San Joaquin River Basin. Therefore, the Sacramento and San Joaquin River Basin Plan could be relevant to the project for some reaches of the FID canal system. However, given the programmatic nature of the EIR, that the project level and design details of all facilities and operation schedules are not yet known, and that the Tulare Lake Basin Plan is relevant for agricultural and urban irrigation within the project area, pages 4.4-11 and 4.4-12 of the Draft EIR are updated to also reference the Tulare Lake Basin Plan, as requested by the commenter.

The second through third paragraphs under *Basin Plans and Water Quality Objectives* on pages 4.4-11 and 4.4-12 of the Draft EIR are revised to read as follows:

Basin plans provide the technical basis for determining waste discharge requirements and taking regulatory enforcement actions if deemed necessary. The project area is located within the jurisdiction of the CVRWQCB Tulare Lake Basin Basin Plan (CVRWQCB, 2004). Some potential project alternatives that involve discharging to the San Joaquin River would be within the jurisdiction of the Basin Plan for the Sacramento and San Joaquin River Basins (CVRWQCB, 2009). ~~A basin plan has been adopted for the Sacramento and San Joaquin River Basin (“Basin Plan;” CVRWQCB, 2009), which covers all of the project area.~~ Together, the two Basin Plans cover all of the potential project areas. The Basin Plans sets water quality objectives for the surface waters in its region for the following substances and parameters: ammonia, bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, radioactivity, salinity, sediment, settleable material, suspended material, taste and odor, temperature, toxicity, turbidity, and pesticides. For groundwater, water quality objectives applicable to all groundwater have been set for bacteria, chemical constituents, radioactivity, salinity, taste, odors, and toxicity (CVRWQCB, 2009; CVRWQCB 2004).

Specific objectives for concentrations of chemical constituents are also applied to bodies of water based on their designated beneficial uses. The Sacramento and San Joaquin River Basin Plan indicates the following beneficial uses for the San Joaquin River ~~(as discussed elsewhere in this section, surface drainages and other stormwater conveyance facilities in the project area discharge into facilities that end in groundwater infiltration basins, or the San Joaquin River)~~ in the vicinity of the project area, as shown in **Table 4.4-2**.

Additionally, page 8-2 of the Draft EIR has been updated as follows:

4.4 Hydrology and Water Quality

California Department of Water Resources (DWR), 2006. California's Groundwater Bulletin 118: Tulare Lake Hydrologic Region, San Joaquin Valley Groundwater Basin, Kings Subbasin. Last updated on January 20, 2006.

CVRWQCB, 2004. Water Quality Control Plan (Basin Plan) for the Tulare Lake Basin, Second Edition. Revised January, 2004 with Approved Amendments.

CVRWQCB, 2009. Water Quality Control Plan (Basin Plan) for the ~~California Regional Water Quality Control Board, Central Valley Region. Sacramento and San Joaquin River Basins~~, Fourth Edition. Revised September, 2009 with Approved Amendments.

Response to Comment 4-9

Comment noted. The first paragraph on page 4.4-10 of the Draft EIR is revised to read as follows:

California State ~~Nondegradation~~ Antidegradation Policy

In 1968, as required under the federal antidegradation policy described above, the SWRCB adopted an antidegradation ~~nondegradation~~ policy aimed at maintaining high quality for waters in California. The antidegradation ~~nondegradation~~ policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state...



San Joaquin Valley Air Pollution Control District



Fax Transmittal

1990 E. Gettysburg Avenue
Fresno, California 93726-0244
Finance Phone (559) 230-6020
Personnel Phone (559) 230-6010

Date : May 10, 2011
To : Kevin Norgaard **Fax Number :** (559) 498-1700
From : Diane Gaitan on behalf of Mark Montelongo **Number of pages (Includes cover sheet):** 3

Description :

- | | |
|--|---|
| <input type="checkbox"/> Per Your Request | <input type="checkbox"/> For Your Information |
| <input type="checkbox"/> Per Our Conversation | <input type="checkbox"/> For Your Approval |
| <input type="checkbox"/> Take Appropriate Action | <input type="checkbox"/> Review & Comment |
| <input type="checkbox"/> Please Answer | <input type="checkbox"/> Review & Return |
| <input type="checkbox"/> Original transmittal will follow via mail | |

Remarks / Response :



May 9, 2011

Kevin Norgaard, Chief of Technical Services
Department of Water Utilities, Wastewater Management Division
Fresno-Clovis Regional Water Reclamation Facility
5607 West Jensen Avenue
Fresno, CA 93706

Project: Environmental Impact Report – City of Fresno Recycled Water Master Plan Program

District CEQA Reference No: 20100363

Dear Mr. Norgaard:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Environmental Impact Report (EIR) for the proposed Recycled Water Master Plan, which includes a plan for the installation and operation of treatment, storage and distribution infrastructure to serve the proposed project area with recycled water. The project is located in Fresno, CA. The District offers the following comments:

District Comments

- 1) The EIR identifies construction related activities associated with the development of the project as significant and unavoidable. To assist project proponents and Lead Agencies in mitigating project specific impacts, the District provides an opportunity to participate in a Voluntary Emission Reduction Agreement (VERA). Project proponents may enter into a voluntary VERA with the District to reduce project specific related impacts on air quality to a less than significant level. A VERA is an instrument by which the project proponent provides monies to the District to fund emission reduction projects that achieve the level of mitigation required by the lead agency. A VERA is implemented through the District's Strategy and Incentive Program. Information concerning participation in a VERA can be obtained by calling (559) 230-6000 and asking to speak to a District CEQA staff member.

5-1

Seyed Sadroddin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-8475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93728-0244
Tel: (559) 230-6000 FAX: (559) 230-8061

Southern Region
34848 Fryover Court
Bakersfield, CA 93308-8725
Tel: 661-392-5500 FAX: 661-392-5585

- 2) Based on information provided to the District, the proposed project may equal or exceed 9,000 square feet of space. Therefore, the District concludes that the proposed project may be subject to District Rule 9510 (Indirect Source Review).

District Rule 9510 is intended to mitigate a project's impact on air quality through project design elements or by payment of applicable off-site mitigation fees. Any applicant subject to District Rule 9510 is required to submit an Air Impact Assessment (AIA) application to the District no later than applying for final discretionary approval, and to pay any applicable off-site mitigation fees before issuance of the first building permit. If approval of the subject project constitutes the last discretionary approval by your agency, the District recommends that demonstration of compliance with District Rule 9510, including payment of all applicable fees before issuance of the first building permit, be made a condition of project approval. Information about how to comply with District Rule 9510 can be found online at: <http://www.valleyair.org/ISR/ISRHome.htm>.

5-2

- 3) The proposed project may require District permits. Prior to the start of construction the project proponent should contact the District's Small Business Assistance Office at (559) 230-5888 to determine if an Authority to Construct (ATC) is required.

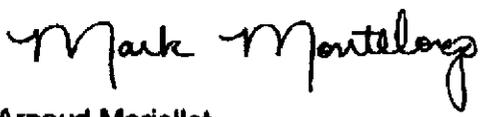
5-3

The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance Office at (559) 230-5888. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm.

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 Mark Montelongo at (559) 230-5905.

Sincerely,

David Warner
Director of Permit Services



for: Arnaud Marjollet
Permit Services Manager

DW:mm

Letter 5: San Joaquin Valley Air Pollution Control District

Response to Comment 5-1

Comment noted. The City appreciates the SJVAPCD's information regarding participation in a Voluntary Emission Reduction Agreement (VERA) to further reduce significant and unavoidable construction air emissions and will contact the SJVAPCD to obtain information on participating in VERA.

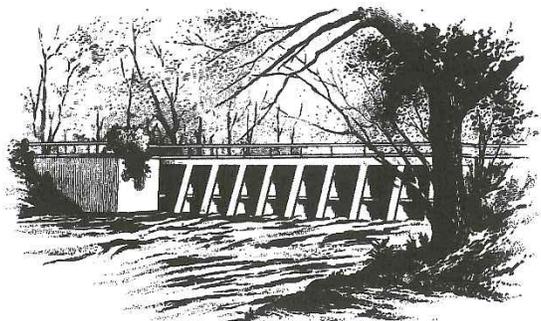
Response to Comment 5-2

Comment noted. As discussed on page 4.7-18 of the Draft EIR, it is likely that construction of the Master Plan projects would qualify as development projects under Rule 9510. As identified in Mitigation Measure 4.7.1b on page 4.7-25, implementation plans prepared by the City for the Master Plan shall comply with Rule 9510.

Response to Comment 5-3

Comment noted. As projects are implemented under the Master Plan, the City of Fresno will apply for and comply with applicable SJVAPCD permits.

E-FILE



OFFICE OF
FRESNO
IRRIGATION DISTRICT

TELEPHONE (559) 233-7161
FAX (559) 233-8227
2907 S. MAPLE AVENUE
FRESNO, CALIFORNIA 93725-2218

YOUR MOST VALUABLE RESOURCE - WATER

May 11, 2011

Mr. Kevin Norgaard
Wastewater Management Division
Fresno-Clovis Regional Water Reclamation Facility
5607 West Jensen Avenue
Fresno, CA 93706

Re: Draft Environmental Impact Report (EIR)
City of Fresno Recycled Water Master Plan
FID Facilities: Lower Dry Creek No. 77, Houghton No. 78, and various others

Dear Mr. Norgaard:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Report (DEIR) for the City of Fresno's Recycled Water Master Plan (RWMP). The RWMP identifies potential recycled water use opportunities within the City and its Sphere Of Influence (SOI), including Fresno County lands located in or adjacent to the SOI. In addition to the RWMP, the City intends to consider the adoption of a "Recycled Water Ordinance" to assist the City in implementing the Recycled Water Program set forth in the proposed RWMP. This report is an important document towards managing the City's resources and planning for the future growth of the City in a responsible manner. Therefore, it is imperative that this document be as accurate, factual, and realistic as possible.

The proposed project involves planning and phasing of a regional recycled water distribution system that extends from the existing Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF), located southwest of the City for reuse as recycled water or groundwater recharge. The RWMP includes a plan for the installation and operations of treatment, storage, and distribution infrastructure to serve the proposed project area with recycled water that would be implemented in a phased manner based on technical, funding, partnering, and other factors. The RWMP would inform the City's decision process in selecting recycled water projects that include the expansion of the City's recycled water system to reduce the use of percolation ponds that currently

**BOARD OF
DIRECTORS**

President: JEFF NEELY, Vice-President: RYAN JACOBSEN
JEFF BOSWELL, STEVE BALLS, GEORGE PORTER, General Manager GARY R. SERRATO

Mr. Kevin Norgaard
Re: DEIR – Recycled Water Master Plan
May 11, 2011
Page 2 of 3

handle effluent discharge, to offset potable water use, and to enhance the sustainability of the water supply.

The overall objective of the RWMP is to review a range of options for implementing recycled water use, lessening discharge at the RWRF, and offsetting potable water use within the City. The RWMP examines urban reuse, agricultural reuse, groundwater recharge, and institutional exchanges of recycled water for potable water. The RWMP was developed by evaluating these opportunities for recycled water use, and connecting the potential users to existing and planned facilities with proposed recycled water distribution lines.

As stated in FID's letter dated June 10, 2010 (attached), it is evident that the development of this plan has been a significant undertaking by the City and we applaud the City's effort to develop this plan and memorialize the goals needed to be achieved in order for the City to responsibly plan growth. We are also supportive of the City's efforts to keep the water that has created the groundwater mound underneath the existing RWRF to be kept within the City and FID service areas instead of feeding outside groundwater basins.

It appears that the City has addressed our comments listed in the June 10 letter and offers several more comments listed below for your consideration:

1. Page 2.4 under "Agricultural Reuse Exchange", it mentions increasing existing discharges into FID's canal system. FID is open to increased discharges however the existing agreements between both Agencies would need to be renegotiated. The agreement would need to address many of the same items already included in the existing agreement, but may include several new items. Water quality is of particular concern and FID will need to evaluate the difference in water quality between surface supplies and recycled supplies and potential impacts of taking additional recycled water.
2. Page 4.4-1 under "Surface Water Resources":
 - a. There are several misspellings and/or incorrect identifications, which include: 1) Dry Creek should read Big Dry Creek, 2) Mill Creek should read Mill Canal, 3) Gourd Canal should read Gould Canal. On Figure 4.4-1, Francher Creek Canal should read Fancher Creek Canal.
 - b. Under this section, there are six waterways that are mentioned, including two creeks and four canals. It is unclear why these six waterways are mentioned, when there are several other creeks and larger canals (i.e. Dry Creek Canal, Lower Dry Creek Canal, Houghton Canal, etc.) which may be worth mentioning. FID will provide the City with those facilities upon request.
 - c. This section mentions several creeks and canals "...eventually flow into the San Joaquin River and the Sacramento-San Joaquin Delta". This

6-1

6-2

6-3

6-4

Mr. Kevin Norgaard
Re: DEIR – Recycled Water Master Plan
May 11, 2011
Page 3 of 3

comment is misleading and FID suggests revising the comment to state that some of the canals and creeks are hydraulically connected to the San Joaquin River. Furthermore, not all of the creeks and canals within FID are hydraulically connected to the San Joaquin River (i.e. Fancher Creek Canal, Lower Dry Creek, Houghton, etc.)

↑
6-4
Con't

3. Page 4.4-2 under “Flooding”, Mill Creek should be referred to as Mill Canal. 6-5
4. Page 4.4-1 and 4.4-2 under “Kings River”, states “The river, via FID infrastructure, provides water to Fresno and its vicinity for groundwater recharge and other beneficial uses”. It may be helpful to expand on the beneficial uses or reword the sentence to read that the majority of FID’s water is diverted to agricultural users, with the remainder going to recharge basins and two surface water treatment plants. You may also refer to Page 4.4-14 which includes similar information regarding FID’s customers, diversions, size, etc. 6-6
5. Page 4.4-5 under “Groundwater Recharge”, it may be helpful to mention that there are approximately 150 basins operated by the Fresno Metropolitan Flood Control District (FMFCD) which utilize surface water for groundwater recharge. In addition to the City’s Leaky Acres, FID and the City of Clovis also have several recharge facilities in the urban areas. 6-7
6. The City has not yet met with FID as recommended in the June 10 letter and urges the City to do so prior to finalizing the Draft EIR. 6-8

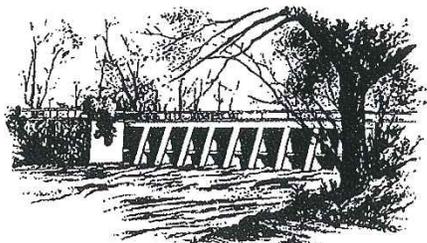
We appreciate the City staff’s efforts and believe that this analysis is long overdue. We look forward to receiving responses to our comments. Should you have any questions, please do not hesitate to contact me at 559-233-7161 extension 318 or bstretch@fresnoirrigation.com.

Sincerely,



William R. Stretch, P.E.
Chief Engineer

COPY



YOUR MOST VALUABLE RESOURCE - WATER

OFFICE OF
FRESNO
IRRIGATION DISTRICT

TELEPHONE (559) 233-7161
FAX (559) 233-8227
2907 S. MAPLE AVENUE
FRESNO, CALIFORNIA 93725-2218

June 10, 2010

Mr. Kevin Norgaard
Wastewater Management Division
Fresno-Clovis Regional Water Reclamation Facility
5607 West Jensen Avenue
Fresno, CA 93706

Re: Notice of Preparation and Initial Study
City of Fresno Recycled Water Master Plan and Recycled Water Ordinance

Dear Mr. Norgaard:

Thank you for the opportunity to review and comment on the Notice of Preparation and Initial Study (NOP/IS) for the City's Recycled Water Master Plan (RWMP) and Recycled Water Ordinance (RWO). This report is an important document towards managing the City's resources and planning for the future growth of the City in a responsible manner. Therefore, it is imperative that this document be as accurate, factual, and realistic as possible.

The proposed project involves planning and phasing of a regional recycled water distribution system that extends from the existing Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF), located southwest of the City, and includes conveyance pipelines, pump stations, recharge basins, and pressure regulating stations.

The overall objective of the RWMP is to supply recycled water to meet the demands of existing and future customers through buildout of the General Plan in 2025. The objective of the RWO is to establish criteria for required and voluntary use of recycled water for approved uses and to establish requirements for the installation of recycled water infrastructure within developing areas.

It is evident that the development of this plan has been a significant undertaking by the City. We applaud the City's effort to develop this plan and memorialize the goals needed to be achieved in order for the City to responsibly plan growth. We are supportive of the City's direction to balance the groundwater levels under the City's sphere-of-influence and encourage the City to vigorously implement the plan so that it can successfully achieve its goals. We are also supportive of the City's efforts to keep the water that has created the groundwater mound underneath the existing RWRF to be kept within the City and FID service areas instead of feeding outside groundwater basins.

Our comments on the subject plan are as follows:

BOARD OF DIRECTORS President JEFFREY G. BOSWELL, Vice-President JEFF NEELY
STEVE BALLS, RYAN JACOBSEN, GEORGE PORTER, General Manager GARY R. SERRATO

Mr. Kevin Noogaard
Re: NOP/IS – Recycled Water Master Plan
June 10, 2010
Page 2 of 2

General – The City currently has an agreement with the Fresno Irrigation District (FID) known as the *Exchange of Recycled Water Agreement* recorded on June 24, 1974. The agreement is very important and pertinent to the City's plans. The NOP/IS does mention it in several locations and it appears that the City's plan will adhere to the requirements outlined in the agreement. FID has met with City staff on a few occasions to briefly discuss the City's proposed plan, but very few specifics were discussed. FID recommends that the City meet with FID soon to discuss the alternatives mentioned in the RWMP and RWO as they relate to FID's concerns in the near future. Also for your information, please note that the agreement *Cooperative Agreement Between Fresno Irrigation District and City of Fresno for Water Utilization and Conveyance* dated May 25, 1976 has sections pertinent to this topic.

Page 2-7:

- The first paragraph mentions a proposed recycled water distribution system throughout the City of Fresno as illustrated in Figure 2-3. FID has many canals (earthen channel, concrete lined channels, and pipeline) that could be impacted by the City's proposed infrastructure. FID must be an integral part of the design and plan review process to help address these issues as well as others. In most cases, FID has an exclusive easement and any approved encroachment will require an agreement.
- The fourth paragraph mentions expanding pumping of percolated effluent. Currently percolated effluent is pumped into two FID canals which is then delivered to agriculture users. Please clarify if the proposed expanded pumping will be into FID canals or to other users.

Page 2-11:

- The second bullet point regarding agencies that will be impacted by temporary right-of-way borings should include FID.

We appreciate the City staff's efforts and believe that this analysis is long overdue. We look forward to receiving responses to our comments. Should you have any questions, please do not hesitate to contact me at 559-233-7161 extension 318 or bstretch@fresnoirrigation.com.

Sincerely,



William R. Stretch, P.E.
Chief Engineer

cc: Gary R. Serrato & Laurence Kimura, Fresno Irrigation District



Department of Public Utilities

Wastewater Management Division
5607 West Jensen Avenue
Fresno, California 93706-9458
559-621-5100 – FAX 559-498-1700
www.fresno.gov



Providing Life's Essential Services

March 28, 2011

Notice of Availability Recipient

Project : City of Fresno Recycled Water Master Plan
Subject: Notice of Availability for the Environmental Impact Report

RECEIVED
MAR 29 2011

BY:

Dear Mr/Ms:

The City of Fresno is in the midst of the tasks necessary to complete the California Environmental Quality Act requirements for the aforementioned project. This memo and "Notice of Availability" is being distributed per the Planning and Development Departments recommendations.

Please see the attached.

Sincerely,
CITY OF FRESNO

Kevin Norgaard
Supervising Professional Engineer

cc.
Kevin Norgaard – City of Fresno, DPU-Wastewater Division
Mary Boyajian – City of Fresno, DPU-Wastewater Division

FILED

MAR 28 2011

FRESNO COUNTY CLERK

By

Recording Requested by:
City of Fresno Wastewater Management Division
No Fee – Govt. Code Sections
6103 and 27383

When Recorded Mail To:
City of Fresno
City Clerk's office Rm 2133
Fresno, CA 93721-3603

NOTICE OF AVAILABILITY

Subject: Notice of Availability, City of Fresno Recycled Water Master Plan Program Environmental Impact Report

Project Location: The City of Fresno proposes a Recycled Water Master Plan (proposed project or Master Plan) that identifies potential recycled water use opportunities within the City and its Sphere of Influence (SOI), including Fresno County lands located in or adjacent to the SOI.

Project Description: The Master Plan includes a plan for the installation and operation of treatment, storage and distribution infrastructure to serve the proposed project area with recycled water that would be implemented in a phased manner based on technical, funding, partnering, and other factors. The Master Plan would inform the City's decision process in selecting recycled water projects that include the expansion of the City's recycled water system to reduce the use of percolation ponds that currently handle effluent discharge, to offset potable water use, and to enhance the sustainability of the water supply.

Summary of Significant Environmental Effects: Implementation of the proposed project would contribute to project-specific and cumulative significant and unavoidable impacts relating to short-term emission of criteria pollutants associated with construction activities and the potential to demolish historic architectural structures. The DEIR found that all other significant impacts would be mitigated to a less than significant level.

Public Comment Period and Availability of Documents: The DEIR was released for public review on March 25, 2011 and the 45 day public review period for this DEIR will extend through May 9, 2011. Copies of the DEIR and the Draft Recycled Water Master Plan are available for review at the following locations: (1) City Planning and Development website <http://www.fresno.gov/Government/DepartmentDirectory/PlanningandDevelopment/Planning/MajorProjectsunderReview.htm>; (2) City of Fresno City Hall, 2600 Fresno Street, 3rd Floor, Room 3065, Public Utilities Department Administration, Fresno CA 93721; and (3) County of Fresno Central Library, 2420 Mariposa Street, Fresno CA 93721.

Copies of the DEIR on CD may be requested by phone or by e-mail. Written comments on the DEIR must be received by mail, or e-mail no later than Monday, May 9, 2011; please be sure to include your name, address, and telephone number. **Comments on the DEIR should be sent to: Kevin Norgaard, Chief of Technical Services, Wastewater Management Division, Fresno-Clovis Regional Water Reclamation Facility, 5607 West Jensen Avenue, Fresno CA 93706, Phone: (559) 621-5297, Email: Kevin.Norgaard@Fresno.gov.**

Notice of Public Hearing: Monday April 18th at 6 pm in the Fresno City Council Chambers, Second Floor, 2600 Fresno Street, Fresno, CA 93721.

Letter 6: Fresno Irrigation District

Response to Comment 6-1

The City recognizes that alteration of discharges into FID's canal system would require coordination with FID, and likely renegotiation of existing agreements between the City and FID. The City also recognizes FID's concern regarding water quality of recycled water, and notes that, as discussed in Chapter 1 of the Draft EIR, subsequent environmental review would be required prior to delivery of recycled water, including delivery to FID. Subsequent projects would also be subject to permitting and compliance measures through the CVRWQCB, and additional information would be available at that time in regards to the anticipated levels of various water quality constituents that would be contained in the recycled water. The City anticipates that such data would aid FID in evaluating potential for changes within its system, in regards to the acceptance/conveyance of recycled water along FID facilities. The City also anticipates that renegotiation of existing agreements between the City and FID would occur, as warranted, as individual projects are implemented under this programmatic EIR.

Response to Comment 6-2

Comment noted. The second paragraph on page 4.4-1 of the Draft EIR is revised to read as follows:

A network of small, channelized streams and canals extend throughout the City of Fresno. As shown on **Figure 4.4-1**, these include Big Dry Creek, Dog Creek, Dry Creek Canal, Lower Dry Creek Canal, Houghton Canal, Mill Canal Creek, Herndon Canal, Gourd Gould Canal, and Fancher Creek Canal. These waterways provide drainage and water conveyance within the City and, through a network of natural and engineered drainages, Some of these canals and creeks, eventually flow into the San Joaquin River and the Sacramento-San Joaquin Delta. However, several canals and creeks within the Project area, including Fancher Creek Canal, Lower Dry Creek, and Houghton Canal, drain into the Tulare Lake basin. The Kings River is located approximately 25 miles south of the city on the southern border of Fresno County.

Figure 4.4-1 on page 4.4-3 of the Draft EIR is revised as follows and is included in Chapter 2: "Dry Creek" was relabeled as "Big Dry Creek;" "Mill Creek" was relabeled as "Mill Canal;" "Gourd Canal" was relabeled as "Gould Canal;" "Fancher Creek Canal" was relabeled as "Fancher Creek Canal."

Response to Comment 6-3

Comment noted. See Response to Comment 6-2.

Response to Comment 6-4

The text on page 4.4-1 of the Draft EIR has been updated to indicate that some but not all of the identified waterways drain into the San Joaquin River and the Sacramento-San Joaquin Delta. See Response to Comment 6-2.

Response to Comment 6-5

Comment noted. The fourth paragraph on page 4.4-2 of the Draft EIR is revised to read as follows:

... As shown in Figure 4.4-1, FEMA-defined 100-year flood zones are located along a northeast to southwest corridor that crosses the City, as well as along select areas of Mill Canal Creek, and in the downtown area of the City.

Response to Comment 6-6

Comment noted. The first paragraph on page 4.4-2 of the Draft EIR is revised to read as follows:

... The reservoir has a capacity of approximately 1 million acre-feet. The river, via FID infrastructure, provides water to Fresno and its vicinity for agricultural use, groundwater recharge, and municipal water supply at two surface water treatment plants and other beneficial uses. The Kings River is connected with the San Joaquin River via the Fresno Slough and James Bypass.

Response to Comment 6-7

Comment noted. The third paragraph on page 4.4-5 of the Draft EIR is revised to read as follows:

...The City's Leaky Acres facility, located northwest of the Fresno Yosemite International Airport, provides an additional 210 acres of groundwater recharge facilities, and FID and the City of Clovis maintain several recharge facilities within their service/urban areas. The Fresno Metropolitan Flood Control District maintains approximately 150 groundwater recharge basins. ...

Response to Comment 6-8

Comment noted. The City has previously met with FID to discuss topics related to the use of treated effluent from the RWRP and will continue to do so as appropriate.



DATE: May 9, 2011

TO: KEVIN NORGAARD, Chief of Technical Services
Wastewater Management Division

FROM: DANIEL YRIGOLLEN, Airports Projects Supervisor
Airports Department

SUBJECT: ENVIRONMENTAL IMPACT REPORT FOR RECYCLED WATER
MASTER PLAN PROGRAM

The Recycled Water Master Plan contains elements that may be hazardous to aviation. Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5200-33b Hazardous Wildlife Attractants On Or Near Airports shall be implemented with respect to the Fresno Yosemite International Airport (FAT) and Fresno Chandler Executive Airport (FCH). Per the AC construction of recharge basins and use of existing basins for recharge within 10,000 feet of an airport creates a potential wildlife hazard. Wildlife hazards within 10,000 feet of an Air Operations Area (AOA) are to be avoided and hazards that may cause wildlife movement across the approach or departure airspace shall be sited no closer than 5 miles to the AOA. When proposing facilities that are within these criteria it shall be mandatory to submit form 7460-1 *Notice of Proposed Construction or Alteration* to the FAA for review. The conditions of the Advisory Circular do not appear to have been addressed adequately by the consultant.

7-1

Following are statements or figures in the document that are to be reevaluated:

1. Page ES-22 - Hazards and hazardous materials - impact 4.9.5 recharge basins within 2 miles of airport; Measure 4.9.5 basins to be sited in conformance with FAA Advisory Circular 150/5200-33b. File form 7460 for FAA evaluation of sites.
2. Figure 3-11 shows recharge sites within 10,000 feet of FCH. File form 7460 for FAA evaluation of sites.
3. 3.5.1.3 Northeast Quadrant identifies Granite Park site as potential satellite recycled water facilities (SRWF). File form 7460 for FAA evaluation of sites.
4. Figure 3-17 shows recharge basins within 10,000 feet of FYI. File form 7460 for FAA evaluation of sites.
5. Figure 3-18 shows recharge basins within 10,000 feet of FYI. File form 7460 for FAA evaluation of sites.
6. 3.8 Permits and Approvals – include FAA approval for proposed recharge facilities near airports. File form 7460 for FAA evaluation of sites.
7. 4.4.2 Environmental Setting – Drainage and Stormwater Management – indicates flood control basins are used for groundwater recharge. Need to restrict near airports. File form 7460 for FAA evaluation of sites.
8. 4.4.2 Environmental Setting – Groundwater Recharge – File form 7460 for FAA evaluation of sites.
9. Objective G-4 develop recharge facilities in compliance with FAA regulations.

7-2

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City of Fresno Airports Department

- 10. 4.9.4 Impacts and Mitigation Measures – Doesn't seem to address the issue correctly. Speaks of safety hazard to people working on project not how wildlife attractant is a hazard to aviation. 7-11
- 11. Impact 4.9.5 addresses wildlife attractant Advisory Circular compliance. Should add the need to file form 7460 for evaluation of sites. 7-12

I've attached the Advisory Circular for your use. In particular Figure 1 on page 2 illustrates the limits for wildlife attractants around airports.

Attachments: AC 150/5200-33b

C: Kevin Meikle, Assistant Director of Aviation (Interim)

Letter 7: Fresno Yosemite International Airport

Please note that attachment included as part of Letter 7: FAA Advisory Circular 150/5200-33b is included at Appendix B of this Final EIR.

Response to Comment 7-1

Mitigation Measure 4.9.5 described on page 4.9-14 does require that groundwater basins be sited consistent with the guidance contained in the Federal Aviation Administration (FAA) Advisory Circular 150/5200-33b, as applicable. Advisory Circular 150/5200-33b includes that as a matter of policy, that, “the FAA encourages operators of public-use airports who become aware of proposed land use practice changes that may attract hazardous wildlife within 5 statute miles of their airports to promptly notify the FAA. The FAA also encourages proponents of such land use changes to notify the FAA as early in the planning process as possible. Advanced notice affords the FAA an opportunity (1) to evaluate the effect of a particular land-use change on aviation safety and (2) to support efforts by the airport sponsor to restrict the use of land next to or near the airport to uses that are compatible with the airport. The airport operator, project proponent, or land-use operator may use FAA Form 7460-1, Notice of Proposed Construction or Alteration, or other suitable documents similar to FAA Form 7460-1 to notify the appropriate FAA Regional Airports Division Office.” Therefore, because Mitigation Measure 4.9.5 requires that groundwater basins be sited consistent with Advisory Circular 150/5200-33b, FAA Form 7460-1 would be filed with the FAA, as appropriate.

To further clarify the requirements contained in Advisory Circular 150/5200-33b, Impact 4.9.5 and the impact discussion on page 4.9.13 and Mitigation Measures 4.9.4 on page 4.9-14 of the Draft EIR are revised to read as follows:

Impact 4.9.5: Proposed project facilities could be located within ~~two~~ five miles of an airport resulting in a safety hazard. (Less Than Significant With Mitigation)

Construction of the facilities associated with the proposed project would potentially result in locating some facilities within ~~two~~ five miles of an existing public airport, or within the vicinity of a private airport. The Fresno-Yosemite International Airport, Chandler Downtown Executive Airport, and the Sierra Sky Park Airport are the major airports located in the plan area. The project area also includes private airstrips used for agricultural or recreational purposes. These are scattered across rural portions of the project area.

Specific locations for most facilities associated with the proposed project remain unknown at the time of publication of this document. However, the potential SRWFs, groundwater recharge basins, and pump stations could be located ~~near~~ within five miles of these airports. Groundwater recharge basins could attract waterfowl that could increase the potential for birdstrikes posing a safety threat to airplanes during landing and takeoff. This would result in *significant* impact.

Mitigation Measures

Implementation of the following mitigation measures would reduce this impact to a *less-than-significant* level by complying with Federal Aviation Administration guidance for siting surface water features, including locating groundwater basins, at a distance to minimize the potential for bird strikes.

Measure 4.9.5: Groundwater recharge basins and other surface water features shall be sited consistent with the guidance contained in the Federal Aviation Administration Advisory Circular 150/5200-33b Hazardous Wildlife Attractants on or Near Airports, including filing Form 7460-1 with the Federal Aviation Administration, as applicable.

Impact Significance After Mitigation: Less Than Significant.

Response to Comment 7-2

See Response to Comment 7-1. Impact and Mitigation Measure 4.9.5 have been revised and these revisions will be reflected in the revised summary table included in the MMRP (see Appendix A of the Final EIR).

Response to Comment 7-3

See Response to Comment 7-1.

Response to Comment 7-4

See Response to Comment 7-1.

Response to Comment 7-5

See Response to Comment 7-1.

Response to Comment 7-6

See Response to Comment 7-1.

Response to Comment 7-7

The permits and approvals identified in subsection 3.8 on pages 3-41 through 3-43 refer to responsible agencies that could have permit and approval authority over the proposed project. As defined in CEQA (section 15381) A responsibly agency means a public agency, other than the lead agency (in this case the City of Fresno) which has discretionary approval authority over the proposed project. The FAA would not have discretionary approval authority of implementation of the proposed Master Plan under Advisory Circular 150/5200-33b so no changes to subsection 3.8 are required. The FAA would have approval authority only over proposed project facilities if they were to be constructed on Airport Enterprise property or on property subject to FAA covenants.

Never the less, as described in Response to Comment 7-1, Mitigation Measure 4.9.5, as revised, requires that groundwater basins and surface water features be sited consistent with Advisory Circular 150/5200-33b and that FAA Form 7460-1 would be filed with the FAA, as appropriate.

Response to Comment 7-8

See Response to Comment 7-1.

Response to Comment 7-9

See Response to Comment 7-1.

Response to Comment 7-10

City of Fresno General Plan Objective G-4 refers to the management, use and replenishment of water resources to maintain a balanced “water budget” for the Fresno area. It is unclear what the comment is referring to when referencing this objective in connection with development of recharge facilities in compliance with FAA regulations.

As described in Response to Comment 7-1, Mitigation Measure 4.9.5, as revised, requires that groundwater basins and surface water features be sited consistent with Advisory Circular 150/5200-33b and that FAA Form 7460-1 would be filed with the FAA, as appropriate.

Response to Comment 7-11

Impact 4.9.4 and Mitigation Measure 4.9.4 on page 4.9-13 addresses potential hazards to schools located within one quarter mile of a proposed project facility associated with accidental release of hazardous materials attributed to proposed project construction and operation. This impact does not address wildlife attractant as a hazard to aviation. Potential hazards to airplanes during landing and takeoff due to potential increase in bird strikes is addressed in Impact 4.9.5 on pages 4.9-13 and 4.9-14. See also Response to Comment 7-1.

Response to Comment 7-12

See Response to Comment 7-1.



FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

File 170.21
170.301
210.415
210.425
550.30

May 23, 2011

Mr. Kevin Norgaard
Wastewater Management Division
Fresno-Clovis Regional Water Reclamation Facility
5607 W. Jensen Ave.
Fresno, CA 93706

Dear Mr. Norgaard,

**Fresno Metropolitan Flood Control District Comments
to the Draft Environmental Impact Report
City of Fresno Recycled Water Master Plan and Ordinance**

The District has reviewed the Draft EIR for the City of Fresno Recycled Water Master Plan and requests the following revisions:

- **Page 2-3, Section 2.1.3 North Fresno Water Reclamation Facility and Distribution Pipelines**

Revise as shown below in bold italics:

A WRF located in North Fresno (NFWRF) was recently built to serve the Copper River Ranch development and golf course. The permitted capacity of the plant is 0.71 mgd (average monthly flow) and 1.08 mgd (maximum daily flow). The plant is master planned for expansion to 1.08 mgd (average monthly flow) at build out. Disinfected tertiary recycled water from the NFWRF is to be used to irrigate the Copper River Ranch Golf Course once the NFWRF is operational and is approved for production of recycled water by the California Department of Public Health and the Regional Water Quality Control Board. The golf course is within the city limits of Fresno and currently is irrigated almost exclusively with surface water provided by FID, and supplemented with a minimal amount from an agricultural well. During wet weather months, recycled water in excess of turf demands will be dechlorinated and sent to a nearby percolation basin owned and managed by the Fresno Metropolitan Flood Control District, and used to irrigate landscaped areas within the basin. Projected recycled water production for the NFWRF ranges from about 750 AFY to about 1,250 AFY at build out. ***The developer of Copper River Ranch will be entering into an agreement with the District that will define effluent discharge capacities to be allowed into District's basin.***

8-1

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Mr. Kevin Norgaard
May 23, 2011
Page 2 of 3

- **Page 4.4-15, Fresno-Clovis Storm Water Quality Management Program**

Please replace opening sentence with revised wording as shown below in bold italics:

~~A Storm Water Quality Management Program (SWQMP) prepared by the FMFCD was adopted for use in Fresno, Clovis and urban areas of Fresno County in 2005 (if this is a FMFCD program, suggest moving it under the FMFCD section above). In compliance with the Federal Clean Water Act and implementing storm water permit regulations, the District and five other local public agencies (County of Fresno, City of Fresno, City of Clovis, CSU Fresno, and CalTrans) developed a storm water quality management program to be implemented in the Fresno-Clovis metropolitan area. The program proposal was submitted to the Central Valley Regional Water Quality Control Board (RWQCB) as a part of the NPDES municipal storm water permit process. The RWQCB incorporated into the permit specific program requirements, including best management practices to prevent and reduce storm water pollutants. The NPDES permit was issued to the participating agencies in September 1994, and is currently being renewed through the RWQCB.~~

8-2

- **Page 4.4-16, Storm Drainage Master Plan**

Revise as shown below:

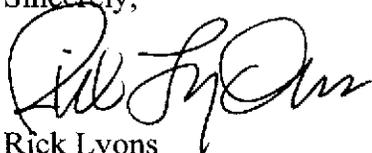
A Storm Drainage Master Plan was adopted by the City Council, as a component of the conservation and public facilities element to the 1974 Fresno-Clovis Metropolitan Area General Plan. The Storm Drainage Master Plan delineates a plan for each drainage area identified by the Plan. It provides a review of various proposed local drainage facilities that are required for implementation, together with their appurtenances, and a map of the local drainage area showing its boundaries and the location of planned local drainage facilities. Implementation of the Storm Drainage Master Plan is funded under a rate structure identified within the Storm Drainage Master Plan. Payment of such fees is required for construction of new facilities, **and maintenance of existing facilities and storm drainage basins.** ~~excepting underground conduits, pipelines, or similar developments which do not materially later the natural surface of a parcel of land.~~ Each property within the planning area thereby contributes a pro-rata share of the cost of implementing upgrades to the existing public storm water drainage system, in order to ensure that, as new properties are developed, additional storm water drainage and flood control facilities are also developed as warranted to support conveyance of storm water drainage without resulting in increases in flooding downstream.

8-3

Mr. Kevin Norgaard
May 23, 2011
Page 3 of 3

Thank you for the opportunity to comment. Please keep our office informed on the development of this project. If you should have any questions or comments, please contact the District at (559) 456-3292.

Sincerely,

A handwritten signature in black ink, appearing to read "Rick Lyons". The signature is fluid and cursive, with the first name "Rick" being more prominent than the last name "Lyons".

Rick Lyons
Engineering Technician III

RL/lrl

Letter 8: Fresno Metropolitan Flood Control District

Response to Comment 8-1

Comment noted. The first paragraph on page 2-3 of the Draft EIR is revised to read as follows:

...During wet weather months, recycled water in excess of turf demands will be dechlorinated and sent to a nearby percolation basin owned and managed by the Fresno Metropolitan Flood Control District (FMFCD), and used to irrigate landscaped areas within the basin. Projected recycled water production for the NFWRF ranges from about 750 AFY to about 1,250 AFY at buildout. To support development of this facility, the applicant for the Copper River Ranch development would be entering into an agreement with FMFCD, that would define effluent discharge capacities to be allowed into FMFCD facilities.

Response to Comment 8-2

Comment noted. The first paragraph on page 4.4-15 of the Draft EIR is revised to read as follows:

In compliance with the Federal Clean Water Act and implementing storm water permit regulations, the FMFCD, County of Fresno, City of Fresno, City of Clovis, CSU Fresno, and Caltrans developed a stormwater quality management program to be implemented in the Fresno-Clovis metropolitan area. The program proposal was submitted to the CVRWQCB as a part of the NPDES municipal stormwater permit process. The CVRWQCB incorporated into the permit specific program requirements, including best management practices to prevent and reduce stormwater pollutants. The NPDES permit was issued to the participating agencies in September 1994, and is currently being renewed through the CVRWQCB.

~~A Storm Water Quality Management Program (SWQMP) prepared by the FMFCD was adopted for use in Fresno, Clovis and urban areas of Fresno County in 2005 (If this is a FMFCD program, suggest moving it under the FCFMD section above). It~~ The Fresno-Clovis Storm Water Quality Management Program is intended to reduce the discharge of potential water quality pollutants from the local storm drain system. ...

Response to Comment 8-3

Comment noted. The first full paragraph on page 4.4-16 of the Draft EIR is revised to read as follows:

...Implementation of the Storm Drainage Master Plan is funded under a rate structure identified within the Storm Drainage Master Plan. Payment of such fees is required for construction of new facilities, and maintenance of existing facilities and storm drainage basins, ~~excepting underground conduits, pipelines, or similar developments which do not~~

~~materially alter the natural surface of a parcel of land.~~ Each property within the planning area thereby contributes a pro-rata share of the cost of implementing upgrades to the existing public stormwater drainage system, in order to ensure that, as new properties are developed, additional stormwater drainage and flood control facilities are also developed as warranted to support conveyance of stormwater drainage without resulting in increases in flooding downstream.

Appendix A

Mitigation Monitoring and Reporting Program



APPENDIX A

Mitigation Monitoring and Reporting Program

Public Resources Code Section 21081.6, subdivision (a)(1) requires lead agencies to, “adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation”. This Mitigation Monitoring and Reporting Program (MMRP) identifies: mitigation measures adopted by the City of Fresno (City) from the City of Fresno Recycled Water Master Plan Program Environmental Impact Report (Program EIR); responsibility for implementation of the mitigation measures; responsibility for monitoring implementation of mitigation measures; actions taken to monitor and report on implementation; and timing of action. Mitigation measures are numbered consistent with the numbering included in the Draft Program EIR (State Clearinghouse No. 210051015), as updated by responses to comments included in the City of Fresno Recycled Water Master Plan Final Program EIR.

The MMRP table includes the following:

- **Mitigation Measures** – lists the adopted mitigation measures from the Program EIR.
- **Responsibility for Implementation** – identifies the City Department or other agency responsible for implementing the actions described in the mitigation measures.
- **Responsibility for Monitoring** – identifies the City Department or other agency responsible for monitoring implementation of the actions described in the mitigation measures.
- **Action by Monitor** - describes the actions taken to monitor and report implementation of the mitigation requirements.
- **Timing** – identifies the timing of implementation of the actions described in the mitigation measures.

Abbreviations used in the MMRP include:

- **Building and Safety Services Division** – City of Fresno Development and Resource Management Building and Safety Services Division
- **CDFG** – California Department of Fish and Game
- **CVRWQCB** – Central Valley Regional Water Quality Control Board
- **DARM** - City of Fresno Development and Resource Management (formerly the Planning and Development Department)
- **DPU** – City of Fresno Department of Public Utilities

- **Historic Preservation** – Program with the Department of Resource Management
- **Planning Division** - City of Fresno Development and Resource Management Planning Division
- **PWD** – City of Fresno Public Works Department
- **SJVAPCD** – San Joaquin Valley Air Pollution Control District
- **Traffic Engineering** – City of Fresno Public Works Department Traffic Engineering Division
- **USFWS** – United States Fish and Wildlife Service
- **Wastewater Management Division** - City of Fresno Department of Public Utilities Wastewater Management Division

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
Geology and Soils				
Mitigation Measure 4.3.1a: The City shall prepare a site-specific soil and geotechnical engineering study prior to final design of individual projects under the Master Plan. Each study shall be performed by a licensed professional including, but not limited to, a geologist, engineering geologist, certified soil scientist, certified agronomist, registered agricultural engineer, registered civil or structural engineer, and/or certified professional erosion and sediment control specialist with expertise in geotechnical engineering issues who is registered and/or certified in the State of California, to determine site specific impacts and to recommend site specific mitigations. The site specific soil and geotechnical engineering studies shall be submitted to the all appropriate State and local regulatory agencies including, but not limited to, City of Fresno Public Works department for review and approval. All feasible recommendations addressing potential seismic hazards and soil constraints shall be implemented.	Wastewater Management Division	Building and Safety Services Division Planning Division	Confirm that a site-specific soils and geotechnical engineering study is performed for individual projects by a licensed professional prior to final design approval. Confirm that the site specific soil and geotechnical are submitted to all appropriate State and local regulatory agencies. Confirm that all feasible recommendations addressing potential seismic hazards and soil constraints are implemented.	Prior to final design approval
Measure 4.3.1b: All buildings shall conform to California Building Code (CBC) standards for seismicity, engineered slope stability, and erosion control, as relevant.	Wastewater Management Division	Building and Safety Services Division	Confirm that buildings conform to the California Building Code standards for seismicity, engineered slope stability, and erosion control as relevant.	Prior to final design approval
Measure 4.3.1c: All pipelines shall designed and installed consistent with the guidelines published by the American Water Works Association.	Wastewater Management Division	Building and Safety Services Division	Confirm that all pipelines are designed and installed consistent with American Water Works Association guidelines.	Prior to final design approval On-going: construction
Measure 4.3.2: Implement Mitigation Measure 4.3.1a.	See Mitigation Measure 4.3.1a	See Mitigation Measure 4.3.1a	See Mitigation Measure 4.3.1a	See Mitigation Measure 4.3.1a
Measure 4.3.3: Implement Mitigation Measure 4.3.1.	See Mitigation Measure 4.3.1	See Mitigation .Measure 4.3.1	See Mitigation Measure 4.3.1	See Mitigation Measure 4.3.1
Hydrology and Water Quality				
Measure 4.4.2: Prior to construction of the proposed project, the City shall complete an antidegradation analysis, pursuant to SWRCB Resolution No. 68-16. The antidegradation analysis shall include information regarding the nature and extent of the proposed recycled water discharge, its potential to affect receiving water quality including groundwater, and an evaluation of wastewater constituents that may cause or contribute to degradation of water quality, including groundwater. The antidegradation analysis shall consider, on a constituent by constituent basis, potential degradation of surface/groundwater resulting from each of the proposed water reclamation activities. For each potential water quality contaminant, the analysis shall demonstrate whether the indicated change in water quality would be consistent with maximum benefit to the people of the state, would not unreasonably affect beneficial uses, and would not result in water quality less than that described in the Water Quality Control Plan for the Tulare Lake Basin. In the event that the project could result in degradation of waters of the state, including groundwater and associated beneficial uses, the project proponent shall implement Best Practicable Treatment or Control (BPTC) measures. BPTC measures shall be evaluated and implemented in coordination with the Central	Wastewater Management Division	Wastewater Management Division CVRWQCB	Confirm the completion of an antidegradation analysis prior to construction. Confirm that in the event that the project could result in degradation of waters of the state, BPTC measures are implemented in coordination with the CVRWQCB.	Prior to construction On-going: construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
<p>Valley Regional Water Quality Control Board (CVRWQCB), in order to assure the highest water quality consistent with maximum benefit to the people of the state is maintained.</p>				
Mitigation 4.4.6: Implement Mitigation Measure 4.4.2.	See Mitigation Measure 4.4.2	See Mitigation Measure 4.4.2	See Mitigation Measure 4.4.2	See Mitigation Measure 4.4.2
Biological Resources				
<p>Measure 4.5.1a: Pre-construction surveys for burrowing owls shall be conducted by a qualified biologist [as approved by the California Department of Fish and Game (CDFG)] within 30-days prior to the start of work activities where land construction is planned in known or suitable habitat for burrowing owls. If construction activities are delayed for more than 30 days after the initial preconstruction surveys, then a new preconstruction survey shall be required. All surveys shall be conducted in accordance with the CDFG/California Burrowing Owl Consortium survey protocols.</p>	Wastewater Management Division	DARM CDFG	<p>Confirm completion of pre-construction surveys for burrowing owls shall by a qualified biologist within 30-days prior to the start of work activities where land construction is planned in known or suitable habitat for burrowing owls. Confirm a new preconstruction survey is completed if construction activities are delayed for more than 30 days after the initial preconstruction surveys.</p>	Prior to construction
<p>Measure 4.5.1b: If burrowing owls are discovered in the proposed project site vicinity during construction, the onsite biologist shall be notified immediately. Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.</p> <p>If this criteria is not met, occupied burrows during the nesting season will be avoided by establishment of a no-work buffer of 250-foot around the occupied/active burrow. Where maintenance of a 250-foot no-work buffer zone is not practical, the project applicant shall consult with the CDFG to determine appropriate avoidance measures. Burrows occupied during the breeding season (February 1 to August 31) will be closely monitored by the biologist until the young fledge/leave the nest. The onsite biologist shall have the authority to stop work if it is determined that construction related activities are disturbing the owls.</p> <p>If criterion 1 or 2 above are met and as approved by CDFG, the biologist shall undertake passive relocation techniques by installing one-way doors in active and suitable burrows allowing owls to escape but not re-enter. Owls should be excluded from the immediate impact zone and within a 160-foot buffer zone by having one-way doors placed over the entrance to prevent owls from inhabiting those burrows.</p> <p>Outside of the nesting season (August 31 through January 31st), passive relocation techniques shall take place. Construction activities may occur once a qualified biologist has deemed the burrows are unoccupied.</p>	Wastewater Management Division	DARM Wastewater Management Division CDFG	<p>Confirm that the onsite biologist is notified immediately if burrowing owls are discovered in the proposed project site vicinity during construction. Confirm that occupied burrows are not disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.</p>	On-going: construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
<p>Measure 4.5.2: Prior to commencement of construction, a qualified biologist shall conduct a pre-construction survey for: horned lark, tri-colored blackbird, raptors, and other protected migratory bird species. The survey shall be conducted to identify any active nests located within the construction area or up to 0.5 mile from the construction area. In addition, all trees slated for removal shall be surveyed by a qualified biologist no more than 48-hours before removal to ensure that no nesting birds are occupying the tree. If possible, trees slated for removal shall be removed starting September 1st through the end of February, outside of the nesting season.</p> <p>If active nests are found during the survey, the applicant shall implement appropriate mitigation measures to ensure that the species will not be adversely affected, which will include establishing a no-work buffer zone as approved by CDFG, around the active nest. The no-work buffer may vary depending on species and site specific conditions as approved by CDFG. Appropriate mitigation measures include delaying construction activities until a qualified biologist determines that juveniles have fledged the nest(s), or establishing a “no construction” zone buffer around the nest.</p> <p>The results of the survey shall be documented in a letter report that is distributed to the California Department of Fish and Game and the City of Fresno. These measures will ensure compliance with the Migratory Bird Treaty Act and California Department of Fish and Game Code 3503.5.</p>	<p>Wastewater Management Division</p>	<p>DARM Wastewater Management Division</p>	<p>Confirm completion of pre-construction surveys by a qualified biologist. Confirm that if active nests are found during the survey that the appropriate mitigation measures are implemented, including a no-work buffer approved by CDFG. Confirm that the results of the survey are documented in a letter report that is distributed to CDFG and the City of Fresno.</p>	<p>Prior to construction On-going: construction</p>
<p>Measure 4.5.3: Elderberry shrubs shall be avoided where possible. The project proponent shall ensure that elderberry shrubs within 100 feet of the proposed project activities shall conform to the following the <i>US Fish and Wildlife Service (USFWS) Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i> (USFWS, 1999) to avoid impacts to and take of Valley Elderberry Longhorn Beetle (VELB) as defined under the Endangered Species Act..</p> <ol style="list-style-type: none"> 1. Prior to initiating project related activities, elderberry shrubs within the project boundaries including those areas outside of the project boundaries and within 100-feet of proposed project activities shall be surveyed by a qualified botanist/biologist. The results of the survey shall be submitted to USFWS for review, approval and to be used as a basis for determining appropriate avoidance and mitigation measures. 2. For all shrubs that can be avoided by construction activities, a 100-foot buffer surrounding the plant shall be maintained at all times. The buffer shall be fenced with temporary fencing and flagging. Signs shall be placed along the fencing every 50 feet that state the following: “This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.” The above sign shall be readable from a distance of 20 feet and maintained through the duration of construction. Work crews shall be briefed on the status of the beetle, the need to protect its host plant (elderberries), requirements to avoid damaging elderberry shrubs, and possible penalties for not complying with identified avoidance and minimization measures. In addition, 	<p>Wastewater Management Division</p>	<p>DARM Wastewater Management Division</p>	<p>Confirm completion of pre-construction surveys within 100 foot buffer by a qualified botanist/biologist. Confirm that elderberry shrubs within 100 feet of the proposed project activities shall conform to the following the <i>USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i>. Confirm that compensatory mitigation is provided for any affected shrubs (shrubs within 100 feet of disturbance).</p>	<p>Prior to construction On-going: construction</p>

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
<p>construction workers should be made aware of the habitat needs of VELB and the location of protection areas on the site (USFWS, 1999).</p> <p>3. Where complete avoidance of shrubs within 100 feet is not feasible, USFWS shall be consulted prior to any disturbance taking place. Protective measures include:</p> <ul style="list-style-type: none"> • Establishing a 20-foot buffer shall be fenced with temporary fencing and flagging and maintained throughout construction. Signs shall be placed along the fencing as described above, and work crews shall be briefed as described above. • The project proponent shall restore any damage occurring within 100 feet of elderberry shrubs that are not removed by the project during construction. Erosion control shall be provided and the area shall be revegetated with appropriate native plants. • No insecticides, herbicides, fertilizers, or other chemical shall be used within 100 feet of any elderberry shrub with one or more stems measuring 1 inch or greater in diameter at ground level. • A written description of planned restoration, protection, and maintenance of buffer areas post-construction shall be provided. <p>4. For any affected shrubs (shrubs within 100 feet of disturbance), the project proponent shall provide compensatory mitigation by either: 1) purchasing credits for all required compensation from the USFWS-approved Conservation Bank, 2) transplanting the shrubs at a location approved by USFWS and purchasing credits for any remaining mitigation requirements using mitigation ratios described in <i>USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i> (USFWS, 1999), or 3) transplanting the shrubs onto the Conservation Bank property and planting additional seedlings for any remaining mitigation requirements using mitigation ratios described in <i>USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i> (USFWS, 1999). Each credit purchased from the Conservation Bank will provide compensatory mitigation for five elderberry stems and five associated native plant species. If the shrubs are relocated to the Conservation Bank property, all Conservation Guidelines described by USFWS (1999) for elderberry transplants shall be implemented, and the project proponent's contractor shall coordinate with the Conservation Bank to replant the shrubs.</p>	<p>Wastewater Management Division</p>	<p>DARM CDFG USFWS</p>	<p>Confirm that preconstruction surveys for the San Joaquin kit fox are conducted by a qualified biologist no less than two calendar weeks and no more than thirty calendar days prior to commencement of ground disturbance. Confirm that when surveys identify potential dens, potential den entrances are dusted for three calendar days to register and track activity of any San</p>	<p>Prior to construction On-going: construction</p>
<p>Measure 4.5.4a: To ensure that impacts to the San Joaquin kit fox and its habitat are avoided or reduced, the following measures shall be implemented: Preconstruction surveys for the San Joaquin kit fox shall be conducted no less than two calendar weeks and no more than thirty calendar days prior to commencement of ground disturbance. Surveys shall be conducted by qualified biologists. When surveys identify potential dens (defined as burrows at least four inches in diameter which open up within two feet), potential den</p>				

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
<p>entrances shall be dusted for three calendar days to register and track activity of any San Joaquin kit fox present. If no San Joaquin kit fox activity is identified, the den may be destroyed.</p> <p>If San Joaquin kit fox activity is identified, then dens shall be monitored for at least five consecutive days from the time of observation to determine if occupation is by an adult fox only or is a natal den (natal dens usually have multiple openings). If the den is occupied by an adult only, it may be destroyed when the adult fox has moved or is temporarily absent.</p> <p>If the den is a natal den, a buffer zone of 250 feet shall be maintained around the den and as approved by the USFWS. This buffer zone will be maintained until the biologist determines that the den has been vacated. Where San Joaquin kit fox are identified, the provisions of the U.S. Fish and Wildlife Service's published <i>Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance</i> shall apply (except that preconstruction survey protocols shall remain as established in this paragraph). These standards include provisions for educating construction workers regarding the kit fox, keeping heavy equipment operating at safe speeds, checking construction pipes for kit fox occupation during construction and similar low or no-cost activities.</p>			<p>Joaquin kit fox present. Confirm that if San Joaquin kit fox activity is identified that dens are monitored for at least five consecutive days from the time of observation to determine if occupation is by an adult fox only or is a natal den. Confirm that if the den is a natal den, a buffer zone of 250 feet is maintained around the den as approved by the USFWS. Confirm that the buffer zone is maintained until the biologist determines that the den has been vacated. Confirm that is and where San Joaquin kit fox are identified, the provisions of the USFWS's published <i>Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance</i> apply (except that preconstruction survey protocols shall remain as established in this paragraph).</p>	
<p>Measure 4.5.4b: All excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth-full or wooden planks.</p>	Contractor	DARM Building and Safety Services Division	<p>Confirm that all excavated, steep-walled holes or trenches more than two feet deep are covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth-full or wooden planks.</p>	On-going; construction
<p>Measure 4.5.5: To ensure that impacts to the California tiger salamander and its habitat are avoided or reduced, the following measures shall be implemented:</p> <ul style="list-style-type: none"> • Prior to project approval, a Site Assessment shall be conducted by a qualified biologist shall survey all habitat suitable for California tiger salamander (CTS) exists within the project site that may be directly affected by project activities and whether further studies shall be required. The survey shall be conducted according to the methods outlined in the Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (USFWS, 2003) and submitted to USFWS for review and approval. • In the event that further protocol-level surveys are required and that the surveys result in a negative finding per USFWS and CDFG guidance, a solid barrier such as silt fencing shall be installed to exclude CTS from entering the project site and per the guidance and approved by the on-site biologist. • Daily visual clearance surveys shall also be conducted during initial ground-disturbing activities. If a CTS is identified where habitat disturbance is proposed, work shall be halted and an USFWS-approved biologist shall be contacted to determine appropriate actions, unless already stipulated by the USFWS and CDFG. If the USFWS and CDFG approve moving salamanders, the qualified biologist shall be allowed sufficient time to move the species from the work site before 	Wastewater Management Division	DARM CDFG USFWS	<p>Confirm that Site Assessment is conducted by qualified biologist prior to approval of individual projects under the Master Plan in accordance with USFWS Interim Guidance. Confirm submitted to USFWS for approval. If additional protocol-level surveys are required, confirm that a solid barrier such as silt fencing is installed prior to construction in accordance with Interim Guidance. Confirm that daily visual clearance surveys are conducted. Confirm that if a CTS is identified where habitat disturbance is proposed, work shall be halted and an USFWS-approved biologist shall be contacted to determine appropriate actions, unless already stipulated by the USFWS and CDFG. Confirm that permanent loss of CTS habitat is mitigated for at a 0.2:1 ratio or through purchase of fee title or conservation easement lands as approved by the USFWS and the CDFG.</p>	<p>Prior to project approval Prior to construction On-going; construction</p>

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<p>work activities resume. Only USFWS-approved biologists, and as allowed for under the conditions of a State Incidental Take Permit (ITP), shall participate in the capturing, handling, and translocation of CTS. Any CTS relocated by the project shall be moved to nearby appropriate habitat, as determined by the qualified biologist and approved by USFWS and CDFG. Results of the preconstruction surveys shall be reported to USFWS.</p> <ul style="list-style-type: none"> As approved by the USFWS and the CDFG, the applicant shall mitigate for the permanent loss of CTS habitat at a 0.2:1 ratio. Mitigation may be achieved by purchasing appropriate mitigation credits at a USFWS and CDFG-approved bank or preserve or through the purchase of fee title or conservation easement lands as approved by USFS and CDFG. 				
<p>Measure 4.5.6: Before construction activities begin, a qualified biologist¹ shall conduct western pond turtle surveys within creeks and in other ponded areas affected by the project. Upland areas shall also be examined for evidence of nests as well as individual turtles. The project biologist shall be responsible for the survey and for the relocation of turtles. Construction shall not proceed until a reasonable effort has been made to capture and relocate as many western pond turtles as possible to minimize take. However, some individuals may be undetected or enter sites after surveys, and would be subject to mortality. If a nest is observed, a biologist with the appropriate permits and prior approval from CDFG shall move eggs to a suitable location or facility for incubation, and release hatchlings into the creek system the following autumn.</p>	Wastewater Management Division	DARM CDFG USFWS	Confirm that a qualified biologist conducts western pond turtle surveys within creeks and in other ponded areas affected by the project. Confirm that upland areas are also examined for evidence of nests as well as individual turtles. Confirm that construction shall not proceed until a reasonable effort has been made to capture and relocate as many western pond turtles as possible to minimize take. Confirm that if a nest is observed, a biologist with the appropriate permits and prior approval from CDFG shall move eggs to a suitable location or facility for incubation, and release hatchlings into the creek system the following autumn.	Prior to construction
<p>Measure 4.5.7: To ensure that impacts to the San Joaquin pocket mouse and American badger and their habitat are avoided or reduced, the following measures shall be implemented:</p> <ul style="list-style-type: none"> A qualified biologist shall conduct a training session for all construction personnel focused on the protection and conservation of protected, non-listed special-status wildlife species, including American badgers. At a minimum, the training shall include a species and habitat description for the American badger (in addition to other non-listed special-status species). The training session shall identify the general measures that are being implemented to minimize impacts on these species as they relate to the project, and the boundaries within which the project could be accomplished. Concurrent with other required surveys, during winter/spring months before new project activities, and concurrent with other preconstruction surveys (e.g., kit fox and burrowing owl), a qualified biologist shall perform a pre-activity survey to identify the presence of American badgers. If this species is not found, no further mitigation shall be required. If badgers are identified, they shall be passively relocated using burrow exclusion (e.g., installing one-way doors on burrows) or similar CDFG-approved exclusion methods. In unique situations it might be necessary to actively relocate badgers (e.g., using live traps) to protect individuals from potentially harmful situations. Such relocation 	Wastewater Management Division Contractor	DARM CDFG USFWS	Confirm that a qualified biologist conducts a training session for all construction personnel. Confirm that a qualified biologist performs a pre-activity survey during winter/spring months before new project activities, and concurrent with other preconstruction surveys to identify the presence of American badgers. Confirm that if badgers are identified, they shall be passively relocated using burrow exclusion or similar CDFG-approved exclusion methods. Confirm that when unoccupied dens are encountered outside of work areas but within 100 feet of proposed activities, vacated dens are inspected to ensure they are empty and temporarily covered using plywood sheets or similar materials. Confirm that if badger occupancy is determined at a given site within the work area, the construction manager is informed that work should be halted. Confirm that, depending on the den type, reasonable and prudent measures to avoid harming badgers are implemented. Confirm that project-related vehicles observe a maximum 20 miles per hour speed limit on private roads. Confirm that all excavated holes or trenches greater than 2 feet deep are covered at the	Prior to construction On-going: construction

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<p>could be performed with advance CDFG coordination and concurrence. When unoccupied dens are encountered outside of work areas but within 100 feet of proposed activities, vacated dens shall be inspected to ensure they are empty and temporarily covered using plywood sheets or similar materials.</p> <ul style="list-style-type: none"> If badger occupancy is determined at a given site within the work area, the construction manager should be informed that work should be halted. Depending on the den type, reasonable and prudent measures to avoid harming badgers will be implemented and may include seasonal limitations on project construction near the site (i.e., restricting the construction period to avoid spring-summer pupping season), and/or establishing a construction exclusion zone around the identified site, or resurveying the den a week later to determine species presence or absence. To minimize the possibility of inadvertent badger mortality, project-related vehicles shall observe a maximum 20 miles per hour speed limit on private roads. To prevent accidental entrapment of badgers or other animals during construction, all excavated holes or trenches greater than 2 feet deep shall be covered at the end of each work day by suitable materials, or escape routes constructed of earthen materials or wooden planks shall be provided. Before filling, such holes shall be thoroughly inspected for trapped animals. All food-related trash items (such as wrappers, cans, bottles, and food scraps) shall be disposed of in closed containers and removed daily from the project area. To prevent harassment and mortality of badgers or destruction of their dens, no pets shall be allowed in the project area. 			<p>end of each work day by suitable materials, or escape routes constructed of earthen materials or wooden planks shall be provided. Confirm that before filling, such holes are thoroughly inspected for trapped animals. Confirm that no pets are allowed in the project area.</p>	
<p>Measure 4.5.8: To ensure that impacts to the special-status bat species and their habitat are avoided or reduced, the following measures shall be implemented:</p> <ul style="list-style-type: none"> Before construction activities (i.e., ground clearing and grading, including trees removal) within 200 feet of trees that could support special-status bats, a qualified bat biologist shall survey for special-status bats. If no evidence of bats (i.e., direct observation, guano, staining, or strong odors) is observed, no further mitigation shall be required. If evidence of bats is observed, the City of Fresno and its contractors shall implement the following measures to avoid potential impacts on breeding populations: A no-disturbance buffer of 250-feet shall be created around active bat roosts during the breeding season (April 15 through August 15). Bat roosts initiated during construction are presumed to be unaffected by the indirect effects of noise and construction disturbances. However, the direct take of individuals will be prohibited. Removal of trees showing evidence of active bat activity shall occur during the period least likely to affect bats, as determined by a qualified 	<p>Wastewater Management Division Contractor</p>	<p>DARM CDFG USFWS</p>	<p>Confirm that a qualified bat biologist conducts a survey for special-status bats before construction activities within 200 feet of trees that could support special-status bats. Confirm that if evidence of bats is observed a no-disturbance buffer of 250-feet shall be created around active bat roosts during the breeding season (April 15 through August 15). Confirm that the removal of trees showing evidence of active bat activity occurs during the period least likely to affect bats, as determined by a qualified bat biologist. Confirm that if the exclusion of bats from potential roost sites is necessary to prevent indirect impacts due to construction noise and human activity adjacent, bat exclusion activities are also conducted during these periods.</p>	<p>Prior to construction On-going: construction</p>

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<p>bat biologist (generally between February 15 and October 15 for winter hibernacula, and between August 15 and April 15 for maternity roosts). If the exclusion of bats from potential roost sites is necessary to prevent indirect impacts due to construction noise and human activity adjacent, bat exclusion activities (e.g., installation of netting to block roost entrances) shall also be conducted during these periods.</p>				
<p>Measure 4.5.9: To ensure that impacts to special-status plant species shall be avoided or reduced the following measures shall be implemented:</p> <ul style="list-style-type: none"> • Prior to initiating any phase of the proposed project, pre-construction surveys for special-status plant species shall be performed. A qualified botanist shall conduct pre-construction surveys for special-status plant species during the appropriate season (between February and October) for identification, according to CDFG guidelines for rare plant surveys (CDFG, 2009) as updated, within suitable habitat in the Proposed project area prior to construction. Two surveys for special-status plant species that have the potential to occur within the project site shall be conducted during the period of February through October. If special-status plant species are found during these surveys, the applicant will propose avoidance, minimization, and/or avoidance measures to CDFG for their approval. These measures shall include, but are not restricted, to the following: <ol style="list-style-type: none"> 1. Minimizing impacts by restricting removal of plants to a few individuals of a relatively large population. 2. Relocating plants to suitable habitat outside of the project area, whether within applicant-owned land or off-site. 3. Monitoring affected populations or relocated populations to document potential project-related impacts. 4. Restoring or enhancing occupied habitat on-site or at another location; and/or 5. Protecting occupied habitat for the species on-site or at another regional location. 	<p>Wastewater Management Division Contractor</p>	<p>DARM CDFG USFWS</p>	<p>Confirm that prior to initiating any phase of the proposed project, pre-construction surveys for special-status plant species shall be performed by a qualified botanist during the appropriate season (between February and October) for identification, according to CDFG guidelines for rare plant surveys as updated, within suitable habitat in the Proposed project area prior to construction. Confirm that two surveys for special-status plant species that have the potential to occur within the project site are conducted during the period of February through October. Confirm that if special-status plant species are found during these surveys, the City will propose and implement avoidance, minimization, and/or avoidance measures to CDFG for their approval.</p>	<p>Prior to construction On-going; construction</p>
<p>Measure 4.5.10: In order to protect and preserve wetland habitats within the proposed project area, the following measures shall be implemented:</p> <ul style="list-style-type: none"> • Prior to construction, a jurisdictional wetland delineation shall be prepared for verification by the U.S. Army Corps of Engineers (Corps) to determine the location and extent of waters of the U.S. and wetlands on and near Project Elements. Following the verification, if jurisdictional wetlands will be impacted, a Section 404 permit application shall be prepared and submitted to the Corps. • The no net loss of wetland habitat and no significant impacts to potential jurisdictional features policy shall be complied with through compensation for the unavoidable loss of wetlands at a ratio no less than 1:1. Compensation shall take the form of wetland preservation or creation in accordance with Corps and CDFG mitigation requirements, as required under project permits. Preservation and creation may occur onsite through a conservation agreement or offsite through purchasing 	<p>Wastewater Management Division</p>	<p>DARM</p>	<p>Confirm that prior to construction a jurisdictional wetland delineation be prepared for verification by the Corps. Confirm that the no net loss of wetland habitat and no significant impacts to potential jurisdictional features policy is complied. Confirm that compensation shall take the form of wetland preservation or creation in accordance with Corps and CDFG mitigation requirements, as required under project permits. Confirm the application for a Section 401 Water Quality Certification from the RWQCB prior to discharging fill in these features.</p>	<p>Prior to construction</p>

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<p>credits at a Corps approved mitigation bank.</p> <ul style="list-style-type: none"> In addition, the Regional Water Quality Control Board (RWQCB) regulates these features under Section 401 of the Clean Water Act (CWA); the County shall also apply for a Section 401 Water Quality Certification from the RWQCB prior to discharging fill in these features. Irrigation canals and potential wetlands within the proposed project area may be considered waters of the U.S. and fall under the jurisdictional purview of the Corps and/or RWQCB per Sections 401 and 404 of the CWA. 				
<p>Measure 4.5.11: In order to protect and preserve riparian habitats and/or lake or streambeds within the proposed project area, the following measures shall be implemented:</p> <p>The City of Fresno shall obtain a Section 1602 Streambed Alteration Agreement prior to implementing any action that may alter a stream or lake within the jurisdictional limits of CDFG (typically the top of bank or edge of riparian habitat, whichever is greater). Impacts to the unnamed intermittent channel in the eastern study area falls under jurisdiction of CDFG and will require that the City apply for a Lake or Streambed Alteration Agreement from CDFG.</p>	Wastewater Management Division	DARM	Confirm the City obtains a Section 1602 Streambed Alteration Agreement prior to implementing any action that may alter a stream or lake within the jurisdictional limits of CDFG.	Prior to construction
<p>Measure 4.5.12: Implement Measures 4.5.1 through 4.5.11.</p>	See Mitigation Measures 4.5.1 through 4.5.11	See Mitigation Measures 4.5.1 through 4.5.11	See Mitigation Measures 4.5.1 through 4.5.11	See Mitigation Measures 4.5.1 through 4.5.11
Transportation and Traffic				
<p>Measure 4.6.1a: Prior to construction, the City of Fresno and its contractor(s) shall coordinate with the appropriate local government departments, utility districts, and agencies regarding the timing of construction projects that would occur near project sites. Specific measures to mitigate potential significant impacts would be determined as part of the interagency coordination, and could include measures such as employing flaggers during key construction periods, designating alternate haul routes, and providing more outreach and community noticing.</p>	Wastewater Management Division Contractor	Traffic Engineering Planning Division	Confirm that prior to construction, the City of Fresno and its contractor(s) coordinate with the appropriate local government departments, utility districts, and agencies. Confirm the determination of specific mitigation measures through interagency coordination as necessary to mitigate potential significant impacts.	Prior to construction
<p>Measure 4.6.1b: The following requirements shall be incorporated into contract specifications prepared by the City for the project:</p> <ul style="list-style-type: none"> The contractor(s) shall obtain any necessary road encroachment permits prior to construction and shall comply with conditions of approval attached to project implementation. As part of the road encroachment permit process, the contractor(s) shall submit a traffic safety / traffic management plan (for work in the public right-of-way) to the agencies having jurisdiction over the affected roads. Elements of the plan shall likely include, but are not necessarily limited to, the following: <ul style="list-style-type: none"> Develop circulation and detour plans to minimize impacts to local street circulation. Use haul routes minimizing truck traffic on local roadways to the extent possible. Use flaggers and/or signage to guide vehicles through and/or around the construction zone. 	Wastewater Management Division Contractors	Traffic Engineering Planning Division	Confirm the obtainment of any necessary road encroachment permits. Confirm the development and implementation of a traffic safety/traffic management plan for.	Prior to construction

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<ul style="list-style-type: none"> ○ Control and monitor construction vehicle movements through the enforcement of standard construction specifications by periodic onsite inspections. ○ To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule truck trips outside of peak morning and evening commute hours. ○ Limit lane closures during peak hours to the extent possible. Delays would also be experienced by drivers during off-peak hours, but because of the lower volume, fewer people would be affected by the delays during those periods. Restore roads and streets to normal operation by covering trenches with steel plates outside of allowed working hours or when work is not in progress. ○ Limit, where possible, the pipeline construction work zone to a width that, at a minimum, maintains alternate one-way traffic flow past the construction zone. Parking may be prohibited if necessary to facilitate construction activities or traffic movement. If the work zone width will not allow a 12 to 15-foot-wide paved travel lane, then the road will be closed in accordance with a traffic control plan approved by the City Traffic Engineer. ○ Include signage to direct pedestrians and bicyclists around project construction work zones that displace sidewalks and/or bike lanes. ○ Store all equipment and materials in designated contractor staging areas on or adjacent to the worksite, in such a manner to minimize obstruction to traffic. ○ Comply with roadside safety protocols. Provide "Road Work Ahead" warning signs and speed control (including signs informing drivers of state-legislated double fines for speed infractions in a construction zone) to achieve required speed reductions for safe traffic flow through the work zone. ○ Coordinate with facility owners or administrators of sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. Provide advance notification to the facility owner or operator of the timing, location, and duration of construction activities and the locations of detours and lane closures. ○ Coordinate construction activities, to extent possible, to minimize traffic disturbances adjacent to schools (e.g., do work during summer months when there is less activity at schools). For construction activities that occur during the school year, then at the start and end of the school day at schools adjacent to a pipeline project, the contractor(s) will provide flaggers in the school areas to ensure traffic and pedestrian safety. ○ Coordinate with the Fresno Area Express so the transit 				

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<p>provider can temporarily relocate bus routes or bus stops in work zones as it deems necessary.</p> <ul style="list-style-type: none"> ○ To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule construction of project elements to avoid overlapping maximum trip-generation construction phases. 				
Measure 4.6.2: Implement Mitigation Measure 4.6.1.	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1
Measure 4.6.3: Implement Mitigation Measure 4.6.1.	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1
Measure 4.6.4: Implement Mitigation Measure 4.6.1.	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1
Measure 4.6.5: Implement Mitigation Measure 4.6.1.	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1
Air Quality and Climate Change				
<p>Measure 4.7.1a: The City of Fresno shall comply with Regulation VIII Rule 8011 and implement the following dust control measures during all future project construction:</p>	<p>Wastewater Management Division Contractor</p>	<p>Building and Safety Services Division Planning Division SJVAPCD</p>	<p>Confirm compliance with Regulation VIII Rule 8011 and submit a Dust Control Plan subject to review and approval of the SJVAPCD at least 30 days prior to the start of any construction activity on a site that includes 40 acres or more of disturbed surface area. Confirm the implementation of specific control measures for construction, excavation, extraction, and other earthmoving activities as required by the SJVAPCD. Confirm the implementation of enhanced and additional control measures for construction emissions of PM₁₀ where feasible.</p>	<p>Prior to construction Ongoing: construction</p>
<p>Specific control measures for construction, excavation, extraction, and other earthmoving activities required by the SJVAPCD include:</p>				
<ul style="list-style-type: none"> • The City of Fresno shall submit a Dust Control Plan subject to review and approval of the San Joaquin Valley Air Pollution Control District (SJVAPCD) at least 30 days prior to the start of any construction activity on a site that includes 40 acres or more of disturbed surface area. • All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover in order to comply with Regulation VIII's 20 percent opacity limitation. • All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water (at least two times per day) or by presoaking. • When materials are transported offsite, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. • All operations shall limit or expeditiously remove the accumulation 				

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<p>of mud or dirt from adjacent public streets at the end of each workday. However, the use of blower devices is expressly forbidden, and the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.</p> <ul style="list-style-type: none"> Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. Any site with 150 or more vehicle trips per day shall prevent carryout and trackout. 				
<p>Enhanced and additional control measures for construction emissions of PM10 shall be implemented where feasible. These measures include:</p> <ul style="list-style-type: none"> Limit traffic speeds on unpaved roads to 15 miles per hour (mph). Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site. Install wind breaks at windward side(s) of construction areas. Suspend excavation and grading activity when winds exceed 20 mph. Limit area subject to excavation, grading, and other construction activity at any one time. 				
<p>Measure 4.7.1b: Implementation Plans prepared by the City of Fresno for this project shall comply with Rule 9510 Indirect Source Review. Compliance with Rule 9510 would require reductions of 20% of the nitrogen oxide (NO_x) construction emissions and 45% of the PM₁₀ construction exhaust emissions. If these emission reductions are not met, then the City of Fresno shall pay the required mitigation fees by the SJVAPCD.</p>	<p>Wastewater Management Division Contractor</p>	<p>Building and Safety Services Division Planning Division</p>	<p>Confirm that Implementation Plans prepared by the City comply with Rule 9510 Indirect Source Review. Confirm reductions of 20% of the nitrogen oxide (NO_x) construction emissions and 45% of the PM₁₀ construction exhaust emissions or payment of the required SJVAPCD mitigation fees if the emissions reductions are not met.</p>	<p>Prior to construction</p>
<p>Measure 4.7.1c: Off-road construction equipment used on site achieve fleet average emissions equal to or less than the Tier II emissions standard of 4.8 NO_x grams per horsepower per hour (g/hp-hr).</p>	<p>Wastewater Management Division Contractor</p>	<p>Building and Safety Services Division Planning Division</p>	<p>Confirm that off-road construction equipment used on site achieves fleet average emissions equal to or less than the Tier II emissions standard.</p>	<p>Ongoing: construction</p>
<p>Measure 4.7.6: Implement Mitigation Measure 4.7.1.</p>	<p>See Mitigation Measure 4.7.1</p>	<p>See Mitigation Measure 4.7.1</p>	<p>See Mitigation Measure 4.7.1</p>	<p>See Mitigation Measure 4.7.1</p>

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Noise				
<p>Measure 4.8.1: The City and its contractors shall implement the following measures when project-related construction is planned to occur within the City limits and/or within 1,500 feet of sensitive receptors:</p> <ul style="list-style-type: none"> • Sensitive receptors (residences, residential areas, schools, and hospitals) within 1,500 of project construction activities shall be identified and mapped, and this information shall be used to minimize noise impacts to sensitive receptors. • Construction activities shall meet municipal code requirements related to noise. Construction activities shall be limited to between 7 a.m. and 6 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 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 sensitive receptors including residences, schools, and hospitals. • If construction were to occur near a school, the construction contractor shall coordinate with the most noise producing construction activities with school administration in order to limit disturbance to the campus. 	<p>Wastewater Management Division Contractor</p>	<p>Building and Safety Services Division Planning Division</p>	<p>Confirm that sensitive receptors within 1,500 of project construction activities shall be identified and mapped, and this information shall be used to minimize noise impacts to sensitive receptors. Confirm that construction activities meet municipal code requirements related to noise. Confirm construction equipment noise is minimized. Confirm that construction contractors locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby sensitive receptors. Confirm that if construction were to occur near a school, the construction contractor coordinates with the most noise producing construction activities with school administration in order to limit disturbance to the campus.</p>	<p>Prior to construction On-going: construction</p>
<p>Measure 4.8.2: The City and its contractors shall implement the following measures when project-related construction is planned to occur within the City limits and/or within 1,500 feet of sensitive receptors:</p> <ul style="list-style-type: none"> • Sensitive receptors (residences, residential areas, schools, and hospitals) within 1,500 of project construction activities shall be identified and mapped, and this information shall be used to minimize ground-borne vibration and ground-borne noise impacts to sensitive receptors. • Limit jack and bore drilling to 45 feet from sensitive receptors and 15 feet from any structures. • If jack and bore drilling must occur within 15 feet of any structure, the construction contractor shall conduct crack surveys before drilling to prevent potential architectural damage to nearby structures. The surveys shall be done by photographs, video tape, or visual inventory, and shall include inside as well as outside locations. All existing cracks in walls, floors, and driveways shall be documented with sufficient detail for comparison after construction to determine whether actual vibration damage occurred. A post-construction survey shall be conducted to document the condition of the surrounding buildings after the construction is complete. 	<p>Wastewater Management Division Contractor</p>	<p>Building and Safety Services Division Planning Division</p>	<p>Confirm that sensitive receptors (residences, residential areas, schools, and hospitals) within 1,500 of project construction activities are identified and mapped, and this information is used to minimize ground-borne vibration and ground-borne noise impacts to sensitive receptors. Confirm that jack and bore drilling is limited to 45 feet from sensitive receptors and 15 feet from any structures. Confirm that if jack and bore drilling must occur within 15 feet of any structure, the construction contractor shall conduct crack surveys before and after drilling to prevent potential architectural damage to nearby structures. Confirm that the surveys are done by photographs, video tape, or visual inventory, and shall include inside as well as outside locations.</p>	<p>Prior to construction On-going: construction</p>

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Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
Measure 4.8.5: Implement Mitigation Measures 4.8.1 and 4.8.2.	See Mitigation Measures 4.8.1 and 4.8.2	See Mitigation Measures 4.8.1 and 4.8.2	See Mitigation Measures 4.8.1 and 4.8.2	See Mitigation Measures 4.8.1 and 4.8.2
Hazards and Hazardous Materials				
<p>Measure 4.9.1a: Prior to final project design and any earth disturbing activities, the City shall conduct a Phase I Site Assessment. The Phase I Site Assessment shall be prepared by a Registered Environmental Assessor (REA) or other qualified professional to assess the potential for contaminated soil or groundwater conditions at the project site. The Phase I Site Assessment shall include a review of appropriate federal and State hazardous materials databases, as well as relevant local hazardous material site databases for hazardous waste on-site and off-site locations within a one quarter mile radius of the project site. The Phase I Site Assessment shall also include a review of existing or past land uses and areal photographs, summary of results of reconnaissance site visit(s), and review of other relevant existing information that could identify the potential existence of contaminated soil or groundwater.</p> <p>If no contaminated soil or groundwater is identified or if the Phase I Site Assessment does not recommend any further investigation then the City shall proceed with final project design and construction.</p>	Wastewater Management Division	Building and Safety Services Division	Confirm the completion of a Phase I Site Assessment by a Registered Environmental Assessor prior to final project design and any earth disturbing activities.	Prior to final design approval
<p>Measure 4.9.1b: If existing soil or groundwater contamination is identified and if the Phase 1 Site Assessment recommends further review, the City shall retain a REA to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations prior to any earth disturbing activities. The environmental professional shall prepare a report that includes, but is not limited to, activities performed for the assessment, summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any contaminated materials during construction.</p>	Wastewater Management Division	Building and Safety Services Division Planning Division	Confirm that if existing soil or groundwater contamination is identified and if the Phase 1 Site Assessment recommends further review that a REA is retained to conduct follow-up sampling to characterize the contamination and to identify any required remediation. Confirm that the REA prepares a report that includes, but is not limited to, activities performed for the assessment, summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any contaminated materials during construction.	Prior to construction
<p>Measure 4.9.1c: If unidentified or suspected contaminated soil or groundwater is encountered during construction activities, work shall be halted in the area of potential exposure, and the type and extent of contamination shall be identified by a REA. The environmental professional shall prepare a report that includes, but is not limited to, activities performed for the assessment, summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any contaminated materials during construction.</p>	Wastewater Management Division Contractor	Building and Safety Services Division Planning Division	Confirm that if unidentified or suspected contaminated soil or groundwater is encountered during construction activities, work shall be halted in the area of potential exposure, and the type and extent of contamination shall be identified by a REA. Confirm that the REA prepares a report that includes, but is not limited to, activities performed for the assessment, summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any contaminated materials during construction.	Ongoing: construction
<p>Measure 4.9.1d: Groundwater recharge basins shall not be located within an area that is listed as a hazardous materials site on Leaking Underground Storage Tank (LUST), Spills, Leaks and Investigation Cleanup (SLIC), Cortese, or other relevant databases.</p>	Wastewater Management Division	Planning Division	Confirm that groundwater recharge basins are not located within an area that is listed as a hazardous materials site.	Prior to final design approval

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
Measure 4.9.4: Proposed recycled water facilities shall be sited at least one quarter mile from existing or proposed schools.	Wastewater Management Division	Planning Division CVRWQCB	Confirm that proposed recycled water facilities are not sited at least one quarter mile from existing or proposed schools.	Prior to final design approval
Measure 4.9.5: Groundwater recharge basins and other surface water features shall be sited consistent with the guidance contained in the Federal Aviation Administration Advisory Circular 150/5200-33b Hazardous Wildlife Attractants on or Near Airports, including filing Form 7460-1 with the Federal Aviation Administration, as applicable.	Wastewater Management Division	Planning Division	Confirm that groundwater recharge basins and other surface water features are sited consistent with the guidance contained in the Federal Aviation Administration Advisory Circular 150/5200-33b Hazardous Wildlife Attractants on or Near Airports, as applicable.	Prior to final design approval
Measure 4.9.6: Implement Mitigation Measure 4.6.1.	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1	See Mitigation Measure 4.6.1
Public Services and Utilities				
Measure 4.10.5: Prior to construction of individual projects, the City shall prepare and implement a Utility Avoidance Plan. The plan would ensure that individual project specifications contain a detailed engineering and construction plan to avoid utility conflicts. Measures to avoid utility conflicts include but might not be limited to: <ul style="list-style-type: none"> • Verification of utility locations through field survey and use of the Underground Service Alert (USA). • Specifications prepared as part of the design plans that include procedures for the excavation, support, and fill of areas around utility cables and pipes. All affected utilities shall be notified of construction plans and schedule. Arrangements may be made with these entities regarding protection, relocation, or temporary disconnection of services. • Notification of residents and businesses in the proposed project construction area of any planned utility service disruption two to four days in advance, in conformance with County and state standards. • Reconnection of any disconnected cables and lines as soon as possible. 	Wastewater Management Division	DPU	Confirm the preparation and implementation of a Utility Avoidance Plan that ensures that individual project specifications contain a detailed engineering and construction plan to avoid utility conflicts.	Prior to construction
Measure 4.10.7: Implement Mitigation Measure 4.10.5.	See Mitigation Measure 4.10.5	See Mitigation Measure 4.10.5	See Mitigation Measure 4.10.5	See Mitigation Measure 4.10.5
Aesthetic Resources				
Measure 4.11.2a: Following construction activities, the implementing agencies shall restore disturbed areas by reestablishing pre-existing conditions including topography, repaving roadways, replanting trees, and/or reseeding with a native seed mix typical of the immediate surrounding area.	Wastewater Management Division Contractor	PWD DARM	Confirm that Following construction activities, disturbed areas are restored.	Following completion of construction
Measure 4.11.2b: During facility design, the City shall prepare a landscape plan for each aboveground project facility. The landscape plan shall include measures to restore disturbed areas by reestablishing existing topography, including replanting trees and/or reseeding with a native seed mix typical of the immediately surrounding area. The landscape plan shall include a required seed	Wastewater Management Division Contractor	DARM PWD	Confirm that a landscape plan for each aboveground project facility is prepared. Confirm that landscape plan includes measures to restore disturbed areas. Confirm the landscape plan includes a required seed mix and plant palate. Confirm that a vegetation screening is	Prior to final design approval Following completion of construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
<p>mix and plant palate. Vegetation screening shall be included in the landscape plan in order to shield proposed aboveground facilities from public view. The landscape plan shall include a monitoring plan to ensure that the site restoration and the establishment of vegetation is successful.</p>			<p>included in the landscape plan to shield proposed aboveground facilities from public view. Confirm the landscape plan includes a monitoring plan to ensure that the site restoration and the establishment of vegetation is successful.</p>	
<p>Measure 4.11.2c: The implementing agencies shall ensure that recycled water facility designs include non-glare exterior coatings that are colored an earth tone to blend in with the surrounding landscape.</p>	<p>Wastewater Management Division</p>	<p>DPU DARM</p>	<p>Confirm that the recycled water facility designs include non-glare exterior coatings that are colored an earth tone.</p>	<p>Prior to final design approval Following completion of construction</p>
<p>Measure 4.11.3: The proposed project facilities, when constructed, shall adhere to City policies relating to the shielding of light to reduce any potential negative effects from new light sources. 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.</p>	<p>Wastewater Management Division</p>	<p>DARM</p>	<p>Confirm that project facilities adhere to City policies. Confirm that security lighting with directional shields to concentrate lighting toward the project site are installed. Confirm that the nighttime security and associated parking lighting fixtures are equipped with directional shields that aim light downward and away from adjacent properties and public roadways. Confirm that lighting fixtures are placed to concentrate light onsite to avoid spillover onto adjacent properties and public roadways.</p>	<p>Prior to final design approval Following completion of construction</p>
<p>Measure 4.11.4: Implement Mitigation Measures 4.11.2 and 4.11.3</p>	<p>See Mitigation Measures 4.11.2 and 4.11.3</p>	<p>See Mitigation Measures 4.11.2 and 4.11.3</p>	<p>See Mitigation Measures 4.11.2 and 4.11.3</p>	<p>See Mitigation Measures 4.11.2 and 4.11.3</p>
Cultural Resources				
<p>Measure 4.12.1a: All properties slated for development or other ground-disturbing activities in the Master Plan Area that contain resources 45 years old or older shall be surveyed and evaluated for their potential historic significance on a project-specific basis prior to approval of project plans. The survey shall be carried out by a qualified historian or architectural historian meeting the Secretary of the Interior's Standards for Architectural History. The City's Planning and Historic Preservation Staff shall be consulted with regarding any projects that may affect a historic resource within the Master Plan Area. The City's Historic Preservation Commission shall also be consulted, as appropriate, regarding any projects slated to impact areas of high sensitivity for historic resources. Demolition or substantial alteration of all previously recorded historic resources, including significant historic resources are encountered during the survey and evaluation efforts shall be avoided. Any alterations, including relocation, to historic buildings or structures shall conform to the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings</i> (NPS, 1995). If avoidance of identified historic resources is deemed infeasible, the City shall prepare a treatment plan to include, but not limited to, photo-documentation and public interpretation of the resource.</p>	<p>Wastewater Management Division</p>	<p>Planning Division Historic Preservation</p>	<p>Confirm that all properties slated for development or other ground-disturbing activities in the Master Plan Area that contain resources 45 years old or older are surveyed and evaluated for their potential historic significance on a project-specific basis prior to approval of project plans. Confirm that the survey is carried out by a qualified historian or architectural historian meeting the Secretary of the Interior's Standards for Architectural History. Confirm that the City's Planning and Historic Preservation Staff is consulted with regarding any projects that may affect a historic resource within the Master Plan Area. Confirm that the City's Historic Preservation Commission is also consulted, as appropriate, regarding any projects slated to impact areas of high sensitivity for historic resources. Confirm that demolition or substantial alteration of all previously recorded historic resources, including significant historic resources are encountered during the survey and evaluation efforts are avoided. Confirm that any alterations, including relocation, to historic buildings or structures conform to the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic</i></p>	<p>Prior to final design approval Prior to construction</p>

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
<p>Measure 4.12.1b: If avoidance or relocation of an historic resource is determined infeasible, a qualified architectural historian shall be retained to document the affected historic resource in accordance with the National Park Service's Historic American Buildings Survey (HABS) and/or Historic American Engineering Record (HAER) standards. Such standards typically include large format photography using (4x5) negatives, written data, and copies of original plans if available. The HABS/HAER documentation packages shall be archived at local libraries and historical repositories, as well as the Southern San Joaquin Valley Information Center of the California Historical Resources Information System, the City's Historic Preservation archives and Planning Department. Public interpretation of historic resources at their original site shall also occur in the form of a plaque, kiosk or other method of describing the building's historic or architectural importance to the general public.</p>	Wastewater Management Division	Planning Division Historic Preservation	<p><i>Buildings</i> (NPS, 1995). Confirm that if avoidance of identified historic resources is deemed infeasible, that the City prepares a treatment plan that includes, but is not limited to, photo-documentation and public interpretation of the resource.</p>	On-going: construction
<p>Measure 4.12.2a: All areas slated for development or other ground-disturbing activities shall be subject to a Phase I survey (including records search and archaeological survey) for archaeological resources on a project-specific basis prior to approval of proposed project plans. The survey shall be carried out by a qualified archaeologist in consultation with local Native American groups. If potentially significant archaeological resources are encountered during the survey, the City shall require that the resources are evaluated for their eligibility for listing on the National Register or the California Register, and that recommendations are made for treatment of these resources if found to be significant, in consultation with the appropriate Native American groups in the event that the resource is determined to be from the prehistoric period. All previously recorded prehistoric and historic-period archaeological resources, as well as any significant resources identified as a result of the survey, shall be avoided. Ground-disturbing activity in areas determined to be sensitive for cultural resources shall be monitored by a qualified archaeologist and Native American representative.</p>	Wastewater Management Division	Planning Division Historic Preservation	<p>Confirm that all areas slated for development or other ground-disturbing activities are subject to a Phase I survey (including records search and archaeological survey) for archaeological resources on a project-specific basis prior to approval of proposed project plans. Confirm that the survey is carried out by a qualified archaeologist in consultation with local Native American groups. Confirm that if potentially significant archaeological resources are encountered during the survey, that the City requires that the resources are evaluated for their eligibility for listing on the National Register or the California Register, and that recommendations are made for treatment of these resources if found to be significant, in consultation with the appropriate Native American groups in the event that the resource is determined to be from the prehistoric period. All previously recorded prehistoric and historic-period archaeological resources, as well as any significant resources identified as a result of the survey, shall be avoided. Confirm that ground-disturbing activity in areas determined to be sensitive for cultural resources are monitored by a qualified archaeologist and Native American representative.</p>	Prior to final design approval Prior to construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
<p>Measure 4.12.2b: Prior to construction a worker training program shall be implemented to inform all personnel involved with earthmoving activities the potential for prehistoric and historic-period subsurface archaeological resources to be uncovered and/or disturbed by proposed project-related earth moving; where such remains are most likely to be encountered during earth moving; and procedures to be employed if archaeological resources are discovered during excavations.</p>	<p>Wastewater Management Division Contractor</p>	<p>Planning Division Historic Preservation</p>	<p>Confirm that a worker training program is implemented prior to construction to inform all personnel involved with earthmoving activities the potential for prehistoric and historic-period subsurface archaeological resources to be uncovered.</p>	<p>Prior to construction On-going: construction</p>
<p>Measure 4.12.2c: During construction, should prehistoric or historic-period subsurface cultural resources be discovered, all activity in the vicinity of the find shall stop and a qualified archaeologist will be contacted to assess the significance of the find according to <i>CEQA Guidelines</i> Section 15064.5. If any find is determined to be significant, the proposed project proponent and the archaeologist will determine, in consultation with local Native American groups, appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered will be, as necessary and at the discretion of the consulting archaeologist and in consultation with local Native American groups, subject to scientific analysis, professional museum duration, and documentation according to current professional standards.</p>	<p>Wastewater Management Division Contractor</p>	<p>Planning Division Historic Preservation</p>	<p>Confirm that during construction, if prehistoric or historic-period subsurface cultural resources are discovered, that all activity in the vicinity of the find is stopped and a qualified archaeologist is contacted to assess the significance of the find according to <i>CEQA Guidelines</i> Section 15064.5. Confirm that if any find is determined to be significant, the proposed project proponent and the archaeologist determine, in consultation with local Native American groups, appropriate avoidance measures or other appropriate mitigation. Confirm that all significant cultural materials recovered are, as necessary and at the discretion of the consulting archaeologist and in consultation with local Native American groups, subject to scientific analysis, professional museum duration, and documentation according to current professional standards.</p>	<p>On-going: construction</p>
<p>Measure 4.12.3: If human skeletal remains are uncovered during proposed project construction, work in the vicinity of the find shall cease and the Fresno County coroner will be contacted to evaluate the remains, following the procedures and protocols set forth in Section 15064.5 (e)(1) of the <i>CEQA Guidelines</i>. If the County coroner determines that the remains are Native American, the proposed project proponent will contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641) and the Most Likely Descendant will be identified. The Most Likely Descendant will make recommendations for the treatment of any human remains.</p>	<p>Wastewater Management Division Contractor</p>	<p>Planning Division Historic Preservation</p>	<p>Confirm that if human skeletal remains are uncovered during proposed project construction, work in the vicinity of the find is stopped and the Fresno County coroner is contacted to evaluate the remains, following the procedures and protocols set forth in Section 15064.5 (e)(1) of the <i>CEQA Guidelines</i>. Confirm that if the County coroner determines that the remains are Native American, Native American Heritage Commission is contacted, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641) and the Most Likely Descendant is identified. Confirm that the Most Likely Descendant has made recommendations for the treatment of any human remains.</p>	<p>On-going: construction</p>
<p>Measure 4.12.4a: If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, all ground disturbing activities within 50 feet of the find shall be halted until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate salvage measures in consultation with the City of Fresno and in conformance with Society of Vertebrate Paleontology Guidelines (SVP, 1995; SVP, 1996).</p>	<p>Wastewater Management Division Contractor</p>	<p>Planning Division Historic Preservation</p>	<p>Confirm that If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, all ground disturbing activities within 50 feet of the find are halted until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate salvage measures in consultation with the City of Fresno and in conformance with Society of Vertebrate Paleontology Guidelines (SVP, 1995; SVP, 1996).</p>	<p>On-going: construction</p>

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
<p>Measure 4.12.4b: Prior to all Master Plan facilities involving excavations greater than 6 feet in depth (including pipeline crossings and groundwater reuse basins), the City of Fresno shall retain a qualified paleontologist to design a monitoring and mitigation program. The paleontological resource monitoring and mitigation program should include:</p> <ul style="list-style-type: none"> • A worker training program to inform all personnel involved with earthmoving activities the potential for fossil remains being uncovered and/or disturbed by proposed project-related earth moving; where such remains are most likely to be encountered during earth moving; and procedures to be employed if fossil remains are discovered during excavations. • Preconstruction coordination with appropriate agencies, and identification of an institution willing and able to accept fossil specimens collected during the mitigation program. The institution shall serve as an information repository over the course of the proposed project. • A schedule and plan for monitoring earth-moving activities, and a provision that monitoring personnel have the authority to halt construction activities should a potential fossil-find be unearthed. • Emergency discovery procedures, including survey and record keeping of fossil-finds, bulk sediment sample collection and processing, specimen identification, disposition, or museum curation of any specimens and data recovered. • Monitoring and data recovery activities shall be documented in daily monitoring reports, as well as a final mitigation monitoring report at the completion of construction activities, which shall be submitted to the City of Fresno. <p>Implementation of the mitigation program and data recovery shall occur in accordance with SVP standards (SVP, 1995; SVP, 1996).</p>	Wastewater Management Division	Planning Division Historic Preservation	Confirm that prior to all Master Plan facilities involving excavations greater than 6 feet in depth (including pipeline crossings and groundwater reuse basins), that a qualified paleontologist is retained to design a monitoring and mitigation program.	Prior to construction On-going: construction
Measure 4.12.5: Implement Mitigation Measure 4.12.1.	See Mitigation Measure 4.12.1	See Mitigation Measure 4.12.1	See Mitigation Measure 4.12.1	See Mitigation Measure 4.12.1
Measure 4.12.5: Implement Measures 4.12.2, 4.12.3, and 4.12.4.	See Mitigation Measures 4.12.2 through 4.12.4	See Mitigation Measures 4.12.2 through 4.12.4	See Mitigation Measures 4.12.2 through 4.12.4	See Mitigation Measures 4.12.2 through 4.12.4

Appendix B
Letter 7 Attachment
Federal Aviation Administration Advisory
Circular 150/5200-33b





U.S. Department
of Transportation

**Federal Aviation
Administration**

Advisory Circular

**Subject: HAZARDOUS WILDLIFE
ATTRACTANTS ON OR NEAR
AIRPORTS**

Date: 8/28/2007

AC No: 150/5200-33B

Initiated by: AAS-300 **Change:**

1. PURPOSE. This Advisory Circular (AC) provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants. Appendix 1 provides definitions of terms used in this AC.

2. APPLICABILITY. The Federal Aviation Administration (FAA) recommends that public-use airport operators implement the standards and practices contained in this AC. The holders of Airport Operating Certificates issued under Title 14, Code of Federal Regulations (CFR), Part 139, Certification of Airports, Subpart D (Part 139), may use the standards, practices, and recommendations contained in this AC to comply with the wildlife hazard management requirements of Part 139. Airports that have received Federal grant-in-aid assistance must use these standards. The FAA also recommends the guidance in this AC for land-use planners, operators of non-certificated airports, and developers of projects, facilities, and activities on or near airports.

3. CANCELLATION. This AC cancels AC 150/5200-33A, *Hazardous Wildlife Attractants on or near Airports*, dated July 27, 2004.

4. PRINCIPAL CHANGES. This AC contains the following major changes, which are marked with vertical bars in the margin:

- a. Technical changes to paragraph references.
- b. Wording on storm water detention ponds.
- c. Deleted paragraph 4-3.b, *Additional Coordination*.

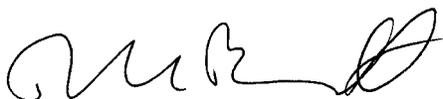
5. BACKGROUND. Information about the risks posed to aircraft by certain wildlife species has increased a great deal in recent years. Improved reporting, studies, documentation, and statistics clearly show that aircraft collisions with birds and other wildlife are a serious economic and public safety problem. While many species of wildlife can pose a threat to aircraft safety, they are not equally hazardous. Table 1

ranks the wildlife groups commonly involved in damaging strikes in the United States according to their relative hazard to aircraft. The ranking is based on the 47,212 records in the FAA National Wildlife Strike Database for the years 1990 through 2003. These hazard rankings, in conjunction with site-specific Wildlife Hazards Assessments (WHA), will help airport operators determine the relative abundance and use patterns of wildlife species and help focus hazardous wildlife management efforts on those species most likely to cause problems at an airport.

Most public-use airports have large tracts of open, undeveloped land that provide added margins of safety and noise mitigation. These areas can also present potential hazards to aviation if they encourage wildlife to enter an airport's approach or departure airspace or air operations area (AOA). Constructed or natural areas—such as poorly drained locations, detention/retention ponds, roosting habitats on buildings, landscaping, odor-causing rotting organic matter (putrescible waste) disposal operations, wastewater treatment plants, agricultural or aquaculture activities, surface mining, or wetlands—can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape. Even small facilities, such as fast food restaurants, taxicab staging areas, rental car facilities, aircraft viewing areas, and public parks, can produce substantial attractions for hazardous wildlife.

During the past century, wildlife-aircraft strikes have resulted in the loss of hundreds of lives worldwide, as well as billions of dollars in aircraft damage. Hazardous wildlife attractants on and near airports can jeopardize future airport expansion, making proper community land-use planning essential. This AC provides airport operators and those parties with whom they cooperate with the guidance they need to assess and address potentially hazardous wildlife attractants when locating new facilities and implementing certain land-use practices on or near public-use airports.

6. MEMORANDUM OF AGREEMENT BETWEEN FEDERAL RESOURCE AGENCIES. The FAA, the U.S. Air Force, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture - Wildlife Services signed a Memorandum of Agreement (MOA) in July 2003 to acknowledge their respective missions in protecting aviation from wildlife hazards. Through the MOA, the agencies established procedures necessary to coordinate their missions to address more effectively existing and future environmental conditions contributing to collisions between wildlife and aircraft (wildlife strikes) throughout the United States. These efforts are intended to minimize wildlife risks to aviation and human safety while protecting the Nation's valuable environmental resources.



DAVID L. BENNETT
Director, Office of Airport Safety
and Standards

Table 1. Ranking of 25 species groups as to relative hazard to aircraft (1=most hazardous) based on three criteria (damage, major damage, and effect-on-flight), a composite ranking based on all three rankings, and a relative hazard score. Data were derived from the FAA National Wildlife Strike Database, January 1990–April 2003.¹

Species group	Ranking by criteria			Composite ranking ²	Relative hazard score ³
	Damage ⁴	Major damage ⁵	Effect on flight ⁶		
Deer	1	1	1	1	100
Vultures	2	2	2	2	64
Geese	3	3	6	3	55
Cormorants/pelicans	4	5	3	4	54
Cranes	7	6	4	5	47
Eagles	6	9	7	6	41
Ducks	5	8	10	7	39
Osprey	8	4	8	8	39
Turkey/pheasants	9	7	11	9	33
Hérons	11	14	9	10	27
Hawks (buteos)	10	12	12	11	25
Gulls	12	11	13	12	24
Rock pigeon	13	10	14	13	23
Owls	14	13	20	14	23
H. lark/s. bunting	18	15	15	15	17
Crows/ravens	15	16	16	16	16
Coyote	16	19	5	17	14
Mourning dove	17	17	17	18	14
Shorebirds	19	21	18	19	10
Blackbirds/starling	20	22	19	20	10
American kestrel	21	18	21	21	9
Meadowlarks	22	20	22	22	7
Swallows	24	23	24	23	4
Sparrows	25	24	23	24	4
Nighthawks	23	25	25	25	1

¹ Excerpted from the *Special Report for the FAA, "Ranking the Hazard Level of Wildlife Species to Civil Aviation in the USA: Update #1, July 2, 2003"*. Refer to this report for additional explanations of criteria and method of ranking.

² Relative rank of each species group was compared with every other group for the three variables, placing the species group with the greatest hazard rank for ≥ 2 of the 3 variables above the next highest ranked group, then proceeding down the list.

³ Percentage values, from Tables 3 and 4 in Footnote 1 of the *Special Report*, for the three criteria were summed and scaled down from 100, with 100 as the score for the species group with the maximum summed values and the greatest potential hazard to aircraft.

⁴ Aircraft incurred at least some damage (destroyed, substantial, minor, or unknown) from strike.

⁵ Aircraft incurred damage or structural failure, which adversely affected the structure strength, performance, or flight characteristics, and which would normally require major repair or replacement of the affected component, or the damage sustained makes it inadvisable to restore aircraft to airworthy condition.

⁶ Aborted takeoff, engine shutdown, precautionary landing, or other.

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SECTION 1.

GENERAL SEPARATION CRITERIA FOR HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS.

1-1. INTRODUCTION. When considering proposed land uses, airport operators, local planners, and developers must take into account whether the proposed land uses, including new development projects, will increase wildlife hazards. Land-use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife strikes.

The FAA recommends the minimum separation criteria outlined below for land-use practices that attract hazardous wildlife to the vicinity of airports. Please note that FAA criteria include land uses that cause movement of hazardous wildlife onto, into, or across the airport's approach or departure airspace or air operations area (AOA). (See the discussion of the synergistic effects of surrounding land uses in Section 2-8 of this AC.)

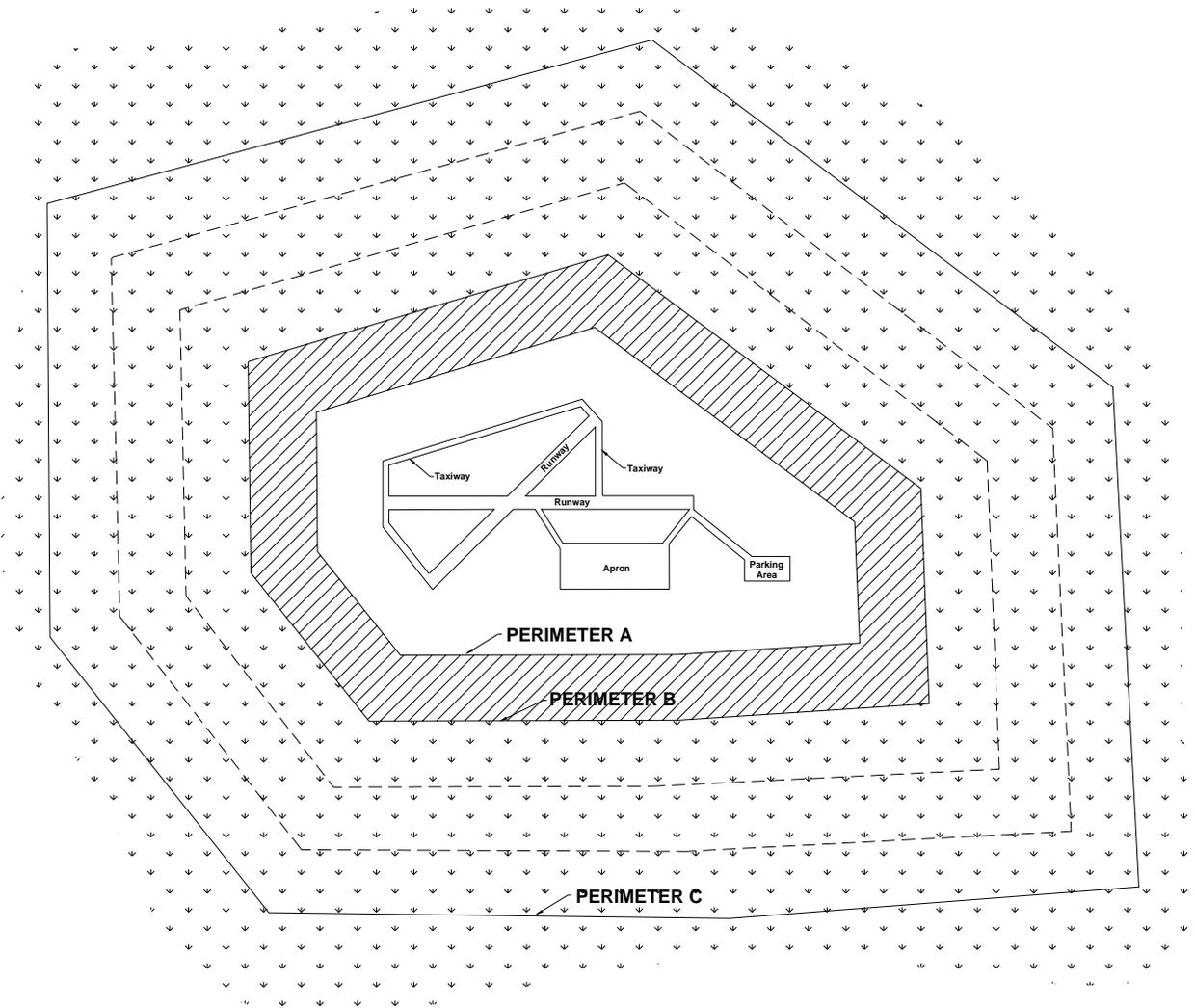
The basis for the separation criteria contained in this section can be found in existing FAA regulations. The separation distances are based on (1) flight patterns of piston-powered aircraft and turbine-powered aircraft, (2) the altitude at which most strikes happen (78 percent occur under 1,000 feet and 90 percent occur under 3,000 feet above ground level), and (3) National Transportation Safety Board (NTSB) recommendations.

1-2. AIRPORTS SERVING PISTON-POWERED AIRCRAFT. Airports that do not sell Jet-A fuel normally serve piston-powered aircraft. Notwithstanding more stringent requirements for specific land uses, the FAA recommends a separation distance of 5,000 feet at these airports for any of the hazardous wildlife attractants mentioned in Section 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between an airport's AOA and the hazardous wildlife attractant. Figure 1 depicts this separation distance measured from the nearest aircraft operations areas.

1-3. AIRPORTS SERVING TURBINE-POWERED AIRCRAFT. Airports selling Jet-A fuel normally serve turbine-powered aircraft. Notwithstanding more stringent requirements for specific land uses, the FAA recommends a separation distance of 10,000 feet at these airports for any of the hazardous wildlife attractants mentioned in Section 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between an airport's AOA and the hazardous wildlife attractant. Figure 1 depicts this separation distance from the nearest aircraft movement areas.

1-4. PROTECTION OF APPROACH, DEPARTURE, AND CIRCLING AIRSPACE. For all airports, the FAA recommends a distance of 5 statute miles between the farthest edge of the airport's AOA and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace.

Figure 1. Separation distances within which hazardous wildlife attractants should be avoided, eliminated, or mitigated.



PERIMETER A: For airports serving piston-powered aircraft, hazardous wildlife attractants must be 5,000 feet from the nearest air operations area.

PERIMETER B: For airports serving turbine-powered aircraft, hazardous wildlife attractants must be 10,000 feet from the nearest air operations area.

PERIMETER C: 5-mile range to protect approach, departure and circling airspace.

SECTION 2.

LAND-USE PRACTICES ON OR NEAR AIRPORTS THAT POTENTIALLY ATTRACT HAZARDOUS WILDLIFE.

2-1. GENERAL. The wildlife species and the size of the populations attracted to the airport environment vary considerably, depending on several factors, including land-use practices on or near the airport. This section discusses land-use practices having the potential to attract hazardous wildlife and threaten aviation safety. In addition to the specific considerations outlined below, airport operators should refer to *Wildlife Hazard Management at Airports*, prepared by FAA and U.S. Department of Agriculture (USDA) staff. (This manual is available in English, Spanish, and French. It can be viewed and downloaded free of charge from the FAA's wildlife hazard mitigation web site: <http://wildlife-mitigation.tc.FAA.gov>.) And, *Prevention and Control of Wildlife Damage*, compiled by the University of Nebraska Cooperative Extension Division. (This manual is available online in a periodically updated version at: ianrwww.unl.edu/wildlife/solutions/handbook/.)

2-2. WASTE DISPOSAL OPERATIONS. Municipal solid waste landfills (MSWLF) are known to attract large numbers of hazardous wildlife, particularly birds. Because of this, these operations, when located within the separations identified in the siting criteria in Sections 1-2 through 1-4, are considered incompatible with safe airport operations.

a. Siting for new municipal solid waste landfills subject to AIR 21. Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Public Law 106-181) (AIR 21) prohibits the construction or establishment of a new MSWLF within 6 statute miles of certain public-use airports. Before these prohibitions apply, both the airport and the landfill must meet the very specific conditions described below. These restrictions do not apply to airports or landfills located within the state of Alaska.

The airport must (1) have received a Federal grant(s) under 49 U.S.C. § 47101, et. seq.; (2) be under control of a public agency; (3) serve some scheduled air carrier operations conducted in aircraft with less than 60 seats; and (4) have total annual enplanements consisting of at least 51 percent of scheduled air carrier enplanements conducted in aircraft with less than 60 passenger seats.

The proposed MSWLF must (1) be within 6 miles of the airport, as measured from airport property line to MSWLF property line, and (2) have started construction or establishment on or after April 5, 2001. Public Law 106-181 only limits the construction or establishment of some new MSWLF. It does not limit the expansion, either vertical or horizontal, of existing landfills.

NOTE: Consult the most recent version of AC 150/5200-34, *Construction or Establishment of Landfills Near Public Airports*, for a more detailed discussion of these restrictions.

- b. Siting for new MSWLF not subject to AIR 21.** If an airport and MSWLF do not meet the restrictions of Public Law 106-181, the FAA recommends against locating MSWLF within the separation distances identified in Sections 1-2 through 1-4. The separation distances should be measured from the closest point of the airport's AOA to the closest planned MSWLF cell.
- c. Considerations for existing waste disposal facilities within the limits of separation criteria.** The FAA recommends against airport development projects that would increase the number of aircraft operations or accommodate larger or faster aircraft near MSWLF operations located within the separations identified in Sections 1-2 through 1-4. In addition, in accordance with 40 CFR 258.10, owners or operators of existing MSWLF units that are located within the separations listed in Sections 1-2 through 1-4 must demonstrate that the unit is designed and operated so it does not pose a bird hazard to aircraft. (See Section 4-2(b) of this AC for a discussion of this demonstration requirement.)
- d. Enclosed trash transfer stations.** Enclosed waste-handling facilities that receive garbage behind closed doors; process it via compaction, incineration, or similar manner; and remove all residue by enclosed vehicles generally are compatible with safe airport operations, provided they are not located on airport property or within the Runway Protection Zone (RPZ). These facilities should not handle or store putrescible waste outside or in a partially enclosed structure accessible to hazardous wildlife. Trash transfer facilities that are open on one or more sides; that store uncovered quantities of municipal solid waste outside, even if only for a short time; that use semi-trailers that leak or have trash clinging to the outside; or that do not control odors by ventilation and filtration systems (odor masking is not acceptable) do not meet the FAA's definition of fully enclosed trash transfer stations. The FAA considers these facilities incompatible with safe airport operations if they are located closer than the separation distances specified in Sections 1-2 through 1-4.
- e. Composting operations on or near airport property.** Composting operations that accept only yard waste (e.g., leaves, lawn clippings, or branches) generally do not attract hazardous wildlife. Sewage sludge, woodchips, and similar material are not municipal solid wastes and may be used as compost bulking agents. The compost, however, must never include food or other municipal solid waste. Composting operations should not be located on airport property. Off-airport property composting operations should be located no closer than the greater of the following distances: 1,200 feet from any AOA or the distance called for by airport design requirements (see AC 150/5300-13, *Airport Design*). This spacing should prevent material, personnel, or equipment from penetrating any Object Free Area (OFA), Obstacle Free Zone (OFZ), Threshold Siting Surface (TSS), or Clearway. Airport operators should monitor composting operations located in proximity to the airport to ensure that steam or thermal rise does not adversely affect air traffic. On-airport disposal of compost by-products should not be conducted for the reasons stated in 2-3f.

- f. **Underwater waste discharges.** The FAA recommends against the underwater discharge of any food waste (e.g., fish processing offal) within the separations identified in Sections 1-2 through 1-4 because it could attract scavenging hazardous wildlife.
- g. **Recycling centers.** Recycling centers that accept previously sorted non-food items, such as glass, newspaper, cardboard, or aluminum, are, in most cases, not attractive to hazardous wildlife and are acceptable.
- h. **Construction and demolition (C&D) debris facilities.** C&D landfills do not generally attract hazardous wildlife and are acceptable if maintained in an orderly manner, admit no putrescible waste, and are not co-located with other waste disposal operations. However, C&D landfills have similar visual and operational characteristics to putrescible waste disposal sites. When co-located with putrescible waste disposal operations, C&D landfills are more likely to attract hazardous wildlife because of the similarities between these disposal facilities. Therefore, a C&D landfill co-located with another waste disposal operation should be located outside of the separations identified in Sections 1-2 through 1-4.
- i. **Fly ash disposal.** The incinerated residue from resource recovery power/heat-generating facilities that are fired by municipal solid waste, coal, or wood is generally not a wildlife attractant because it no longer contains putrescible matter. Landfills accepting only fly ash are generally not considered to be wildlife attractants and are acceptable as long as they are maintained in an orderly manner, admit no putrescible waste of any kind, and are not co-located with other disposal operations that attract hazardous wildlife.

Since varying degrees of waste consumption are associated with general incineration (not resource recovery power/heat-generating facilities), the FAA considers the ash from general incinerators a regular waste disposal by-product and, therefore, a hazardous wildlife attractant if disposed of within the separation criteria outlined in Sections 1-2 through 1-4.

2-3. WATER MANAGEMENT FACILITIES. Drinking water intake and treatment facilities, storm water and wastewater treatment facilities, associated retention and settling ponds, ponds built for recreational use, and ponds that result from mining activities often attract large numbers of potentially hazardous wildlife. To prevent wildlife hazards, land-use developers and airport operators may need to develop management plans, in compliance with local and state regulations, to support the operation of storm water management facilities on or near all public-use airports to ensure a safe airport environment.

- a. **Existing storm water management facilities.** On-airport storm water management facilities allow the quick removal of surface water, including discharges related to aircraft deicing, from impervious surfaces, such as pavement and terminal/hangar building roofs. Existing on-airport detention ponds collect storm water, protect water quality, and control runoff. Because they slowly release water

after storms, they create standing bodies of water that can attract hazardous wildlife. Where the airport has developed a Wildlife Hazard Management Plan (WHMP) in accordance with Part 139, the FAA requires immediate correction of any wildlife hazards arising from existing storm water facilities located on or near airports, using appropriate wildlife hazard mitigation techniques. Airport operators should develop measures to minimize hazardous wildlife attraction in consultation with a wildlife damage management biologist.

Where possible, airport operators should modify storm water detention ponds to allow a maximum 48-hour detention period for the design storm. The FAA recommends that airport operators avoid or remove retention ponds and detention ponds featuring dead storage to eliminate standing water. Detention basins should remain totally dry between rainfalls. Where constant flow of water is anticipated through the basin, or where any portion of the basin bottom may remain wet, the detention facility should include a concrete or paved pad and/or ditch/swale in the bottom to prevent vegetation that may provide nesting habitat.

When it is not possible to drain a large detention pond completely, airport operators may use physical barriers, such as bird balls, wires grids, pillows, or netting, to deter birds and other hazardous wildlife. When physical barriers are used, airport operators must evaluate their use and ensure they will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Regional Airports Division Office.

The FAA recommends that airport operators encourage off-airport storm water treatment facility operators to incorporate appropriate wildlife hazard mitigation techniques into storm water treatment facility operating practices when their facility is located within the separation criteria specified in Sections 1-2 through 1-4.

- b. New storm water management facilities.** The FAA strongly recommends that off-airport storm water management systems located within the separations identified in Sections 1-2 through 1-4 be designed and operated so as not to create above-ground standing water. Stormwater detention ponds should be designed, engineered, constructed, and maintained for a maximum 48-hour detention period after the design storm and remain completely dry between storms. To facilitate the control of hazardous wildlife, the FAA recommends the use of steep-sided, rip-rap lined, narrow, linearly shaped water detention basins. When it is not possible to place these ponds away from an airport's AOA, airport operators should use physical barriers, such as bird balls, wires grids, pillows, or netting, to prevent access of hazardous wildlife to open water and minimize aircraft-wildlife interactions. When physical barriers are used, airport operators must evaluate their use and ensure they will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Regional Airports Division Office. All vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated. If soil conditions and other requirements allow, the FAA encourages

the use of underground storm water infiltration systems, such as French drains or buried rock fields, because they are less attractive to wildlife.

- c. Existing wastewater treatment facilities.** The FAA strongly recommends that airport operators immediately correct any wildlife hazards arising from existing wastewater treatment facilities located on or near the airport. Where required, a WHMP developed in accordance with Part 139 will outline appropriate wildlife hazard mitigation techniques. Accordingly, airport operators should encourage wastewater treatment facility operators to incorporate measures, developed in consultation with a wildlife damage management biologist, to minimize hazardous wildlife attractants. Airport operators should also encourage those wastewater treatment facility operators to incorporate these mitigation techniques into their standard operating practices. In addition, airport operators should consider the existence of wastewater treatment facilities when evaluating proposed sites for new airport development projects and avoid such sites when practicable.
- d. New wastewater treatment facilities.** The FAA strongly recommends against the construction of new wastewater treatment facilities or associated settling ponds within the separations identified in Sections 1-2 through 1-4. Appendix 1 defines wastewater treatment facility as “any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes.” The definition includes any pretreatment involving the reduction of the amount of pollutants or the elimination of pollutants prior to introducing such pollutants into a publicly owned treatment works (wastewater treatment facility). During the site-location analysis for wastewater treatment facilities, developers should consider the potential to attract hazardous wildlife if an airport is in the vicinity of the proposed site, and airport operators should voice their opposition to such facilities if they are in proximity to the airport.
- e. Artificial marshes.** In warmer climates, wastewater treatment facilities sometimes employ artificial marshes and use submergent and emergent aquatic vegetation as natural filters. These artificial marshes may be used by some species of flocking birds, such as blackbirds and waterfowl, for breeding or roosting activities. The FAA strongly recommends against establishing artificial marshes within the separations identified in Sections 1-2 through 1-4.
- f. Wastewater discharge and sludge disposal.** The FAA recommends against the discharge of wastewater or sludge on airport property because it may improve soil moisture and quality on unpaved areas and lead to improved turf growth that can be an attractive food source for many species of animals. Also, the turf requires more frequent mowing, which in turn may mutilate or flush insects or small animals and produce straw, both of which can attract hazardous wildlife. In addition, the improved turf may attract grazing wildlife, such as deer and geese. Problems may also occur when discharges saturate unpaved airport areas. The resultant soft, muddy conditions can severely restrict or prevent emergency vehicles from reaching accident sites in a timely manner.

2-4. WETLANDS. Wetlands provide a variety of functions and can be regulated by local, state, and Federal laws. Normally, wetlands are attractive to many types of wildlife, including many which rank high on the list of hazardous wildlife species (Table 1).

NOTE: If questions exist as to whether an area qualifies as a wetland, contact the local division of the U.S. Army Corps of Engineers, the Natural Resources Conservation Service, or a wetland consultant qualified to delineate wetlands.

- a. Existing wetlands on or near airport property.** If wetlands are located on or near airport property, airport operators should be alert to any wildlife use or habitat changes in these areas that could affect safe aircraft operations. At public-use airports, the FAA recommends immediately correcting, in cooperation with local, state, and Federal regulatory agencies, any wildlife hazards arising from existing wetlands located on or near airports. Where required, a WHMP will outline appropriate wildlife hazard mitigation techniques. Accordingly, airport operators should develop measures to minimize hazardous wildlife attraction in consultation with a wildlife damage management biologist.
- b. New airport development.** Whenever possible, the FAA recommends locating new airports using the separations from wetlands identified in Sections 1-2 through 1-4. Where alternative sites are not practicable, or when airport operators are expanding an existing airport into or near wetlands, a wildlife damage management biologist, in consultation with the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the state wildlife management agency should evaluate the wildlife hazards and prepare a WHMP that indicates methods of minimizing the hazards.
- c. Mitigation for wetland impacts from airport projects.** Wetland mitigation may be necessary when unavoidable wetland disturbances result from new airport development projects or projects required to correct wildlife hazards from wetlands. Wetland mitigation must be designed so it does not create a wildlife hazard. The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Sections 1-2 through 1-4.
 - (1) Onsite mitigation of wetland functions.** The FAA may consider exceptions to locating mitigation activities outside the separations identified in Sections 1-2 through 1-4 if the affected wetlands provide unique ecological functions, such as critical habitat for threatened or endangered species or ground water recharge, which cannot be replicated when moved to a different location. Using existing airport property is sometimes the only feasible way to achieve the mitigation ratios mandated in regulatory orders and/or settlement agreements with the resource agencies. Conservation easements are an additional means of providing mitigation for project impacts. Typically the airport operator continues to own the property, and an easement is created stipulating that the property will be maintained as habitat for state or Federally listed species.

Mitigation must not inhibit the airport operator's ability to effectively control hazardous wildlife on or near the mitigation site or effectively maintain other aspects of safe airport operations. Enhancing such mitigation areas to attract hazardous wildlife must be avoided. The FAA will review any onsite mitigation proposals to determine compatibility with safe airport operations. A wildlife damage management biologist should evaluate any wetland mitigation projects that are needed to protect unique wetland functions and that must be located in the separation criteria in Sections 1-2 through 1-4 before the mitigation is implemented. A WHMP should be developed to reduce the wildlife hazards.

(2) Offsite mitigation of wetland functions. The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Sections 1-2 through 1-4 unless they provide unique functions that must remain onsite (see 2-4c(1)). Agencies that regulate impacts to or around wetlands recognize that it may be necessary to split wetland functions in mitigation schemes. Therefore, regulatory agencies may, under certain circumstances, allow portions of mitigation to take place in different locations.

(3) Mitigation banking. Wetland mitigation banking is the creation or restoration of wetlands in order to provide mitigation credits that can be used to offset permitted wetland losses. Mitigation banking benefits wetland resources by providing advance replacement for permitted wetland losses; consolidating small projects into larger, better-designed and managed units; and encouraging integration of wetland mitigation projects with watershed planning. This last benefit is most helpful for airport projects, as wetland impacts mitigated outside of the separations identified in Sections 1-2 through 1-4 can still be located within the same watershed. Wetland mitigation banks meeting the separation criteria offer an ecologically sound approach to mitigation in these situations. Airport operators should work with local watershed management agencies or organizations to develop mitigation banking for wetland impacts on airport property.

2-5. DREDGE SPOIL CONTAINMENT AREAS. The FAA recommends against locating dredge spoil containment areas (also known as Confined Disposal Facilities) within the separations identified in Sections 1-2 through 1-4 if the containment area or the spoils contain material that would attract hazardous wildlife.

2-6. AGRICULTURAL ACTIVITIES. Because most, if not all, agricultural crops can attract hazardous wildlife during some phase of production, the FAA recommends against the use of airport property for agricultural production, including hay crops, within the separations identified in Sections 1-2 through 1-4. . If the airport has no financial alternative to agricultural crops to produce income necessary to maintain the viability of the airport, then the airport shall follow the crop distance guidelines listed in the table titled "Minimum Distances between Certain Airport Features and Any On-Airport Agricultural Crops" found in AC 150/5300-13, *Airport Design*, Appendix 17. The cost of wildlife control and potential accidents should be weighed against the income produced by the on-airport crops when deciding whether to allow crops on the airport.

- a. Livestock production.** Confined livestock operations (i.e., feedlots, dairy operations, hog or chicken production facilities, or egg laying operations) often attract flocking birds, such as starlings, that pose a hazard to aviation. Therefore, The FAA recommends against such facilities within the separations identified in Sections 1-2 through 1-4. Any livestock operation within these separations should have a program developed to reduce the attractiveness of the site to species that are hazardous to aviation safety. Free-ranging livestock must not be grazed on airport property because the animals may wander onto the AOA. Furthermore, livestock feed, water, and manure may attract birds.
- b. Aquaculture.** Aquaculture activities (i.e. catfish or trout production) conducted outside of fully enclosed buildings are inherently attractive to a wide variety of birds. Existing aquaculture facilities/activities within the separations listed in Sections 1-2 through 1-4 must have a program developed to reduce the attractiveness of the sites to species that are hazardous to aviation safety. Airport operators should also oppose the establishment of new aquaculture facilities/activities within the separations listed in Sections 1-2 through 1-4.
- c. Alternative uses of agricultural land.** Some airports are surrounded by vast areas of farmed land within the distances specified in Sections 1-2 through 1-4. Seasonal uses of agricultural land for activities such as hunting can create a hazardous wildlife situation. In some areas, farmers will rent their land for hunting purposes. Rice farmers, for example, flood their land during waterfowl hunting season and obtain additional revenue by renting out duck blinds. The duck hunters then use decoys and call in hundreds, if not thousands, of birds, creating a tremendous threat to aircraft safety. A wildlife damage management biologist should review, in coordination with local farmers and producers, these types of seasonal land uses and incorporate them into the WHMP.

2-7. GOLF COURSES, LANDSCAPING AND OTHER LAND-USE CONSIDERATIONS.

- a. Golf courses.** The large grassy areas and open water found on most golf courses are attractive to hazardous wildlife, particularly Canada geese and some species of gulls. These species can pose a threat to aviation safety. The FAA recommends against construction of new golf courses within the separations identified in Sections 1-2 through 1-4. Existing golf courses located within these separations must develop a program to reduce the attractiveness of the sites to species that are hazardous to aviation safety. Airport operators should ensure these golf courses are monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be immediately implemented.
- b. Landscaping and landscape maintenance.** Depending on its geographic location, landscaping can attract hazardous wildlife. The FAA recommends that airport operators approach landscaping with caution and confine it to airport areas not associated with aircraft movements. A wildlife damage management biologist should review all landscaping plans. Airport operators should also monitor all landscaped areas on a continuing basis for the presence of hazardous wildlife. If

hazardous wildlife is detected, corrective actions should be immediately implemented.

Turf grass areas can be highly attractive to a variety of hazardous wildlife species. Research conducted by the USDA Wildlife Services' National Wildlife Research Center has shown that no one grass management regime will deter all species of hazardous wildlife in all situations. In cooperation with wildlife damage management biologist, airport operators should develop airport turf grass management plans on a prescription basis, depending on the airport's geographic locations and the type of hazardous wildlife likely to frequent the airport

Airport operators should ensure that plant varieties attractive to hazardous wildlife are not used on the airport. Disturbed areas or areas in need of re-vegetating should not be planted with seed mixtures containing millet or any other large-seed producing grass. For airport property already planted with seed mixtures containing millet, rye grass, or other large-seed producing grasses, the FAA recommends disking, plowing, or another suitable agricultural practice to prevent plant maturation and seed head production. Plantings should follow the specific recommendations for grass management and seed and plant selection made by the State University Cooperative Extension Service, the local office of Wildlife Services, or a qualified wildlife damage management biologist. Airport operators should also consider developing and implementing a preferred/prohibited plant species list, reviewed by a wildlife damage management biologist, which has been designed for the geographic location to reduce the attractiveness to hazardous wildlife for landscaping airport property.

- c. Airports surrounded by wildlife habitat.** The FAA recommends that operators of airports surrounded by woodlands, water, or wetlands refer to Section 2.4 of this AC. Operators of such airports should provide for a Wildlife Hazard Assessment (WHA) conducted by a wildlife damage management biologist. This WHA is the first step in preparing a WHMP, where required.
- d. Other hazardous wildlife attractants.** Other specific land uses or activities (e.g., sport or commercial fishing, shellfish harvesting, etc.), perhaps unique to certain regions of the country, have the potential to attract hazardous wildlife. Regardless of the source of the attraction, when hazardous wildlife is noted on a public-use airport, airport operators must take prompt remedial action(s) to protect aviation safety.

2-8. SYNERGISTIC EFFECTS OF SURROUNDING LAND USES. There may be circumstances where two (or more) different land uses that would not, by themselves, be considered hazardous wildlife attractants or that are located outside of the separations identified in Sections 1-2 through 1-4 that are in such an alignment with the airport as to create a wildlife corridor directly through the airport and/or surrounding airspace. An example of this situation may involve a lake located outside of the separation criteria on the east side of an airport and a large hayfield on the west side of an airport, land uses that together could create a flyway for Canada geese directly across the airspace of the airport. There are numerous examples of such situations;

therefore, airport operators and the wildlife damage management biologist must consider the entire surrounding landscape and community when developing the WHMP.

SECTION 3.

PROCEDURES FOR WILDLIFE HAZARD MANAGEMENT BY OPERATORS OF PUBLIC-USE AIRPORTS.

3.1. INTRODUCTION. In recognition of the increased risk of serious aircraft damage or the loss of human life that can result from a wildlife strike, the FAA may require the development of a Wildlife Hazard Management Plan (WHMP) when specific triggering events occur on or near the airport. Part 139.337 discusses the specific events that trigger a Wildlife Hazard Assessment (WHA) and the specific issues that a WHMP must address for FAA approval and inclusion in an Airport Certification Manual.

3.2. COORDINATION WITH USDA WILDLIFE SERVICES OR OTHER QUALIFIED WILDLIFE DAMAGE MANAGEMENT BIOLOGISTS. The FAA will use the Wildlife Hazard Assessment (WHA) conducted in accordance with Part 139 to determine if the airport needs a WHMP. Therefore, persons having the education, training, and expertise necessary to assess wildlife hazards must conduct the WHA. The airport operator may look to Wildlife Services or to qualified private consultants to conduct the WHA. When the services of a wildlife damage management biologist are required, the FAA recommends that land-use developers or airport operators contact a consultant specializing in wildlife damage management or the appropriate state director of Wildlife Services.

NOTE: Telephone numbers for the respective USDA Wildlife Services state offices can be obtained by contacting USDA Wildlife Services Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD, 20737-1234, Telephone (301) 734-7921, Fax (301) 734-5157 (<http://www.aphis.usda.gov/ws/>).

3-3. WILDLIFE HAZARD MANAGEMENT AT AIRPORTS: A MANUAL FOR AIRPORT PERSONNEL. This manual, prepared by FAA and USDA Wildlife Services staff, contains a compilation of information to assist airport personnel in the development, implementation, and evaluation of WHMPs at airports. The manual includes specific information on the nature of wildlife strikes, legal authority, regulations, wildlife management techniques, WHAs, WHMPs, and sources of help and information. The manual is available in three languages: English, Spanish, and French. It can be viewed and downloaded free of charge from the FAA's wildlife hazard mitigation web site: <http://wildlife-mitigation.tc.FAA.gov/>. This manual only provides a starting point for addressing wildlife hazard issues at airports. Hazardous wildlife management is a complex discipline and conditions vary widely across the United States. Therefore, qualified wildlife damage management biologists must direct the development of a WHMP and the implementation of management actions by airport personnel.

There are many other resources complementary to this manual for use in developing and implementing WHMPs. Several are listed in the manual's bibliography.

3-4. WILDLIFE HAZARD ASSESSMENTS, TITLE 14, CODE OF FEDERAL REGULATIONS, PART 139. Part 139.337(b) requires airport operators to conduct a Wildlife Hazard Assessment (WHA) when certain events occur on or near the airport.

Part 139.337 (c) provides specific guidance as to what facts must be addressed in a WHA.

3-5. WILDLIFE HAZARD MANAGEMENT PLAN (WHMP). The FAA will consider the results of the WHA, along with the aeronautical activity at the airport and the views of the airport operator and airport users, in determining whether a formal WHMP is needed, in accordance with Part 139.337. If the FAA determines that a WHMP is needed, the airport operator must formulate and implement a WHMP, using the WHA as the basis for the plan.

The goal of an airport's Wildlife Hazard Management Plan is to minimize the risk to aviation safety, airport structures or equipment, or human health posed by populations of hazardous wildlife on and around the airport.

The WHMP must identify hazardous wildlife attractants on or near the airport and the appropriate wildlife damage management techniques to minimize the wildlife hazard. It must also prioritize the management measures.

3-6. LOCAL COORDINATION. The establishment of a Wildlife Hazards Working Group (WHWG) will facilitate the communication, cooperation, and coordination of the airport and its surrounding community necessary to ensure the effectiveness of the WHMP. The cooperation of the airport community is also necessary when new projects are considered. Whether on or off the airport, the input from all involved parties must be considered when a potentially hazardous wildlife attractant is being proposed. Airport operators should also incorporate public education activities with the local coordination efforts because some activities in the vicinity of your airport, while harmless under normal leisure conditions, can attract wildlife and present a danger to aircraft. For example, if public trails are planned near wetlands or in parks adjoining airport property, the public should know that feeding birds and other wildlife in the area may pose a risk to aircraft.

Airport operators should work with local and regional planning and zoning boards so as to be aware of proposed land-use changes, or modification of existing land uses, that could create hazardous wildlife attractants within the separations identified in Sections 1-2 through 1-4. Pay particular attention to proposed land uses involving creation or expansion of waste water treatment facilities, development of wetland mitigation sites, or development or expansion of dredge spoil containment areas. At the very least, airport operators must ensure they are on the notification list of the local planning board or equivalent review entity for all communities located within 5 miles of the airport, so they will receive notification of any proposed project and have the opportunity to review it for attractiveness to hazardous wildlife.

3-7 COORDINATION/NOTIFICATION OF AIRMEN OF WILDLIFE HAZARDS. If an existing land-use practice creates a wildlife hazard and the land-use practice or wildlife hazard cannot be immediately eliminated, airport operators must issue a Notice to Airmen (NOTAM) and encourage the land-owner or manager to take steps to control the wildlife hazard and minimize further attraction.

SECTION 4.

FAA NOTIFICATION AND REVIEW OF PROPOSED LAND-USE PRACTICE CHANGES IN THE VICINITY OF PUBLIC-USE AIRPORTS

4-1. FAA REVIEW OF PROPOSED LAND-USE PRACTICE CHANGES IN THE VICINITY OF PUBLIC-USE AIRPORTS.

- a. The FAA discourages the development of waste disposal and other facilities, discussed in Section 2, located within the 5,000/10,000-foot criteria specified in Sections 1-2 through 1-4.
- b. For projects that are located outside the 5,000/10,000-foot criteria but within 5 statute miles of the airport's AOA, the FAA may review development plans, proposed land-use changes, operational changes, or wetland mitigation plans to determine if such changes present potential wildlife hazards to aircraft operations. The FAA considers sensitive airport areas as those that lie under or next to approach or departure airspace. This brief examination should indicate if further investigation is warranted.
- c. Where a wildlife damage management biologist has conducted a further study to evaluate a site's compatibility with airport operations, the FAA may use the study results to make a determination.

4-2. WASTE MANAGEMENT FACILITIES.

- a. **Notification of new/expanded project proposal.** Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Public Law 106-181) limits the construction or establishment of new MSWLF within 6 statute miles of certain public-use airports, when both the airport and the landfill meet very specific conditions. See Section 2-2 of this AC and AC 150/5200-34 for a more detailed discussion of these restrictions.

The Environmental Protection Agency (EPA) requires any MSWLF operator proposing a new or expanded waste disposal operation within 5 statute miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the airport operator of the proposal (40 CFR 258, *Criteria for Municipal Solid Waste Landfills*, Section 258.10, *Airport Safety*). The EPA also requires owners or operators of new MSWLF units, or lateral expansions of existing MSWLF units, that are located within 10,000 feet of any airport runway end used by turbojet aircraft, or within 5,000 feet of any airport runway end used only by piston-type aircraft, to demonstrate successfully that such units are not hazards to aircraft. (See 4-2.b below.)

When new or expanded MSWLF are being proposed near airports, MSWLF operators must notify the airport operator and the FAA of the proposal as early as possible pursuant to 40 CFR 258.

- b. Waste handling facilities within separations identified in Sections 1-2 through 1-4.** To claim successfully that a waste-handling facility sited within the separations identified in Sections 1-2 through 1-4 does not attract hazardous wildlife and does not threaten aviation, the developer must establish convincingly that the facility will not handle putrescible material other than that as outlined in 2-2.d. The FAA strongly recommends against any facility other than that as outlined in 2-2.d (enclosed transfer stations). The FAA will use this information to determine if the facility will be a hazard to aviation.
- c. Putrescible-Waste Facilities.** In their effort to satisfy the EPA requirement, some putrescible-waste facility proponents may offer to undertake experimental measures to demonstrate that their proposed facility will not be a hazard to aircraft. To date, no such facility has been able to demonstrate an ability to reduce and sustain hazardous wildlife to levels that existed before the putrescible-waste landfill began operating. For this reason, demonstrations of experimental wildlife control measures may not be conducted within the separation identified in Sections 1-2 through 1-4.

4-3. OTHER LAND-USE PRACTICE CHANGES. As a matter of policy, the FAA encourages operators of public-use airports who become aware of proposed land use practice changes that may attract hazardous wildlife within 5 statute miles of their airports to promptly notify the FAA. The FAA also encourages proponents of such land use changes to notify the FAA as early in the planning process as possible. Advanced notice affords the FAA an opportunity (1) to evaluate the effect of a particular land-use change on aviation safety and (2) to support efforts by the airport sponsor to restrict the use of land next to or near the airport to uses that are compatible with the airport.

The airport operator, project proponent, or land-use operator may use FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, or other suitable documents similar to FAA Form 7460-1 to notify the appropriate FAA Regional Airports Division Office. Project proponents can contact the appropriate FAA Regional Airports Division Office for assistance with the notification process.

It is helpful if the notification includes a 15-minute quadrangle map of the area identifying the location of the proposed activity. The land-use operator or project proponent should also forward specific details of the proposed land-use change or operational change or expansion. In the case of solid waste landfills, the information should include the type of waste to be handled, how the waste will be processed, and final disposal methods.

- a. Airports that have received Federal grant-in-aid assistance.** Airports that have received Federal grant-in-aid assistance are required by their grant assurances to take appropriate actions to restrict the use of land next to or near the airport to uses that are compatible with normal airport operations. The FAA recommends that airport operators to the extent practicable oppose off-airport land-use changes or practices within the separations identified in Sections 1-2 through 1-4 that may attract hazardous wildlife. Failure to do so may lead to noncompliance with applicable grant assurances. The FAA will not approve the placement of airport

development projects pertaining to aircraft movement in the vicinity of hazardous wildlife attractants without appropriate mitigating measures. Increasing the intensity of wildlife control efforts is not a substitute for eliminating or reducing a proposed wildlife hazard. Airport operators should identify hazardous wildlife attractants and any associated wildlife hazards during any planning process for new airport development projects.

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APPENDIX 1. DEFINITIONS OF TERMS USED IN THIS ADVISORY CIRCULAR.

1. **GENERAL.** This appendix provides definitions of terms used throughout this AC.

1. **Air operations area.** Any area of an airport used or intended to be used for landing, takeoff, or surface maneuvering of aircraft. An air operations area includes such paved areas or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiways, or apron.
2. **Airport operator.** The operator (private or public) or sponsor of a public-use airport.
3. **Approach or departure airspace.** The airspace, within 5 statute miles of an airport, through which aircraft move during landing or takeoff.
4. **Bird balls.** High-density plastic floating balls that can be used to cover ponds and prevent birds from using the sites.
5. **Certificate holder.** The holder of an Airport Operating Certificate issued under Title 14, Code of Federal Regulations, Part 139.
6. **Construct a new MSWLF.** To begin to excavate, grade land, or raise structures to prepare a municipal solid waste landfill as permitted by the appropriate regulatory or permitting agency.
7. **Detention ponds.** Storm water management ponds that hold storm water for short periods of time, a few hours to a few days.
8. **Establish a new MSWLF.** When the first load of putrescible waste is received on-site for placement in a prepared municipal solid waste landfill.
9. **Fly ash.** The fine, sand-like residue resulting from the complete incineration of an organic fuel source. Fly ash typically results from the combustion of coal or waste used to operate a power generating plant.
10. **General aviation aircraft.** Any civil aviation aircraft not operating under 14 CFR Part 119, Certification: Air Carriers and Commercial Operators.
11. **Hazardous wildlife.** Species of wildlife (birds, mammals, reptiles), including feral animals and domesticated animals not under control, that are associated with aircraft strike problems, are capable of causing structural damage to airport facilities, or act as attractants to other wildlife that pose a strike hazard
12. **Municipal Solid Waste Landfill (MSWLF).** A publicly or privately owned discrete area of land or an excavation that receives household waste and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 CFR § 257.2. An MSWLF may receive

other types wastes, such as commercial solid waste, non-hazardous sludge, small-quantity generator waste, and industrial solid waste, as defined under 40 CFR § 258.2. An MSWLF can consist of either a stand alone unit or several cells that receive household waste.

13. **New MSWLF.** A municipal solid waste landfill that was established or constructed after April 5, 2001.
14. **Piston-powered aircraft.** Fixed-wing aircraft powered by piston engines.
15. **Piston-use airport.** Any airport that does not sell Jet-A fuel for fixed-wing turbine-powered aircraft, and primarily serves fixed-wing, piston-powered aircraft. Incidental use of the airport by turbine-powered, fixed-wing aircraft would not affect this designation. However, such aircraft should not be based at the airport.
16. **Public agency.** A State or political subdivision of a State, a tax-supported organization, or an Indian tribe or pueblo (49 U.S.C. § 47102(19)).
17. **Public airport.** An airport used or intended to be used for public purposes that is under the control of a public agency; and of which the area used or intended to be used for landing, taking off, or surface maneuvering of aircraft is publicly owned (49 U.S.C. § 47102(20)).
18. **Public-use airport.** An airport used or intended to be used for public purposes, and of which the area used or intended to be used for landing, taking off, or surface maneuvering of aircraft may be under the control of a public agency or privately owned and used for public purposes (49 U.S.C. § 47102(21)).
19. **Putrescible waste.** Solid waste that contains organic matter capable of being decomposed by micro-organisms and of such a character and proportion as to be capable of attracting or providing food for birds (40 CFR §257.3-8).
20. **Putrescible-waste disposal operation.** Landfills, garbage dumps, underwater waste discharges, or similar facilities where activities include processing, burying, storing, or otherwise disposing of putrescible material, trash, and refuse.
21. **Retention ponds.** Storm water management ponds that hold water for several months.
22. **Runway protection zone (RPZ).** An area off the runway end to enhance the protection of people and property on the ground (see AC 150/5300-13). The dimensions of this zone vary with the airport design, aircraft, type of operation, and visibility minimum.
23. **Scheduled air carrier operation.** Any common carriage passenger-carrying operation for compensation or hire conducted by an air carrier or commercial

operator for which the air carrier, commercial operator, or their representative offers in advance the departure location, departure time, and arrival location. It does not include any operation that is conducted as a supplemental operation under 14 CFR Part 119 or as a public charter operation under 14 CFR Part 380 (14 CFR § 119.3).

- 24. Sewage sludge.** Any solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works. (40 CFR 257.2)
- 25. Sludge.** Any solid, semi-solid, or liquid waste generated from a municipal, commercial or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. (40 CFR 257.2)
- 26. Solid waste.** Any garbage, refuse, sludge, from a waste treatment plant, water supply treatment plant or air pollution control facility and other discarded material, including, solid liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by product material as defined by the Atomic Energy Act of 1954, as amended, (68 Stat. 923). (40 CFR 257.2)
- 27. Turbine-powered aircraft.** Aircraft powered by turbine engines including turbojets and turboprops but excluding turbo-shaft rotary-wing aircraft.
- 28. Turbine-use airport.** Any airport that sells Jet-A fuel for fixed-wing turbine-powered aircraft.
- 29. Wastewater treatment facility.** Any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes, including Publicly Owned Treatment Works (POTW), as defined by Section 212 of the Federal Water Pollution Control Act (P.L. 92-500) as amended by the Clean Water Act of 1977 (P.L. 95-576) and the Water Quality Act of 1987 (P.L. 100-4). This definition includes any pretreatment involving the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. (See 40 CFR Section 403.3 (q), (r), & (s)).

- 30. Wildlife.** Any wild animal, including without limitation any wild mammal, bird, reptile, fish, amphibian, mollusk, crustacean, arthropod, coelenterate, or other invertebrate, including any part, product, egg, or offspring thereof (50 CFR 10.12, *Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants*). As used in this AC, wildlife includes feral animals and domestic animals out of the control of their owners (14 CFR Part 139, Certification of Airports).
- 31. Wildlife attractants.** Any human-made structure, land-use practice, or human-made or natural geographic feature that can attract or sustain hazardous wildlife within the landing or departure airspace or the airport's AOA. These attractants can include architectural features, landscaping, waste disposal sites, wastewater treatment facilities, agricultural or aquaculture activities, surface mining, or wetlands.
- 32. Wildlife hazard.** A potential for a damaging aircraft collision with wildlife on or near an airport.
- 33. Wildlife strike.** A wildlife strike is deemed to have occurred when:
- a. A pilot reports striking 1 or more birds or other wildlife;
 - b. Aircraft maintenance personnel identify aircraft damage as having been caused by a wildlife strike;
 - c. Personnel on the ground report seeing an aircraft strike 1 or more birds or other wildlife;
 - d. Bird or other wildlife remains, whether in whole or in part, are found within 200 feet of a runway centerline, unless another reason for the animal's death is identified;
 - e. The animal's presence on the airport had a significant negative effect on a flight (i.e., aborted takeoff, aborted landing, high-speed emergency stop, aircraft left pavement area to avoid collision with animal) (Transport Canada, Airports Group, *Wildlife Control Procedures Manual*, Technical Publication 11500E, 1994).

2. RESERVED.