CITY OF STOCKTON AMMONIA FACILITIES PROJECT

Initial Study and Mitigated Negative Declaration

Prepared for
City of Stockton Municipal Utilities Department

December 2012

ESA

CITY OF STOCKTON AMMONIA FACILITIES PROJECT

Initial Study and Mitigated Negative Declaration

Prepared for
City of Stockton Municipal Utilities Department

December 2012

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500
www.esassoc.com

Los Angeles

Oakland

Orlando

Palm Springs

Petaluma

Portland

San Diego

San Francisco

Santa Cruz

Seattle

Tampa

Woodland Hills

206339.02

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

TABLE OF CONTENTS

City of Stockton Ammonia Facilities Project IS/MND

Appendices

List of Tables

List of Figures

ENVIRONMENTAL CHECKLIST
Initial Study

1. **Project Title:** City of Stockton Ammonia Facilities Project
2. **Lead Agency Name and Address:** City of Stockton Municipal Utilities Department; 2500 Navy Drive, Stockton, CA, 95206
3. **Contact Person and Phone Number:** Michael Callahan, (209) 937-8994
4. **Project Location:** City of Stockton, north of the Calaveras River, south of 8-Mile Road, west of SR-99, east of Thornton Road.
5. **Project Sponsor's Name and Address:** City of Stockton Municipal Utilities Department; 2500 Navy Drive, Stockton, CA, 95206
6. **General Plan Designation(s):** Low Density Residential; High Density Residential; Parks and Recreation; Industrial; Institutional.
7. **Zoning Designation(s):** Low Density Residential; Commercial; Public Facilities; General Industrial
8. **Description of Project:** Refer to Project Description subsection below.
9. **Surrounding Land Uses and Setting.**

   The Project involves several small parcels scattered throughout the City of Stockton, plus a larger parcel located in a rural area outside of the City's urban area. Surrounding land uses vary accordingly and include residential, urban, light industrial, and agricultural.

10. **Other public agencies whose approval is required:** Refer to the Project Description subsection below.

Environmental Factors Potentially Affected

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

☒ Aesthetics	☒ Agriculture and Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology, Soils and Seismicity
☒ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials	☒ Hydrology and Water Quality
☒ Land Use and Land Use Planning	☒ Mineral Resources	☒ Noise
☒ Population and Housing	☒ Public Services	☒ Recreation
☒ Transportation and Traffic	☒ Utilities and Service Systems	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Signature	Date
Printed Name	For

1.0 Project Description

1.1 Project Background

The City of Stockton (City) is in the process of installing the Delta Water Supply Project (DWSP), which will deliver Delta water to the City via an interface with existing municipal water distribution pipelines that are currently operated by the City. State drinking water regulations require the City to maintain a chlorine residual in all municipal water supply. Water treatment under the DWSP will rely on ammonia based treatment in order to meet residual chloramine requirements for municipal water. The City's existing system uses free chlorine as the residual disinfectant, which is incompatible with the new DWSP chloramine based system. Therefore, several existing water supply facilities that provide water to the City's system must also be upgraded in order to be compatible with the new chloramine based system. Combining ammonia with free chlorine, which is currently added by the existing system, will create a chloramines disinfectant residual, allowing the well water and water derived from Stockton East Water District (SEWD) to be blended with chloraminated treated water from the DWSP. Herein, the project would provide ammonia addition/dosing at a chlorine to ammonia ratio of between 4:1 and 5:1 to convert free chlorine in the well supply to monochloramine.

1.2 Project Objectives

The objectives of the project include the following:

- Provide consistent and compatible treatment for the City's diverse water supply portfolio;
- Ensure reliability and public safety for the City's water supply system and infrastructure; and
- Ensure compliance with state drinking water regulations and standards.

1.3 CEQA Background

This document has been prepared to satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before they approve or implement those projects.

If the lead agency finds substantial evidence that any aspect of the project, either alone or in combination with other projects, may have a significant effect on the environment, that agency is required to prepare an environmental impact report (EIR), a supplement to a previously prepared EIR, or a subsequent EIR to analyze the project at hand. If the agency finds no substantial evidence that the project or any of its aspects may cause a significant impact on the environment, a negative declaration may be prepared. If, over the course of the analysis, the project is found to have a significant impact on the environment that, with specific mitigation measures, can be reduced to a

less-than-significant level, a mitigated negative declaration may be prepared. In the case of this project, all significant or potentially significant impacts on the environment would be reduced to less-than-significant levels with incorporation of specific mitigation measures. Therefore, a Mitigated Negative Declaration has been prepared.

This Initial Study/Mitigated Negative Declaration is a public document used by the decision-making lead agency to evaluate the potential environmental effects that would result from implementation of a project, and determine mitigation measures that would be available in order to minimize, avoid, or offset potential environmental impacts identified. The City of Stockton is the lead agency and will use this Initial Study/Mitigated Negative Declaration in support of its decision-making process, including determinations regarding project approval and potential for significant environmental impact.

1.4 Existing Conditions and Proposed Facilities

Figure 1-1 provides a summary of the existing well sites scheduled for the addition of ammonia dosing and associated facilities, and the north Stockton pipeline NSPAF site.

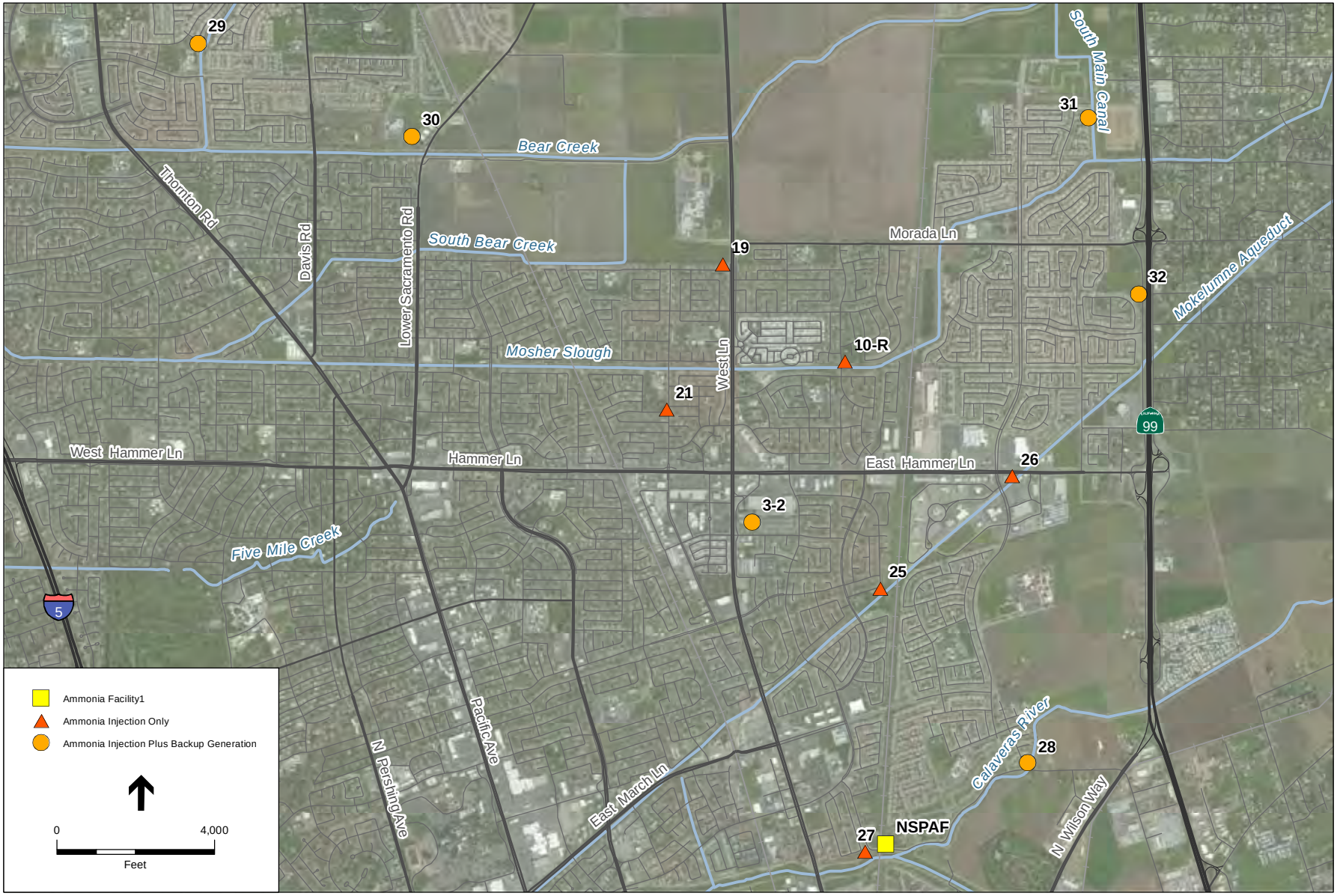
North Stockton Pipeline Ammonia Facility Site

Existing Site

As shown on **Figure 1-1**, the proposed North Stockton Pipeline Ammonia Facility (NSPAF) would be located immediately south cul-de-sac at the terminus of White Forge Drive, in eastern Stockton, approximately 150 feet north of the Calaveras River. The existing facility includes a stormwater collection basin and pump station. Under existing conditions, stormwater from nearby areas is collected in the basin. An existing pump station contains pumps that flush water from the basin through pipelines that pass through the levee to the south of the site, discharging into the Calaveras River. The existing facility is fenced, with gated access from White Forge Drive. The pad where the existing pump station is located has been cleared of vegetation, and is covered in gravel.

Proposed Facilities

The project is comprised of twelve existing well sites, scattered throughout the City, plus an existing stormwater management facility that would house the NSPAF, located adjacent to the northern levee along the Calaveras River. The proposed NSPAF would add ammonia to municipal water carried in the existing north Stockton pipeline, which provides water from Stockton East Water District's water treatment plant to the City. The proposed NSPAF would consist of a new, approximately 600 square foot building that would house the NSPAF, ammonia storage equipment, ammonia dosing equipment, electrical service and pumps, data monitoring and controls, and additional appurtenances including installation of water lines between the existing pipeline and the proposed facility, and sewer connection.



SOURCE: Bing Maps, 2012; ESRI, 2011; and ESA, 2012

DWSP Ammonia Facilities Project . 206336.02

Figure 1-1

NSPAF and Well Locations

The proposed water lines would be approximately 130 feet in length and would stretch from the existing North Stockton Pipeline to the NSPAF building and back. A single vault (approximately 0.001 acre in size) would be installed at the connection points between the North Stockton Pipeline and the water lines, which would be located approximately 110 feet west of the proposed NSPAF building. These features are shown in **Figure 1-2**, which provides a preliminary schematic for the facility. Finalized designs would be completed prior to construction.

Well Sites

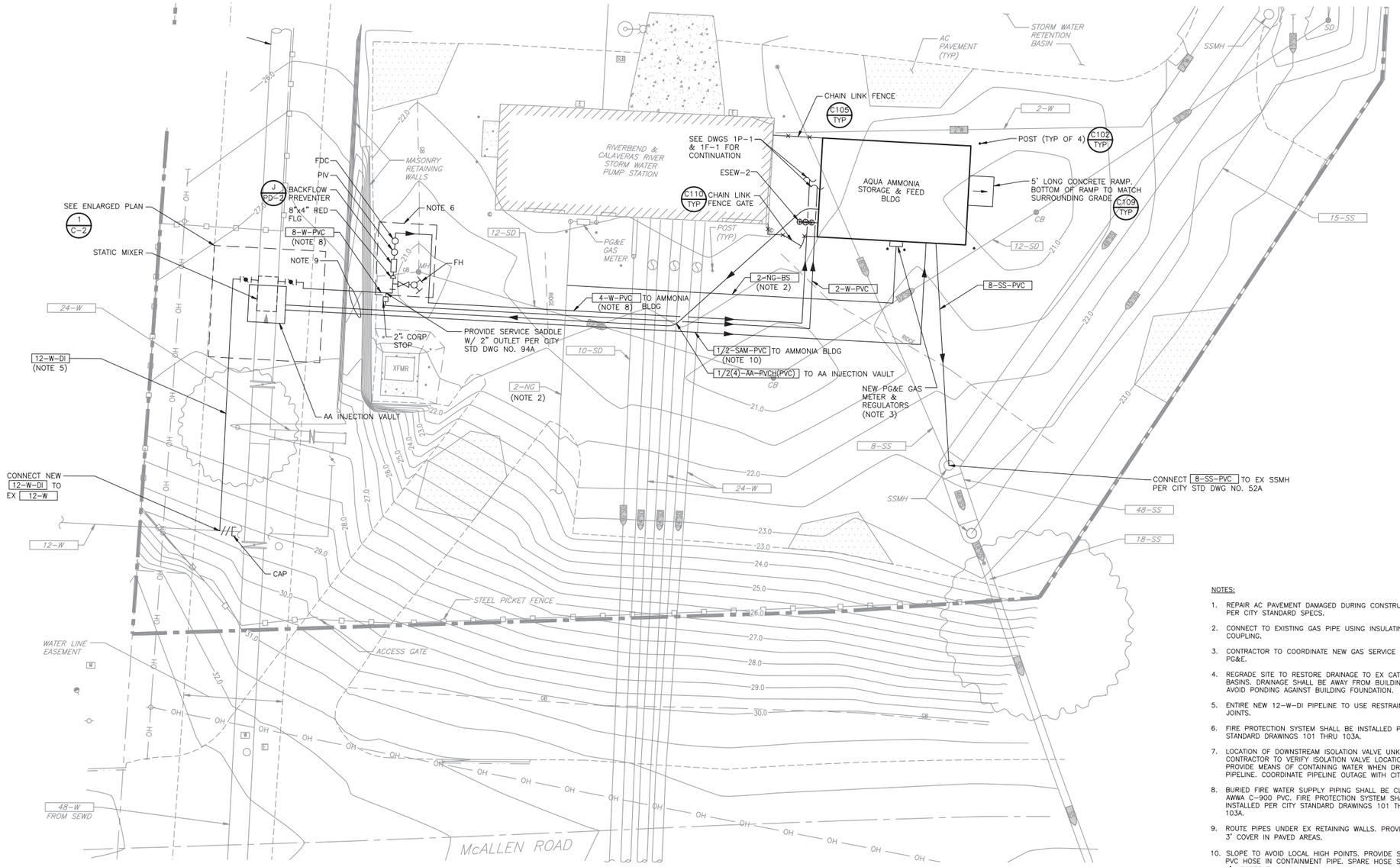
Existing Well Site

The twelve existing well sites selected for improvement under the project were constructed between 1977 and 2011. All existing wells include a submersible pump that draws water from the well and discharges into a 12-inch pipe, where water flow is measured by a flow meter. Chlorine gas used for disinfection is stored cylinders and added to the pumped groundwater in an injection vault located downstream of the flow meter. Well water with a free chlorine residual then enters the City's distribution system, where the 12-inch pipe connects to a water main in the adjacent street. A dump control valve and pipe branch on the well pump discharge piping allow the pump to discharge to an air gap structure that is connected to a storm drain. Discharge to the storm drain is typically used at the start of pump operation.

Each existing well pad site includes a small building that houses a groundwater pump, the chlorine storage and injection facilities, and associated appurtenances. Appurtenances include electrical panels, a remote terminal unit (RTU), supervisory control and data acquisition (SCADA) communications panel, and other electrical and instrumentation. Each site includes grading and drainage features that direct stormwater runoff to catch basins, which in turn drain to a storm drain manhole in the adjacent street. All wells except for wells 25 and 26 include one or two pad mounted transformers, that step down voltage from the incoming power supply. Wells 25 and 26 are operated by natural gas powered engines.

Newer wells, which include wells 28, 29, 30, 31, 32, 3-R, and 10-R, include an approximately 600 square foot building with a removable pump room that slides on tracks. The well pump, chlorine storage and injection facilities, and electrical/control equipment are located within these buildings. For these well sites, there is sufficient space available in the existing pump room to accommodate the proposed ammonia storage and feed equipment although some new electrical gear may be located outdoors on an external wall.

Older wells, which include wells 19, 21, 25, 26, and 27, have buildings or other structures that house existing equipment. However, these buildings are not large enough to accommodate the proposed ammonia storage and injection equipment and will require improvements to accommodate proposed facilities.



NOTES:

1. REPAIR AC PAVEMENT DAMAGED DURING CONSTRUCTION PER CITY STANDARD SPECS.
2. CONNECT TO EXISTING GAS PIPE USING INSULATING COUPLING.
3. CONTRACTOR TO COORDINATE NEW GAS SERVICE WITH PG&E.
4. REGRADE SITE TO RESTORE DRAINAGE TO EX CATCH BASINS. DRAINAGE SHALL BE AWAY FROM BUILDINGS AND AVOID PONDING AGAINST BUILDING FOUNDATION.
5. ENTIRE NEW 12-W-DI PIPELINE TO USE RESTRAINED JOINTS.
6. FIRE PROTECTION SYSTEM SHALL BE INSTALLED PER CITY STANDARD DRAWINGS 101 THRU 103A.
7. LOCATION OF DOWNSTREAM ISOLATION VALVE UNKNOWN. CONTRACTOR TO VERIFY ISOLATION VALVE LOCATION AND PROVIDE MEANS OF CONTAINING WATER WHEN DRAINING PIPELINE. COORDINATE PIPELINE OUTAGE WITH CITY.
8. BURIED FIRE WATER SUPPLY PIPING SHALL BE CLASS 200 AWWA C-900 PVC. FIRE PROTECTION SYSTEM SHALL BE INSTALLED PER CITY STANDARD DRAWINGS 101 THRU 103A.
9. ROUTE PIPES UNDER EX RETAINING WALLS. PROVIDE MIN 3' COVER IN PAVED AREAS.
10. SLOPE TO AVOID LOCAL HIGH POINTS. PROVIDE SPARE ½" PVC HOSE IN CONTAINMENT PIPE. SPARE HOSE SHALL BE 1' LONGER THAN CONTAINMENT PIPE AT EACH END. TUCK SPARE HOSE INSIDE CONTAINMENT PIPE.

0 20
Feet

SOURCE: Thompson-Hysell Engineers, 2006; CDM Smith, 2012; and ESA, 2012

Figure 1-2
Ammonia Facility Site Plan

This Page is Intentionally Left Blank

Proposed Wellhead Improvements

The City has identified twelve wells (wells number 19, 21, 25, 26, 27, 28, 29, 30, 31, 32, 3-R, and 10-R) to be used for municipal supply purposes over the next 10 to 15 years (Figure 1-1). Aqua ammonia storage and feed equipment would be installed at each of these existing well sites. Ammonia will be added to the water at the well site, but downstream of chlorine addition. Ammonia metering equipment will be installed and programmed to dose ammonia based on a combination of water flow rate and total chlorine residual. Ammonia will be injected using softened carriage water in order to minimize scaling and promote mixing of ammonia and the water stream.

New ammonia addition facilities at the twelve existing wells would include:

- New ammonia systems inside of existing pump buildings at well sites 28, 29, 30, 31, 32, 3-R, and 10-R;
- A new ammonia system inside of a new prefabricated building (up to 200 square feet) at each of the five (5) remaining well sites: #19, 21, 25, 26, and 27. **Figure 1-3** provides a preliminary schematic of the prefabricated building that would be added. Finalized designs would be completed prior to construction.

In addition to chloramine treatment, diesel-fired standby power generators will be installed at six of the twelve well sites (wells 28, 29, 30, 31, 32, and 3-R; See Figure 1-1). The proposed generators will allow the wells to remain in operation in the event of a power failure.

The proposed ammonia addition facilities would each include a water softener unit, which would be utilized in support of ammonia addition operations. Water softeners would operate via ion exchange, which would require periodic recharge of ion exchange resins. Brine generated during this process would be discharged to the sanitary sewer system, via proposed 4-inch pipeline connections that would be routed from the ammonia dosing facility to the nearest sewer line. At well sites #26 and 32, replaceable water softener units will be used as there are no sanitary sewers readily accessible. Assuming that the proposed ammonia dosing facilities would be operated at full capacity (which is likely to be an overestimate), approximately 80 gallons per day (gpd) of brine would be generated at each well site, and discharged into the sanitary sewer system.

The sewer system tie-in lines would be buried at a nominal depth of up to 4 feet, unless existing sewers are deeper. Specific locations for these lines, along with schematic diagrams for each of the proposed well site facilities, are contained in **Figures 1-4** through **1-15**. These figures provide preliminary schematics for each of the proposed well site facilities. Finalized designs would be completed prior to construction

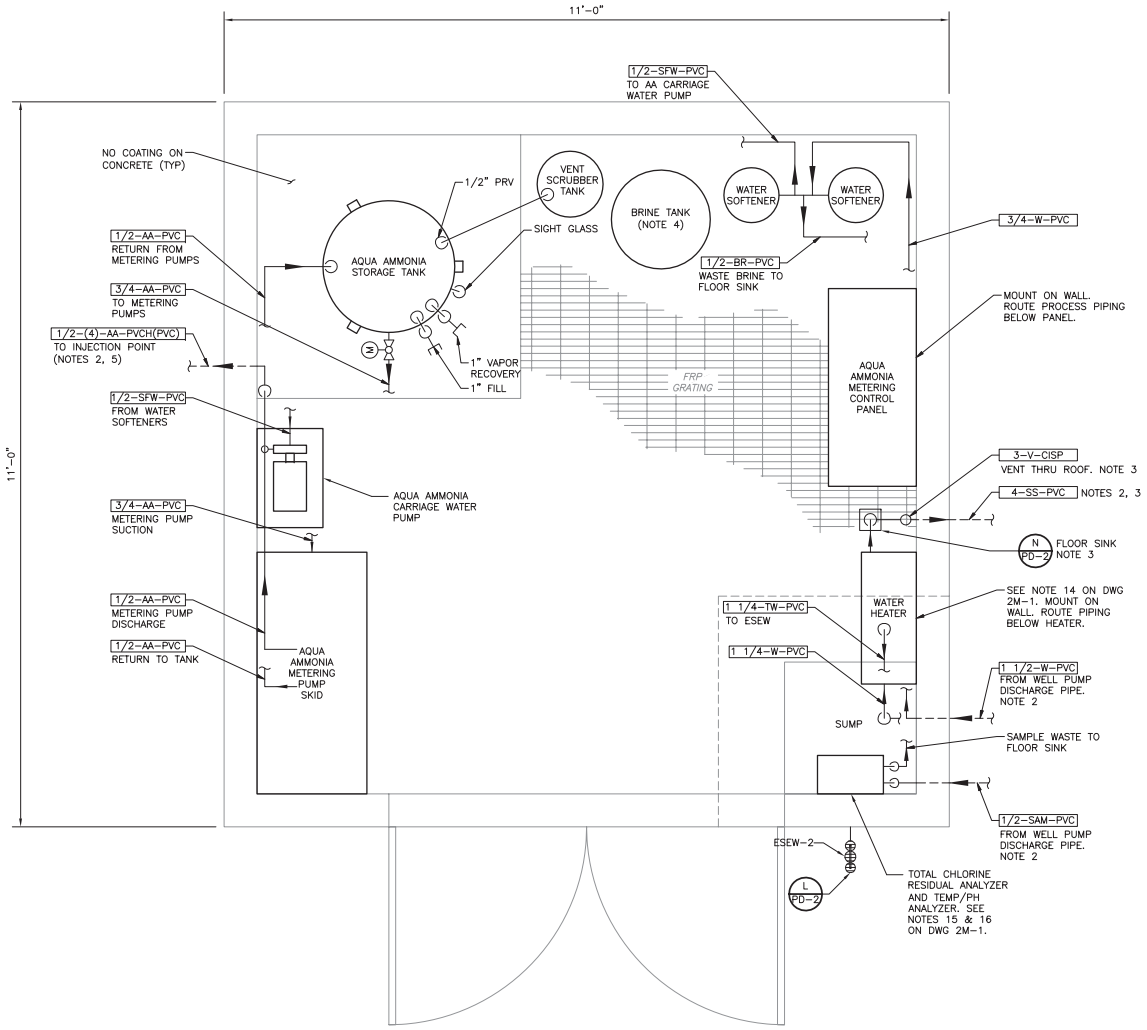
All proposed facilities for the existing wells, including ammonia addition facilities, prefabricated buildings, and diesel generators, would be situated within existing well sites, that have been previously disturbed/maintained for use as well sites by the City. The proposed wellhead facility improvements would not include any new greenfield (previously undeveloped) sites. The installation of these facilities will require minor grading and earth moving, installation of paving, installation of security lighting, and periodic truck trips (approximately two to four per well site per month) for the replenishment of ammonia at each of the ammonia addition facilities. Note that deliveries

of ammonia to the twelve existing groundwater pumps would not replace existing deliveries of chlorine gas – existing and proposed new deliveries would both occur under the project.

Anticipated Permitting Requirements

The following permitting requirements are anticipated:

- The San Joaquin Valley Air Pollution Control District (SJVAPCD) is the local air quality permitting agency. Permitting is generally required for any source of air emissions unless specifically exempt in the SJAPCD's rules and regulations. Although the SJVAPCD's rules contain exemptions for certain storage equipment, an exemption does not cover the proposed NSPAF; therefore, a permit would be required before construction can proceed.
- Ammonia is listed as a toxic air contaminant (TAC) in California and a human health risk assessment (HRA) and hazardous materials plan may be required.
- Local approvals that would be necessary include encroachment permits and construction permits.
- A CDPH water supply permit amendment is required to add a new chemical to the system; a public notification program is required to convert from chlorine to chloramines.



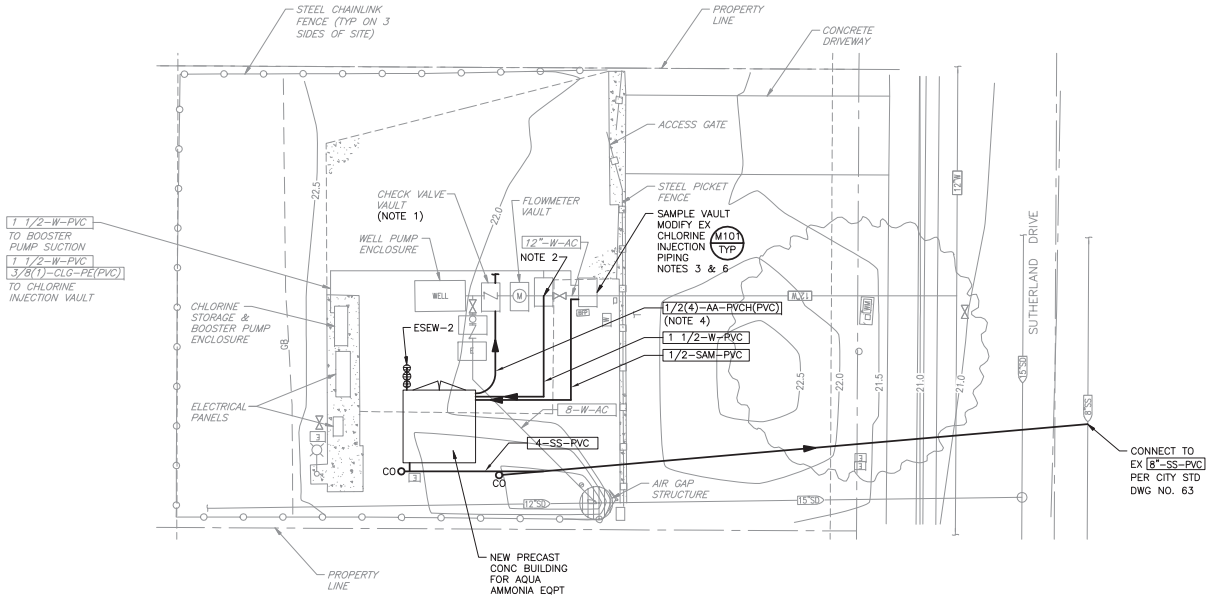
NOTES:

1. NOT ALL PIPING AND VALVES SHOWN. SEE P&IDS FOR PIPING AND VALVES.
2. LOCATION OF PIPE PENETRATIONS VARIES BY SITE. SEE CIVIL DWGS FOR LOCATIONS WHERE PIPES LEAVE AND ENTER BUILDING.
3. AT WELL 26, DO NOT INSTALL VENT PIPE, P TRAP IN DRAIN PIPE, AND SANITARY SEWER. CONNECT DRAIN PIPE TO EX STORM DRAINAGE SYSTEM ON SITE.
4. DO NOT INSTALL BRINE TANK AT WELL 26.
5. AFTER PIPE ENTERS BUILDING, TRANSITION CARRIER PVC HOSE TO PVC PIPE AND TERMINATE SECONDARY CONTAINMENT PIPE USING TERMINATION COUPLING.

0 2
Feet

SOURCE: CDM Smith, 2012; and ESA, 2012

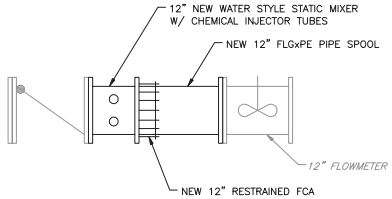
Figure 1-3
Well Sites Typical Plan –
New Precast Building



PLAN

NOTES:

1. REMOVE EX 12" PIPE SPOOL DOWNSTREAM OF EX CHECK VALVE AND INSTALL THE FOLLOWING, PER DET 1 ON THIS DWG:
   A. NEW 12" WAFER STYLE STATIC MIXER PER NOTE 11(B) ON SHT 2M-1.
   B. NEW 12" RESTRAINED FCA PER NOTE 11(C) ON SHT 2M-1.
   C. NEW 12" FLG X PE PIPE SPOOL.
   REPLACE EX VAULT AND LID IF NECESSARY TO ACCOMMODATE NEW CHEMICAL INJECTORS.
2. INSTALL NEW 1½" THREADOLET ON EX 12-W DOWNSTREAM OF EX TAP FOR CHLORINE BOOSTER PUMP SUCTION PIPE.
3. RELOCATE EX CHLORINE INJECTOR TO INSIDE EX CHLORINE STORAGE ENCLOSURE. MODIFY EX CHLORINE GAS AND CHLORINE BOOSTER PUMP PIPING AS NECESSARY.
4. TERMINATE SECONDARY CONTAINMENT PIPE INSIDE FLOWMETER VAULT. PROVIDE 4"X1/2" TERMINATION COUPLING, FLO SAFE OR EQUAL.
5. REPLACE VAULTS AND/OR LIDS IF DAMAGED DURING CONSTRUCTION (TYP FOR ALL VAULTS).
6. EX CHLORINE INJECTOR AND CHLORINE BOOSTER PUMP ARE ASSUMED TO HAVE SUFFICIENT CAPACITY TO MEET REQUIRED CHLORINE DOSE WITH RELOCATION OF INJECTOR AS SHOWN. EACH INSTALLATION WILL BE TESTED WITH CITY FOR CAPACITY AFTER MODIFICATIONS HAVE BEEN MADE. IF ASSUMPTION IS INVALID, CHLORINE BOOSTER PUMP AND/OR INJECTOR AND/OR CHLORINATOR AND/OR PIPING MIGHT REQUIRE MODIFICATION AT ADDITIONAL COST
7. EX VALVE ISOLATING WELL PUMP DISCHARGE PIPE FROM DISTRIBUTION SYSTEM IS LOCATED UPSTREAM OF EX CHLORINE INJECTION VAULT. EX CORP STOP IN CHLORINE INJECTION VAULT IS ASSUMED TO BE FUNCTIONING, TO ALLOW PIPING MODIFICATIONS IN VAULT. IF ASSUMPTION IS INVALID, ADDITIONAL ISOLATION MEASURES MIGHT BE REQUIRED AT ADDITIONAL COST.



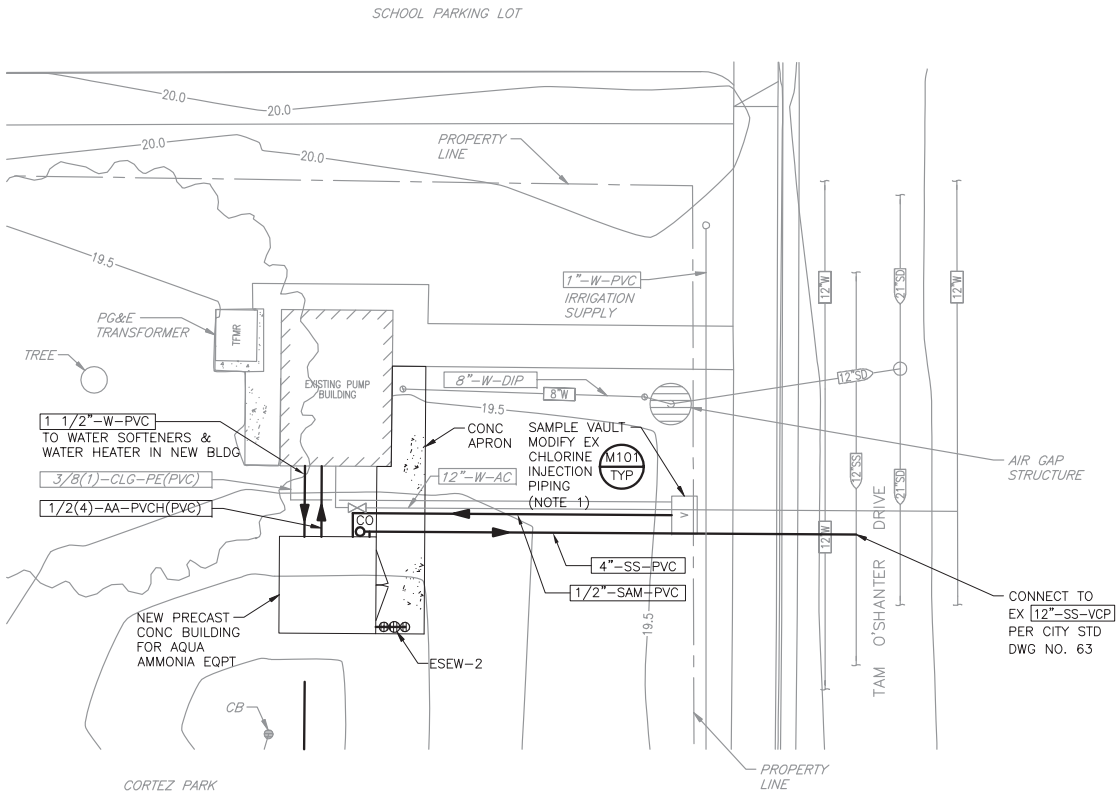
DETAIL 1
NTS -

0 20
Feet

SOURCE: CDM Smith, 2012; and ESA, 2012

Delta Water Supply Project – Ammonia Facilities Project . 206339.02

Figure 1-4
Well No. 19 Site Plan



PLAN

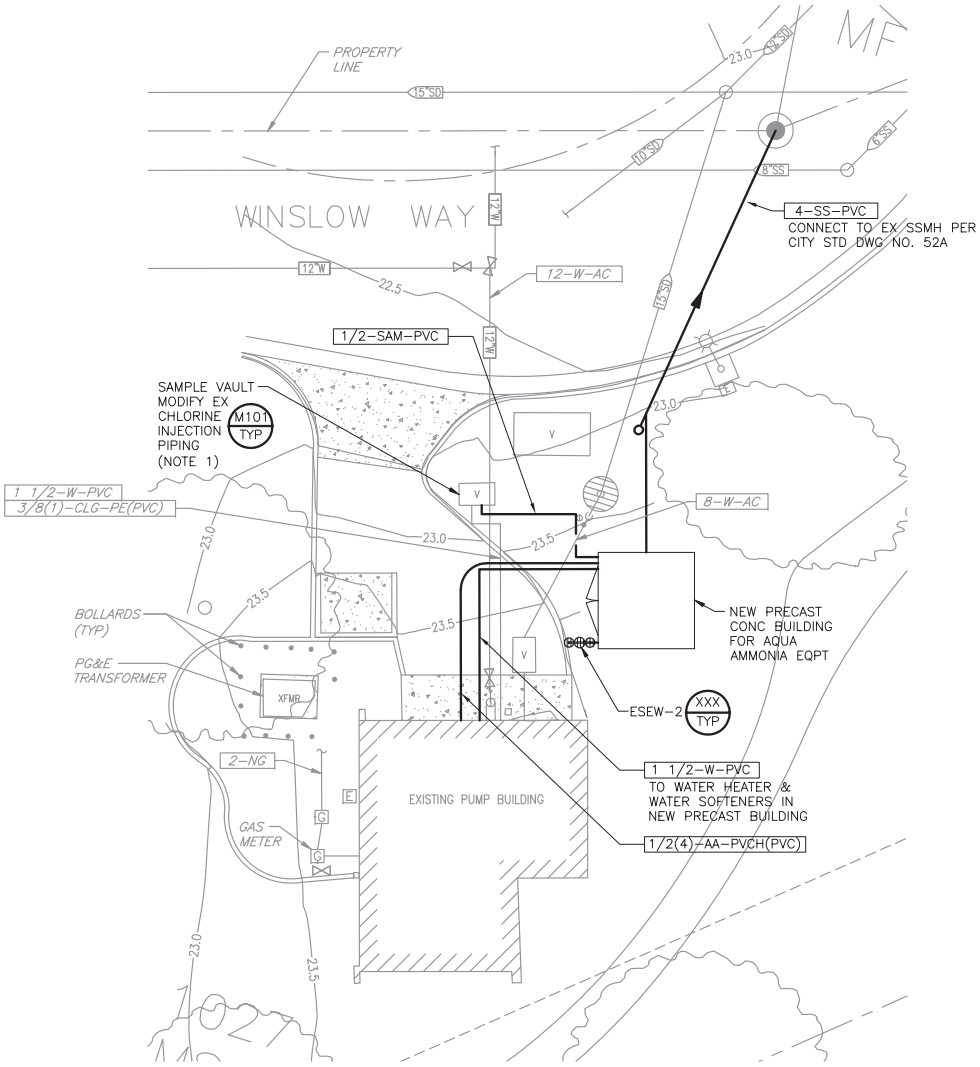
NOTES:

1. RELOCATE EX CHLORINE INJECTOR TO INSIDE EX WELL PUMP BUILDING PER SHT 2M-4. MODIFY EX CHLORINE GAS AND CHLORINE BOOSTER PUMP PIPING AS NECESSARY.
2. EX CHLORINE INJECTOR AND CHLORINE BOOSTER PUMP ARE ASSUMED TO HAVE SUFFICIENT CAPACITY TO MEET REQUIRED CHLORINE DOSE WITH RELOCATION OF INJECTOR AS SHOWN. EACH INSTALLATION WILL BE TESTED WITH CITY'S FOR CAPACITY AFTER MODIFICATIONS HAVE BEEN MADE. IF ASSUMPTION IS INVALID, CHLORINE BOOSTER PUMP AND/OR INJECTOR AND/OR CHLORINATOR AND/OR PIPING MIGHT REQUIRE MODIFICATION AT ADDITIONAL COST.
3. EX VALVE ISOLATING WELL PUMP DISCHARGE PIPE FROM DISTRIBUTION SYSTEM IS LOCATED UPSTREAM OF EX CHLORINE INJECTION VAULT. EX CORP STOP IN CHLORINE INJECTION VAULT IS ASSUMED TO BE FUNCTIONING, TO ALLOW PIPING MODIFICATIONS IN VAULT. IF ASSUMPTION IS INVALID, ADDITIONAL ISOLATION MEASURES MIGHT BE REQUIRED AT ADDITIONAL COST.

0 20
Feet

SOURCE: CDM Smith, 2012; and ESA, 2012

Figure 1-5
Well No. 21 Site Plan



PLAN

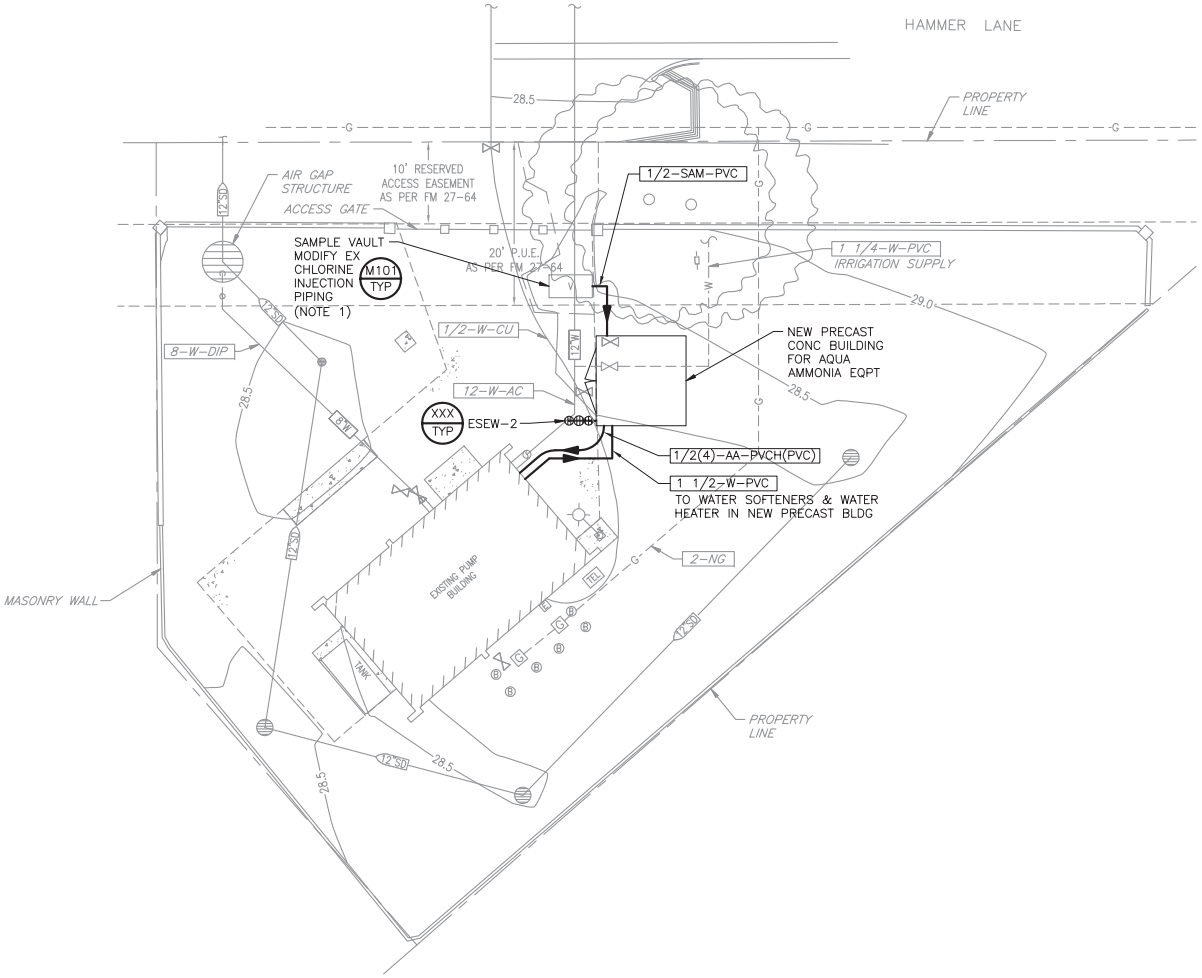
NOTES:

1. RELOCATE EX CHLORINE INJECTOR TO INSIDE EX WELL PUMP BUILDING.
2. EX CHLORINE INJECTOR AND CHLORINE BOOSTER PUMP ARE ASSUMED TO HAVE SUFFICIENT CAPACITY TO MEET REQUIRED CHLORINE DOSE WITH RELOCATION OF INJECTOR AS SHOWN. EACH INSTALLATION WILL BE TESTED WITH CITY'S FOR CAPACITY AFTER MODIFICATIONS HAVE BEEN MADE. IF ASSUMPTION IS INVALID, CHLORINE BOOSTER PUMP AND/OR INJECTOR AND/OR CHLORINATOR AND/OR PIPING MIGHT REQUIRE MODIFICATION AT ADDITIONAL COST.

0 20
Feet

SOURCE: CDM Smith, 2012; and ESA, 2012

Figure 1-6
Well No. 25 Site Plan



PLAN

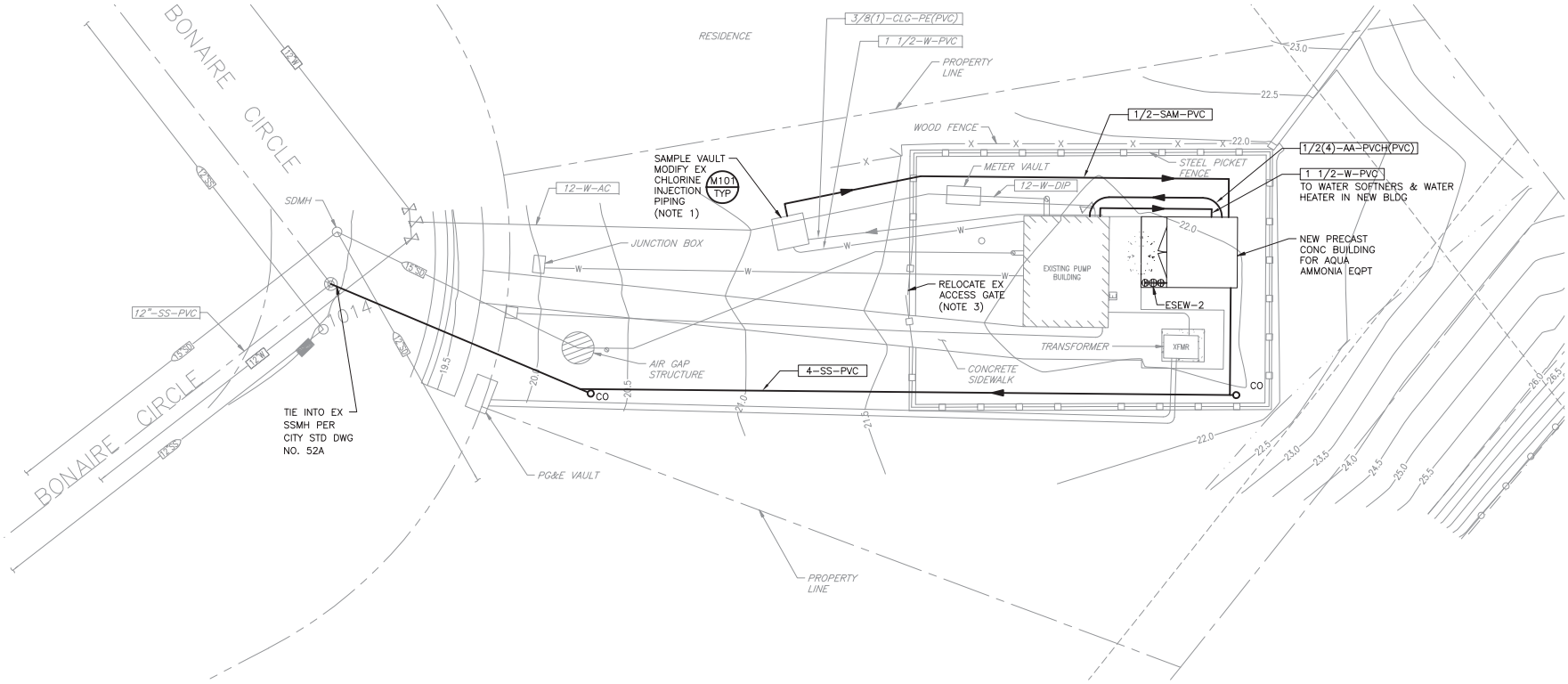
NOTES:

1. RELOCATE EX CHLORINE INJECTOR TO INSIDE EX WELL PUMP BUILDING.
2. EX CHLORINE INJECTOR AND CHLORINE BOOSTER PUMP ARE ASSUMED TO HAVE SUFFICIENT CAPACITY TO MEET REQUIRED CHLORINE DOSE WITH RELOCATION OF INJECTOR AS SHOWN. EACH INSTALLATION WILL BE TESTED WITH CITY'S FOR CAPACITY AFTER MODIFICATIONS HAVE BEEN MADE. IF ASSUMPTION IS INVALID, CHLORINE BOOSTER PUMP AND/OR INJECTOR AND/OR CHLORINATOR AND/OR PIPING MIGHT REQUIRE MODIFICATION AT ADDITIONAL COST.

0 20
Feet

SOURCE: CDM Smith, 2012; and ESA, 2012

Figure 1-7
Well No. 26 Site Plan



PLAN

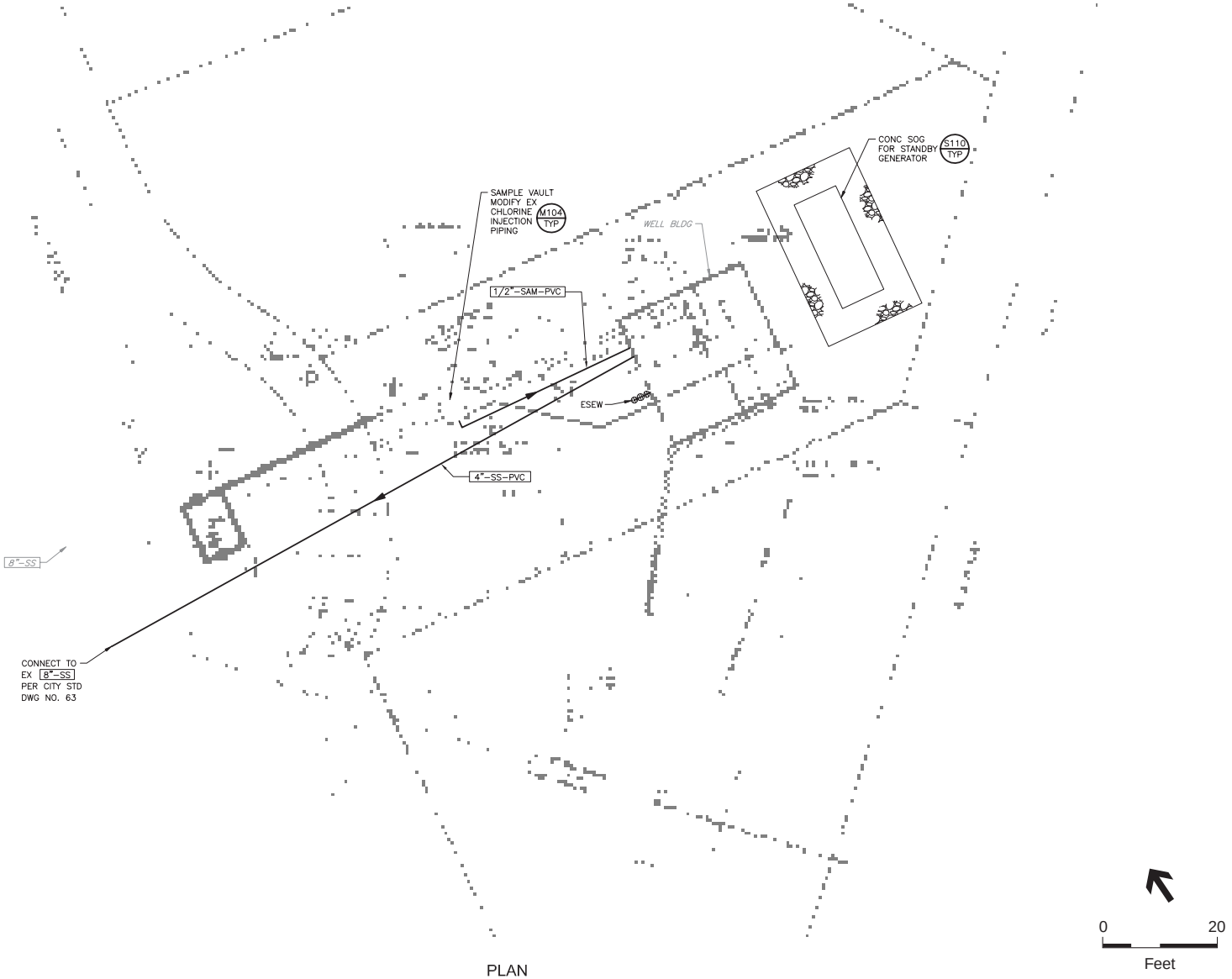
NOTES:

1. RELOCATE EX CHLORINE INJECTOR TO INSIDE EX WELL PUMP BUILDING PER SHT 2M-4. MODIFY EX CHLORINE GAS AND CHLORINE BOOSTER PUMP PIPING AS NECESSARY.
2. EX CHLORINE INJECTOR AND CHLORINE BOOSTER PUMP ARE ASSUMED TO HAVE SUFFICIENT CAPACITY TO MEET REQUIRED CHLORINE DOSE WITH RELOCATION OF INJECTOR AS SHOWN. EACH INSTALLATION WILL BE TESTED WITH CITY'S FOR CAPACITY AFTER MODIFICATIONS HAVE BEEN MADE. IF ASSUMPTION IS INVALID, CHLORINE BOOSTER PUMP AND/OR INJECTOR AND/OR CHLORINATOR AND/OR PIPING MIGHT REQUIRE MODIFICATION AT ADDITIONAL COST.
3. RELOCATE EX ACCESS GATE SOUTH TO ALLOW CHEM DELIVERY TRUCK ACCESS TO AREA BETWEEN EX PUMP BUILDING AND SOUTH FENCE.

0 20
Feet

SOURCE: CDM Smith, 2012; and ESA, 2012

Figure 1-8
Well No. 27 Site Plan



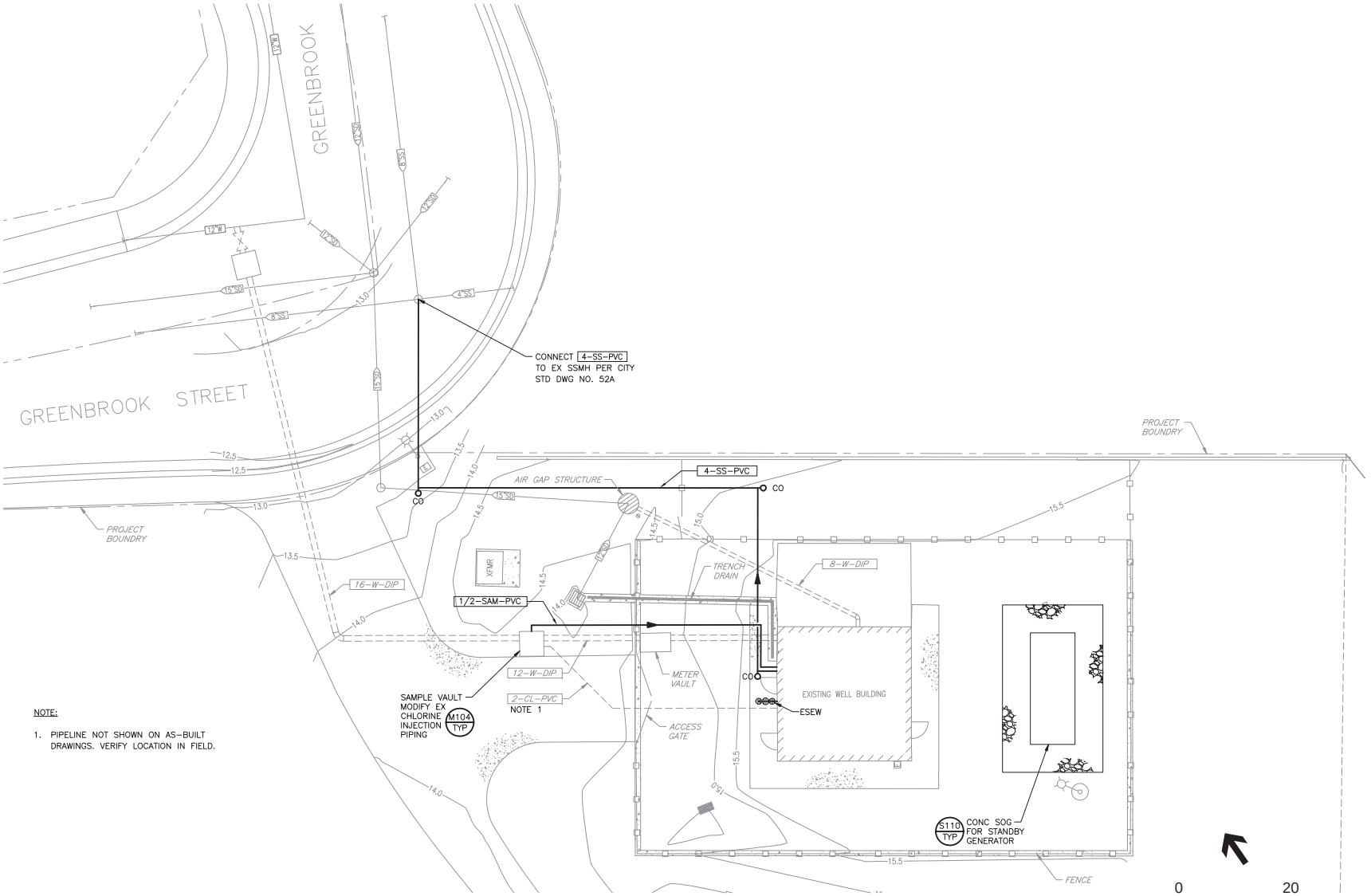
PLAN

SOURCE: CDM Smith, 2012; and ESA, 2012

Delta Water Supply Project – Ammonia Facilities Project . 206339.02

Figure 1-9

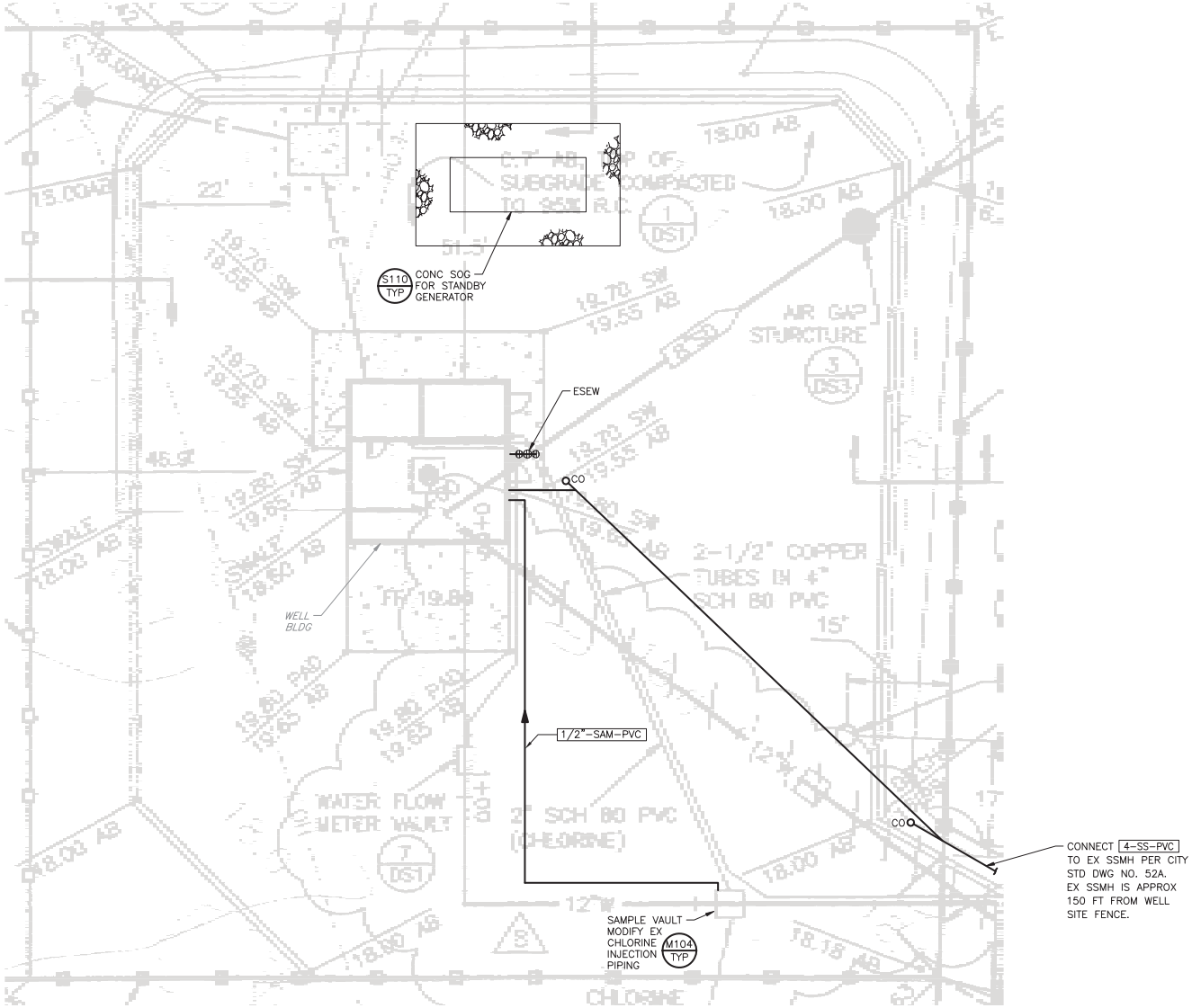
Well No. 28 Site Plan



PLAN

SOURCE: CDM Smith, 2012; and ESA, 2012

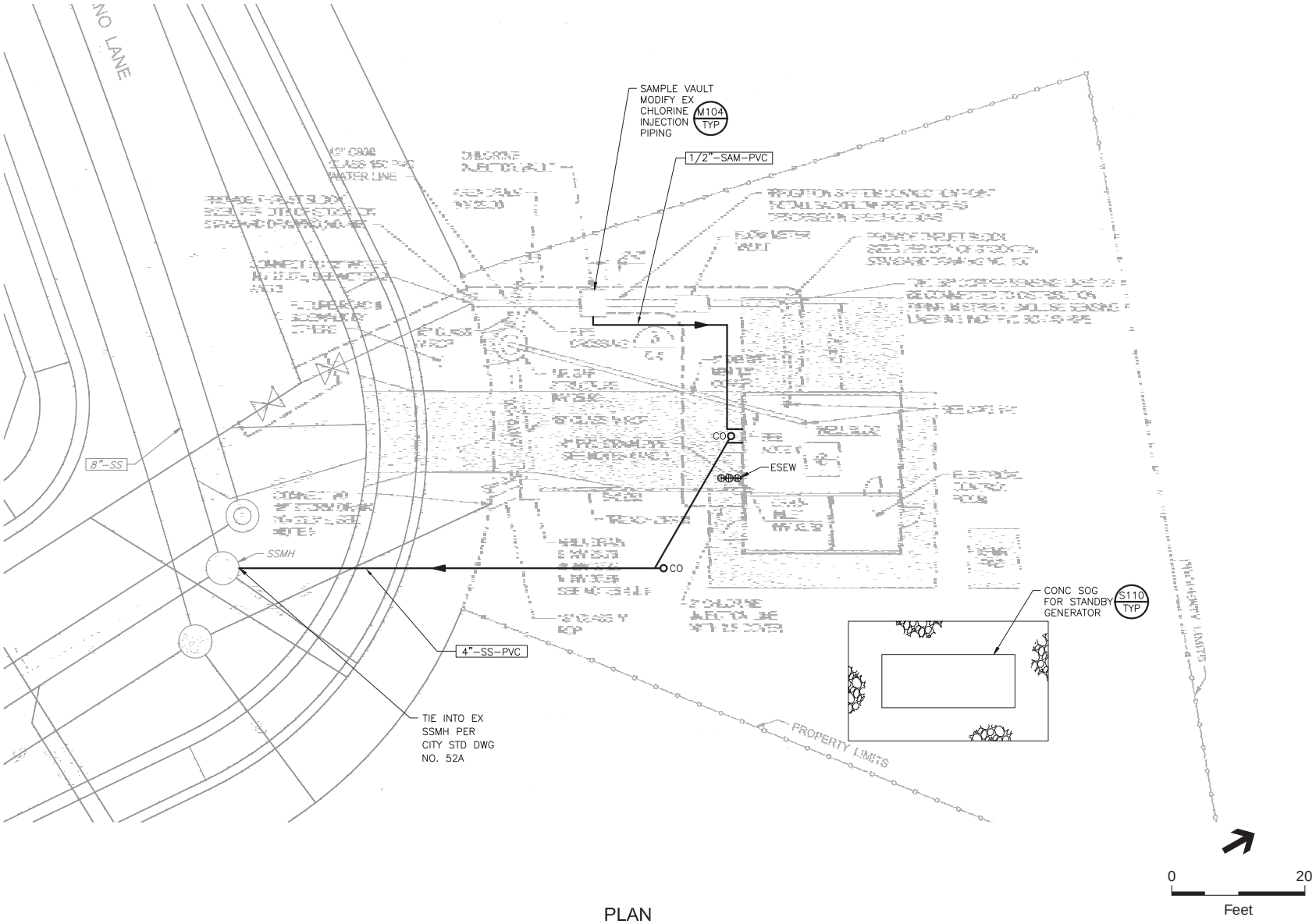
Figure 1-10
Well No. 29 Site Plan



PLAN

SOURCE: CDM Smith, 2012; and ESA, 2012

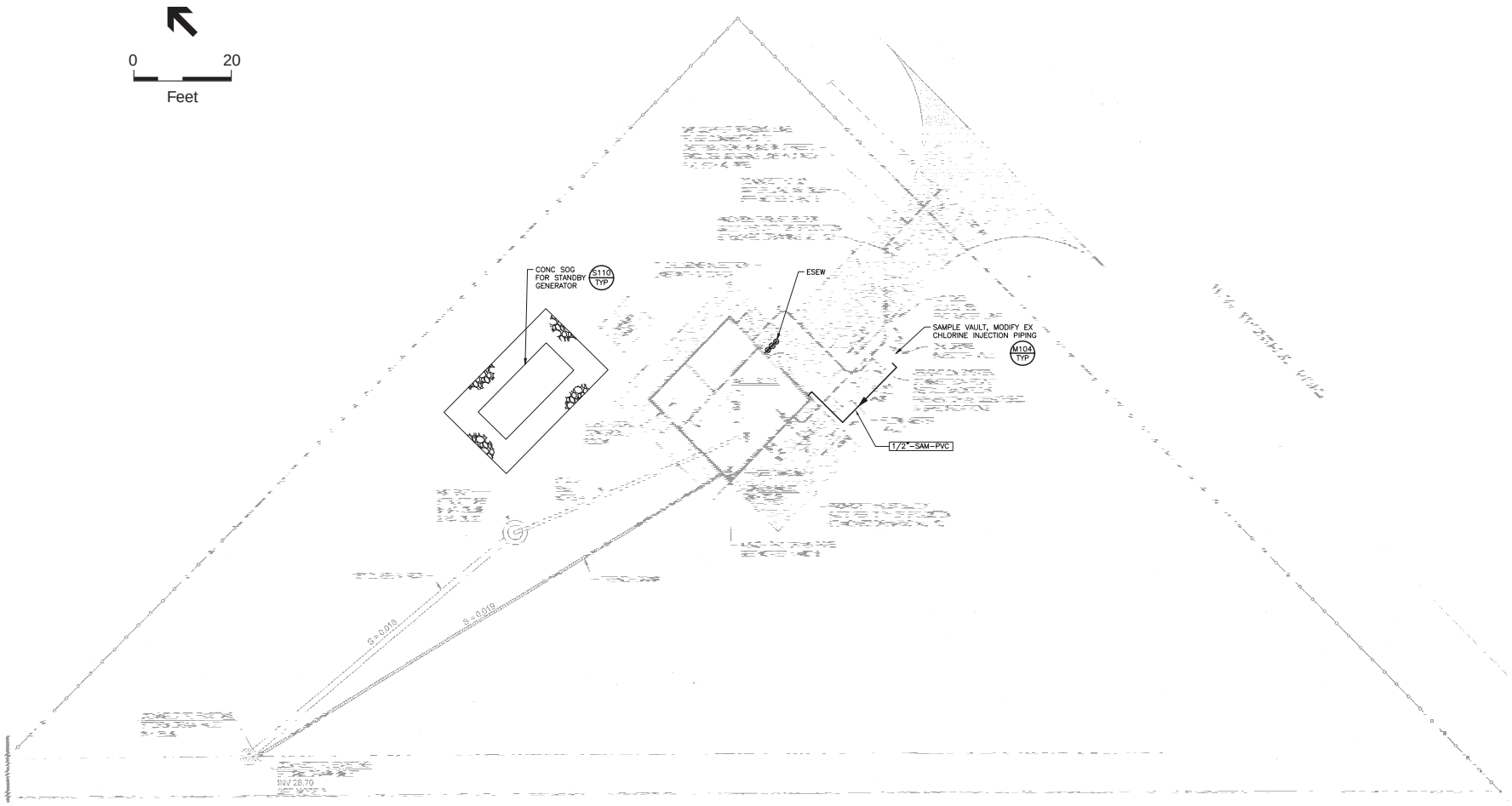
Figure 1-11
Well No. 30 Site Plan



PLAN

SOURCE: CDM Smith, 2012; and ESA, 2012

Figure 1-12
Well No. 31 Site Plan



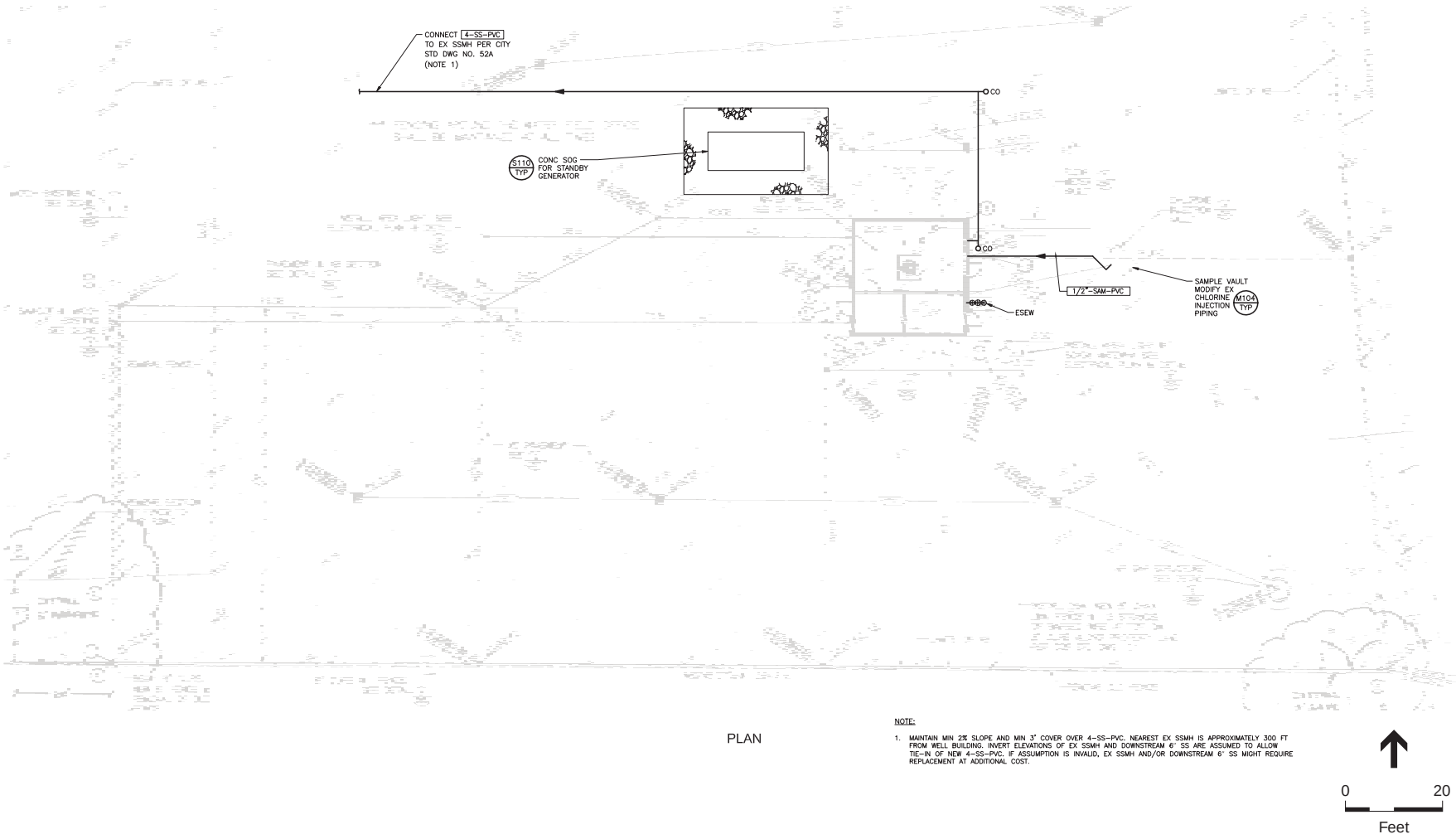
PLAN

SOURCE: CDM Smith, 2012; and ESA, 2012

Delta Water Supply Project – Ammonia Facilities Project . 206339.02

Figure 1-13

Well No. 32 Site Plan

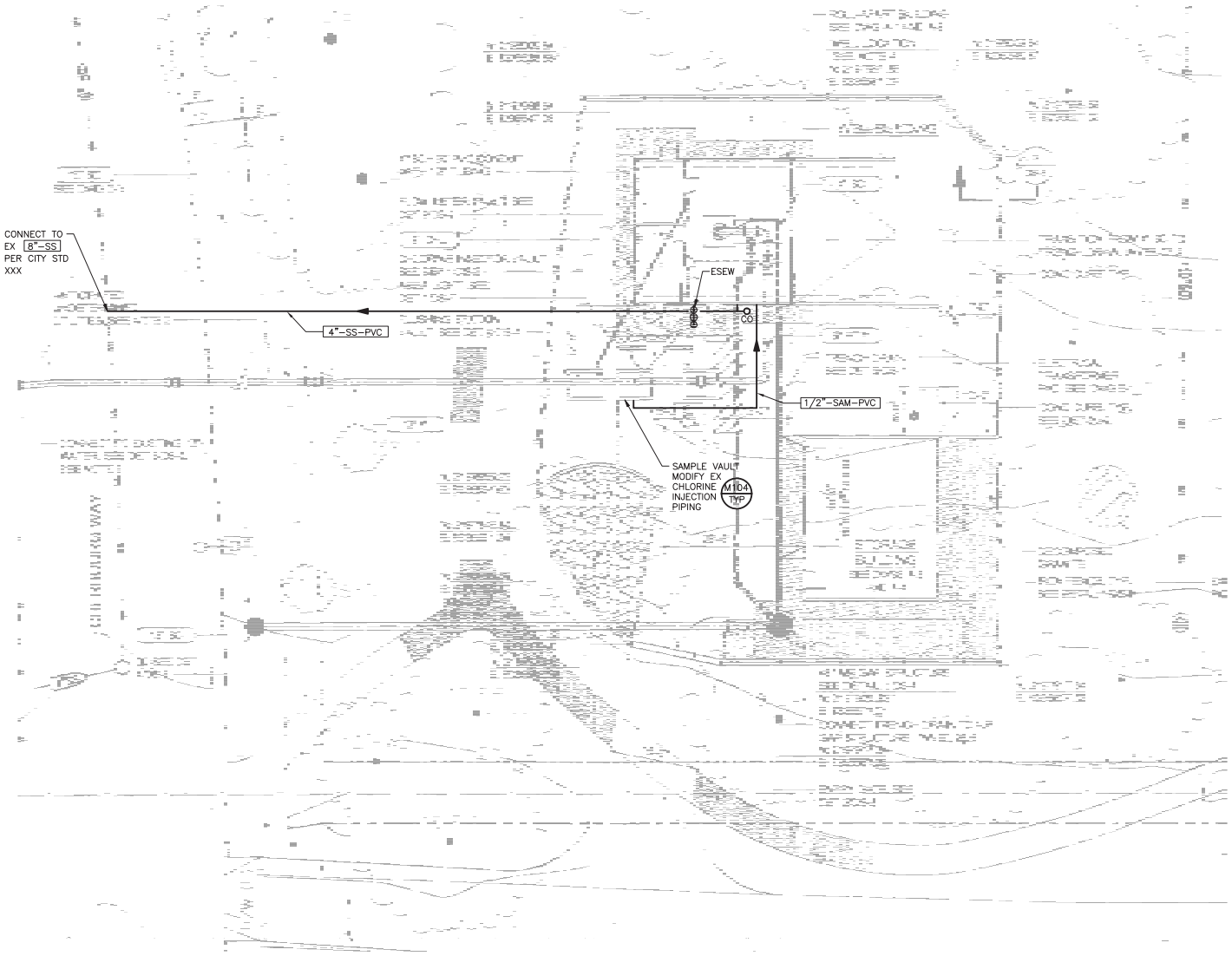


SOURCE: CDM Smith, 2012; and ESA, 2012

Delta Water Supply Project – Ammonia Facilities Project . 206339.02

Figure 1-14

Well No. 3-R Site Plan



PLAN

SOURCE: CDM Smith, 2012; and ESA, 2012

Figure 1-15
Well No. 10-R Site Plan

2.0 Environmental Checklist

2.1 Aesthetics

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
1.	**AESTHETICS — Would the project:**				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Environmental Setting

Visual or aesthetic resources are generally defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment. Depending on the extent to which a project's presence would alter the perceived visual character and quality of the environment, visual or aesthetic impacts may occur. This analysis of potential visual effects is based on review of a variety of data, including project maps and drawings, a visual survey of the project area, aerial and ground level photographs of the project area, and planning documents.

The project would entail modifications to facilities located at existing well sites, and at an existing stormwater facility for the NSPAF. All facility sites are owned and maintained by the City. The NSPAF site is located in a residential area, adjacent to a flood control levee along the north side of the Calaveras River. Well sites are located primarily in low density residential areas, with existing housing within 100 feet of most sites. However, well sites 21and 10-R are located adjacent to municipal parks with residences nearby, while well sites 26 and 3-R are located adjacent to commercial buildings, and well site 30 is located in a light industrial/storage area. Well site 25 is located entirely within an existing municipal park. A review of the current Caltrans Map of Designated State Scenic Highways indicated that there are no officially designated state scenic highways in the vicinity of the project, or in the general vicinity of the City (Caltrans, 2007). Additionally, the project is not located near any designated scenic vistas.

Discussion

a) **No Impact.** Because the project is not located in or near any designated scenic vistas, the project would not have an impact on any scenic vista. No impact would occur.

b) **No Impact.** The project is not located along or adjacent to a state scenic highway and therefore would not damage associated scenic resources including but not limited to trees, outcroppings, and historic buildings within a scenic highway.

c) **Less than Significant Impact.** Construction of the project would result in limited short-term impacts to the existing visual character and quality of the project area. Construction activities would require the use of trucks, limited/minor grading on site, digging of trenches, and temporary storage of materials at construction sites. During construction, materials within the construction areas would contribute negative aesthetic elements in the visual landscape in the immediate vicinity of project facilities. However, these effects would be temporary and would not significantly impact the long-term visual character of the area. For instance, the project would involve temporary construction activities near the Calaveras River and in residential areas, but would not result in new permanent visual obstructions or other visual changes in character within those areas. Changes within existing facility footprints would be consistent with the existing character of those facilities. Therefore, the project would not substantially degrade the existing visual character or quality of the site and its surroundings.

d) **Less than Significant Impact.** The project would not result in any new sources of light or glare, because aboveground facility improvements as part of the project would be constructed at existing facility locations. Lighting associated with facility improvements would be consistent with existing facilities and would be consistent with City Development Code site planning performance standards (City Code Title 16, Division 3, Chapter 16.32) related to light and glare, which would require minimization or shielding of nighttime lighting, and restrictions on lighting use. Therefore, the project would not result in new sources of substantial light or glare which would adversely affect daytime or nighttime views.

References

California Department of Transportation (Caltrans), 2007. California Scenic Highway Program, available at: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm; accessed May 11, 2012.

2.2 Agricultural and Forest Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
2. AGRICULTURAL AND FOREST RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the project:**				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

The project is located in an urban area that includes primarily existing built land uses, within the City. These include lands that are zoned according to adjacent use, including low density residential (wells 19, 21, 27, 28, 29, 31, 32, 10-R, and the NSPAF), commercial (well 30), public facilities (well 25), and general industrial (well 3-R). These designations do not allow for agricultural uses, and no agricultural uses were identified on site for any of the proposed facilities. Agricultural uses are not located in close proximity to any of the proposed facilities, except for well 28, where existing agricultural use is located approximately 150 feet east of the site, and the NSPAF, where agricultural use is located approximately 700 feet east of the site. According to the California Department of Conservation's Important Farmland Maps, provided under the Farmland Mapping and Monitoring Program (FMMP), these areas are identified as farmland of statewide importance (California Department of Conservation, 2008). No important farmland is indicated within the project area by FMMP maps (California Department of Conservation, 2008). No forest or forestry uses are located on site or in the general vicinity of the project area.

Discussion

a,b) **No Impact.** No portion of the project area is located on existing farmland or within an area that is zoned as farmland, including prime farmland, unique farmland, or farmland of statewide importance. No portion of the project area is under a Williamson Act contract or otherwise subject to farmland preservation requirements or agreements. The project would not convert existing farmland to another use. The proposed facilities would be installed at existing well sites and would not interfere, during construction or operation, with nearby farmland.

c,d) **No Impact.** No portion of the project area is located in an area zoned as forest, timberland or used for timber production. No portion of the project area contains forest land or vegetation consistent with forest land. The project would not result in the loss of forest land, or convert existing forest land to another use.

e) **No Impact.** The project would not result in changes to the existing environment that would cause the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use (see Checklist Items 2a-d).

References

California Department of Conservation, 2008. San Joaquin County Important Farmland 2008. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2008/sjq08.pdf Accessed May 5, 2012.

2.3 Air Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
3. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Environmental Setting

The San Joaquin Valley Air Pollution Control District (SVAPCD) is the local agency charged with administering local, state, and federal air quality management programs for San Joaquin County, as well as other counties located in the San Joaquin Valley. The District is located in Northern California in the San Joaquin Valley Air Basin. The major pollutants of concern in the San Joaquin Valley are ozone (O3) and particulate matter (PM). The project area is in an area currently designated moderate non-attainment for the state 1-hour ozone standard, non-attainment for the state 8-hour ozone standard, non-attainment for the state PM10 standard, and non-attainment for the state PM2.5 standard (California Air Resources Board, 2011a).

Air quality is determined primarily by the type and amount of pollutants emitted into the atmosphere, the topography of the air basin, and local meteorological conditions. In the project area, stable atmospheric conditions and light winds can provide conditions for pollutants to accumulate in the air basin when emissions are produced. Winds in this region of California generally are light and easterly in the winter, but strong and westerly in the spring, summer, and fall.

A marine climate influences mixing heights. Often, the base of the inversion is found at the top of a layer of marine air, because of the cooler nature of the marine environment. Inland areas, however, where the marine influence is frequently absent, often experience strong ground-based inversions that inhibit mixing and can result in high pollutant concentrations. Low mixing heights are observed during the winter in the San Joaquin Valley.

Mixing heights in the Stockton area are likely to be similar to those in Sacramento. Mixing height measurements have been made in Sacramento (located approximately 41 miles north of the project area). At Sacramento, the 50th percentile morning mixing heights for the period 1979–80 were 135-150 meters (approximately 445-495 feet) in the fall and winter, 190 meters (625 feet) in the spring, and 155 meters (510 feet) in the summer. Such low mixing heights trap pollutants. The 50th percentile afternoon mixing heights, however, were 1,035-1,120 meters (3,400-3,675 feet) in spring and summer, 845 meters (2,270 feet) in the fall, and 395 meters (1,295 feet) in the winter. Such mixing heights provide generally favorable conditions for the dispersion of pollutants (Smith, et al., 1984).

SVAPCD Thresholds of Significance

As the agency responsible for protecting present and future air quality affect environment, SVAPCD has established CEQA guidelines to outline air quality thresholds for projects that, when exceeded, indicate that a project's emissions are potentially significant. The project-specific significance thresholds are intended for use as a guide rather than strict, absolute values. Depending on factors specific to the project, projects exceeding thresholds may trigger a refined emissions analysis, exploration of any mitigating characteristics of the project or site, and identification of feasible mitigation measures to reduce the impact to a less than significant level. **Table 2.3-1** outlines the air quality thresholds of significance that are applicable to the project. For most impacts, deference was given to the significance thresholds contained in the SJVAPCD CEQA guidelines.

TABLE 2.3-1
SUMMARY OF THRESHOLDS OF SIGNIFICANCE APPLICABLE TO PROJECT

Impact	Significance Level	Description
Construction Emissions	10 tons/year NOx 10 tons/year ROG 15 tons/year PM_{10}	SJVAPCD CEQA Guidance for Construction: If Construction Emissions do not Exceed CEQA Guidance for Ozone Precursors During Operation, then Construction Impacts are Assumed to be Less Than Significant when Compliance with Regulation VIII is Achieved and the Control Measures of Tables 6-2 and 6-3 are Implemented as Appropriate
Criteria Pollutant Emissions	10 tons/year NOx 10 tons/year ROG 10 tons/year PM_{10}	SJVAPCD CEQA Guidance for Operation
Ambient CO Hotspots at Intersections in the Vicinity of the Project	A traffic study for the project indicates that the LOS in the project vicinity will be reduce to LOS E or F OR A traffic study indicates that the project will substantially worsen an already existing LOS F in the project vicinity	SJVAPCD CEQA Guidance for Operation: If the Project Exceeds these Screening Level Significance Thresholds, then CO Dispersion Modeling is Required and the ambient CO Concentrations of 9 ppm (8-hr average) and 20 ppm (1-hr average) are the Applicable Thresholds.
Toxic Air Contaminant Health Impacts	Cancer Risk > 10 in a million Non-Cancer HI > 1.0	SJVAPCD CEQA Guidance for Operation

TABLE 2.3-1
SUMMARY OF THRESHOLDS OF SIGNIFICANCE APPLICABLE TO PROJECT

Impact	Significance Level	Description
GHG Emissions	Project Complies with an Approved GHG Emission Reduction Plan or Mitigation Program Specified in Law or Adopted by the Public Agency with Jurisdiction over the Affected Resources OR Implementation of Best Performance Standards (BPS) that reduce Project GHG Emissions 29% from Baseline OR Reduce Project GHG Emissions 29% from Business as Usual (BAU) Based on Project-Specific GHG Emissions Quantification AND 25,000 Metric Tons/Year	SJVAPCD CEQA Guidance for Operation AND USEPA Mandatory GHG Reporting Threshold
Odors	Potential to Frequently Expose Members of the public to Objectionable Odors (e.g., Facility Type is Listed in Table 4.2 of the SJVAPCD CEQA Guide and is Closer than the Screening Distances)	SJVAPCD CEQA Guidance for Operation: The Facility Types in Table 4.2 are not All-Inclusive and Facility Types Must Be Evaluated on a Case-By-Case Basis

Discussion

a) **Less than Significant.** The project would not include any residential development or commercial development, or remove or reduce a current impediment to growth, and therefore would not result in an associated growth related increase in population or vehicle miles travelled. Additionally, the project would comply with all applicable air quality rules and regulations. Potential air quality effects associated with growth inducement are discussed in greater detail in Checklist Item 13.a, Population and Housing. Therefore, the project would not conflict with or obstruct the implementation of applicable air quality plans. No impact would occur. Potential for violation of an air quality standard is addressed under checklist item 3.b, immediately below.

b,c) **Less than Significant with Mitigation.** Development of the project would require construction activities including the use of heavy machinery and diesel-operated construction equipment. Construction activities typically result in emissions of PM, usually in the form of fugitive dust from activities such as excavation, grading, and vehicle travel on unpaved surfaces, as well as diesel emissions. In the absence of mitigation, construction activities may result in considerable quantities of dust and other pollutants on a temporary and intermittent basis during the construction period. As shown, construction associated with project development would result in the emission of ozone precursor emissions (i.e., ROG, and NO_x). Criteria pollutant emissions of PM, ROG and NO_x from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors and particulate matter during project development. Emissions were estimated using the URBEMIS2007 model and are depicted below in **Table 2.3-2**. Additional assumptions and information are included in **Appendix A**.

TABLE 2.3-2
ESTIMATED EMISSIONS FOR PROJECT CONSTRUCTION

Pollutant	Emissions (tons/project)
ROG	0.54
NO_x	4.19
CO	2.47
SO_2	0.00
PM_{10}	0.97
$PM_{2.5}$	0.20
CO_2	475

SOURCE: Modeled with URBEMIS v.9.2.4

The emissions indicated in **Table 2.3-2** do not exceed the SJVAPCD CEQA guidelines significance levels shown in **Table 2.3-1**. Because these criteria pollutant thresholds are not exceeded during the construction phase, the SJVAPCD CEQA guidelines allow a qualitative analysis as an alternative to an ambient impact analysis. The qualitative approach assumes that construction impacts will be reduced to less than significant levels if the above mitigation measures from SJVAPCD Regulation VIII and Tables 6-2 and 6-3 of the guidelines are implemented. These measures are mainly aimed at reducing PM impacts. Therefore, implementation of **Mitigation Measure AIR-1** and **AIR-2**, which would provide mitigation for PM and NOx, would be required to ensure that this potential impact would be reduced to less than significant levels.

Project operations would include intermittent delivery vehicle trips to provide ammonia to each of the 12 well sites, plus the NSPAF site. Deliveries would occur approximately twice per month, and as such would not contribute meaningfully to atmospheric loading of air quality pollutants. Additionally, use of the proposed emergency backup generators would occur only during emergency power outage situations – that is, during periods when grid power failure occurs, and during monthly testing. During a power failure, combustion of diesel by the generators could contribute minimally to regional pollutant loading. However, generator use would cease as soon as grid power is restored to the affected well site. Additionally, it is unlikely that all wells would suffer a loss of grid power simultaneously, because they are geographically dispersed across the project area. Therefore, potential operation period emissions, including emissions associated with chemical deliveries and generator use, are anticipated to be minimal, and would not contribute meaningfully to regional pollutant loadings. No further mitigation is warranted.

Mitigation Measures

Measure AIR-1: In order to maintain compliance with SVAPCD requirements, the following measures shall be implemented:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized to control dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.

- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized to control dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled to reduce fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off-site, 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 of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)*
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized to control 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.
- Traffic speeds on unpaved roads shall be limited to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Limit area subject to excavation, grading, and other construction activity at any one time.
- Minimize idling time (e.g., five-minute maximum).
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.

Measure AIR-2: During construction activities, the following feasible NO_x mitigation measures shall be employed, as relevant:

- An onsite Air Quality Construction Mitigation Manager (AQCMM) shall be designated, and shall be responsible for directing compliance with mitigation measures for construction activities.
- To the extent that equipment and technology are available and cost effective, contractors shall be required to use catalyst and filtration technologies, and retrofit existing engines used in construction equipment.
- All diesel-fueled engines used during construction shall use ultra-low sulfur diesel fuel, which contains no more than 15 parts per million (ppm) sulfur, or alternative fuels (e.g. reformulated fuels, emulsified fuels, compressed natural gas, or power with electrification). Low sulfur diesel fuel (500 ppm sulfur content) shall be used only if evidence is obtained and maintained from the fuel supplier(s) that ultra-low sulfur diesel fuel is unavailable in the vicinity of the project.

- All construction diesel engines, which have a rating of 50 hp or greater, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in the California Code of Regulations, Title 13, Section 2423(b)(1) unless certified by the onsite AQCMM that such engine is not available for a particular item of equipment. In the event that a Tier 2 engine is not available for any equipment larger than 50 hp, that engine shall be a Tier 1 engine.
- To assist the AQCMM in identifying engines that comply with the above requirement over the period of construction, all diesel fueled engines used for construction shall have clearly visible tags issued by the AQCMM showing that the engine meets the above requirement.
- Minimize idling time to five minutes when construction equipment is not in use, unless per engine manufacturer's specifications or for safety reasons more time is permitted or required.
- To the extent practicable, manage operation of heavy-duty equipment to reduce emissions such as maintain heavy-duty earthmoving, stationary, and mobile equipment in optimum running conditions. This can result in 5 percent fewer emissions.
- To the extent practicable, employ construction management techniques such as timing construction to occur outside the ozone season of May through October, or scheduling equipment use to limit unnecessary concurrent operation.

d) **Less than Significant with Mitigation.** Diesel emissions would be generated from diesel-powered construction equipment and diesel trucks associated with project construction. Diesel particulate matter (DPM) has been classified by the ARB as a toxic air contaminant for the cancer risk associated with long-term (i.e., 70 years) exposure to DPM. Given that construction would occur for a limited amount of time and spread out over a large geographic area, localized exposure to DPM would be minimal. During operations, diesel combustion during emergency power outages, in order to run the proposed well site generators, would result in additional DPM emissions. Such emissions would occur infrequently, on an unplanned but limited basis, during periods when grid power supply at one or more well sites is interrupted. DPM emissions would cease upon restoration of grid power to the facility. As a result, the cancer risks from the project associated with diesel emissions over a 70-year lifetime are considered very small. Therefore, the impacts related to DPM would be less-than-significant. Likewise, as noted above, the project would result in emissions that are anticipated to be below relevant thresholds, as discussed above, for criteria air pollutants during construction or operation of the project. However, Implementation of **Mitigation Measure AIR-1** would be required ensure that airborne emissions would be minimized, and would also ensure that the project would not expose sensitive receptors to substantial pollutant concentrations.

e) **Less than Significant.** The project would involve the installation and use of new ammonia addition facilities and associated appurtenances within the project area, including construction and operation of those facilities. The project would involve the storage of ammonia on site at each well site and the NSPAF. However, ammonia and vapors would

be generally contained in on site facilities, and are not expected to escape or result in objectionable odors on site or in nearby areas. The project would not otherwise involve storage, use, or generation of other substances which could emit objectionable odors. No mitigation is warranted.

References

Smith, T.B., Saunders, W.D., and Takeuchi, D.M., 1984. Application of Climatological Analysis to Minimize Air Pollution Impacts in California. Agreement A2-119-32, Prepared for California Air Resources Board by Meteorology Research Inc., August 1984.

2.4 Biological Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
4.	**BIOLOGICAL RESOURCES — Would the project:**				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Environmental Setting

Data Sources/Methodology

Biological resources within the project area were identified by ESA biologist Lindsay Tisch through field reconnaissance conducted on April 9th, 2012. Prior to the reconnaissance survey, a review of pertinent literature and database queries were conducted for the project area and surrounding area. The reconnaissance survey consisted of a pedestrian survey of the project area in its entirety. The primary sources of data referenced for this study include the following:

- "Federal Endangered and Threatened Species that may be Affected by projects in the Lodi South and Stockton West, California 7.5-Minute Topographic Quadrangle" (USFWS, 2012);
- CNDDB reported occurrences of special-status species within the Lodi South and Stockton West, California and eight surrounding quads (CNDDB 2012);
- California Natural Diversity Database (CNDDB), Rarefind computer program (v4.1.0)(CDFG, 2012);

- California Native Plant Society's Inventory of Rare and Endangered Plants (v8-01a) (CNPS, 2012).

A list of special-status species with potential to occur on the project area was compiled from these sources and from information collected during the field reconnaissance. **Appendix B** includes the special-status species lists for the project region.

Regional Ecology

The project area is located in the northern San Joaquin Valley within basin-type physiography. Basins are common in the San Joaquin Valley and are commonly associated with hardpans and high clay content (McElhiney, 1992). Portions of the project (i.e., the intake and the western half of the raw water pipeline alignment) are within the Primary and Secondary Zones of the Sacramento-San Joaquin Delta. Tracts of former freshwater wetlands were drained beginning in the 1850s. Land subsidence below sea level is common in the Delta, as a result of both compaction and oxidation of organic soils, including peats and mucks.

San Joaquin County is located in the central region of the Central Valley. Historically, this region supported extensive annual grasslands intermixed with a variety of vegetative communities including oak woodland, wetland, and riparian woodland. Intensive agricultural and urban development has resulted in large losses and conversion of these habitats. The remaining native vegetative communities exist as isolated remnant patches within urban and agricultural landscapes, or in areas where varied topography has made urban and/or agricultural development difficult.

Site Description

The project is comprised of twelve small parcels, well sites, scattered throughout the City, plus one larger parcel that would house the NSPAF, located adjacent to the northern levee along the Calaveras River. Surrounding land uses vary accordingly and include residential, urban, and light industrial, with agricultural land uses adjacent to some of the well sites.

The project area is situated on nearly flat terrain within urban residential areas of the City. The Calaveras River, Bear Creek, and Mosher Creek are within close proximity to several of the proposed facilities, however they are not within the boundaries of the NSPAF or any of the proposed well sites. These waterways have a gentle slope towards the west eventually draining into the Sacramento-San Joaquin Delta.

All of the well sites and the NSPAF site can be considered within the urban residential zone of urban habitat. This habitat type includes landscape or planted vegetation, as well as vacant urban lands with little or no native vegetation types and urban lots where a portion of the area is barren. In the urban residential zone, approximately 40 percent of the land's surface is covered by impervious material.

The area surrounding some of the well sites consists of open space or landscaped parks. The open space areas can be classified as ruderal grassland with patches of barren ground and non-native vegetation interspersed. Several of the well sites are adjacent to aquatic habitat which can be

classified as riverine. Valley oaks (*Quercus lobata*) and cottonwoods (*Populus sp.*), and other large trees which grow within close proximity to well sites 10-R, 19, 21, 25, and 26 and could provide suitable nesting sites for many raptors, such as Swainson's hawk and white-tailed kite, and other migratory birds. There are no wetlands or water features within the well site boundaries and suitable habitat for plant species is not present. All existing wells are situated on concrete pads and are enclosed within a fence with a locked gate. A gravel base surrounds the concrete pads and some non-native weedy vegetation has established itself within these areas. The following text summarizes sites based on common biological resources characteristics relevant to each.

NSPAF and Well Sites 10-R, 27, 28, and 29

These well sites and the NSPAF site are similar in that they are located adjacent to aquatic habitat. The Calaveras River is approximately 55 feet east of well site 28, approximately 150 feet south of the NSPAF, and approximately 200 feet southeast of well site 27. Bear Creek is approximately 130 feet southeast of well site 29; and Mosher Creek is approximately 100 feet south of well site 10-R. Within the NSPAF boundaries there are two stormwater collection basins dominated by cattails (*Typha* sp.). The banks of the levees consist of non-native ruderal vegetation with large patches of barren ground.

Well Sites 19, 21, 25, 30, and 32

These well sites are all located within or adjacent to open space or landscaped urban parks. Well sites 19, 30, and 32 are situated immediately south of large fallow fields which may have been historically used for agriculture; at the time of the field survey the fields appear to be fallow and dominated by woodsorrel (*Oxalis* sp.) and non-native weedy vegetation. There was no evidence of disking or ploughing. Large valley oaks and ornamental trees surround the well sites and are scattered in the fallow fields. Well sites 21 and 25 are located within well maintained public parks, Cortez Park and Panella Park, respectively. These are located within urban residential areas and are well maintained, landscaped parks with large valley oaks, redwoods and ornamental landscape trees.

Well Sites 3-R, 26, and 31

These well sites are situated entirely within urban development. Well site 3-R is situated behind (west) of the City's operations field office and is surrounded by parking lots, a Costco to the north and residential houses to the east. To the south is a small empty lot consisting of barren ground interspersed with non-native weedy vegetation. Tall ornamental landscape trees are located within close proximity to this well site. Well site 26 is bounded by East Hammer Lane to the north, a Les Schwab Tire Center to the west, and a narrow strip of barren ground interspersed with non-native weedy vegetation to the south and east. A sound wall separates the well site from this strip of land. Large ornamental landscape trees are located in the front of the well site. Well site 31 is situated within an urban residential neighborhood. It is bounded to the north, west and south by houses, Ivano Lane to the southwest and a sound wall to the east.

Plant Communities and Wildlife Habitats

Wildlife habitats were classified using the CDFG's *A Guide to Wildlife Habitats* (Mayer and Laudenslayer 1988), which is integrated with the California Wildlife Habitat Relationships (CWHR) System. Habitats or vegetative communities are assemblages of plant species that occur together in the same area, which are defined by species composition and relative abundance. These plant communities can be generally correlated to habitats for wildlife. Plant communities within the study area were identified using field reconnaissance and aerial photography. The California Wildlife Habitat Relationships (CWHR) habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly occurring birds, mammals, reptiles and amphibians. The plant communities described below generally correlate with wildlife habitat types and are those found within and adjacent to the well sites and the NSPAF.

Urban/Developed

As mentioned above, all of the well sites, including the NSPAF, occur within urban development. Urban areas surrounding the well sites include paved and unpaved roadways, residential, commercial, and industrial developments, and public works infrastructure. Urban environments generally provide limited habitat for common wildlife species such as rock pigeon (*Columba livia*), house sparrow (*Passer domesticus*), American crow (*Corvus brachyrhynchos*), house mouse (*Mus musculus*), and opossum (*Didelphis virginiana*). The tall, ornamental trees along the roads, within the parks, and residential areas may provide suitable nesting habitat for nesting raptors and other migratory bird species.

Ruderal Grassland

Within the project area, ruderal grassland occurs in undeveloped adjacent parcels to the north of well sites 19, 30, and 32, a small parcel of ruderal grassland is located to the south of well site 3-R, and a narrow strip lies to the south and east of well site 26. Ruderal grassland in the project area consists of a mix of non-native annual grasses and forbs that include woodsorrel (*Oxalis* sp.), Bermuda grass (*Cynodon dactylon*), Johnsongrass (*Sorghum halepense*), wild oats (*Avena* sp.), curlydock (*Rumex crispus*), stork's bill (*Erodium* sp.), and yellow star-thistle (*Centaurea solstitialis*). Ruderal grassland may provide habitat for common species such as rock pigeon, house sparrow, house finch (*Carpodacus mexicanus*), and mourning dove (*Zenaida macroura*). These species were observed in these habitats during the field survey. Ruderal grassland within the project area appears to be regularly disturbed by vehicle activity and illegal dumping of refuse. These areas are unlikely to support special-status plant species.

Agriculture

Land designated as agriculture near the project area includes several orchards and vineyards, located within close proximity, but not on site, at well sites 19 and 30. The understory of the orchards is maintained barren; however, the orchards may provide limited habitat for wildlife species such as yellow-billed magpie (*Pica nuttalli*) and western scrub jay. Ground squirrels (*Spermophilus beecheyi*) were observed within several of the orchards..

Riverine

Riverine habitats are distinguished by intermittent (seasonal) or perennial (continually flowing) stream channels. Riverine habitat occurs in the form of the Calaveras River, Bear Creek, and Mosher Creek. The Calaveras River is approximately 55 feet east of well site 28, 150 feet south of the NSPAF, and 200 feet southeast of well site 27. Bear Creek is approximately 130 feet southeast of well site 29; and Mosher Creek is approximately 100 feet south of well site 10-R.

River banks typically support species common to freshwater emergent wetlands or riparian areas including various sedges, cattails (*Typha* spp.), watercress (*Rorippa nasturtium-aquaticum*), water primrose (*Ludwigia peploides*), giant reed (*Arundo donax*), and willow (*Salix* spp.). However, within the project area the river/slough/creek banks support mainly ruderal vegetation.

The open water zones of large rivers or waterways provide resting and escape cover for many species of waterfowl. Mallard (*Anas platyrhynchos*), American coot (*Fulica americana*), common moorhen (*Gallinula chloropus*), and snowy egret (*Egretta thula*) are a few species common to this habitat. Some of the more common mammals found in riverine habitats include river otter (*Lontra canadensis*), mink (*Mustela vison*), muskrat (*Ondatra zibethicus*) and beaver (*Castor canadensis*). Riverine habitat provides habitat for aquatic species such as fish and invertebrates as well as waterfowl, amphibians, and some reptiles.

Regulatory Setting

Federal

U.S. Army Corps of Engineers

Section 404 of the Clean Water Act – The Clean Water Act (CWA) regulates the discharge of pollutants into waters of the U.S., including wetlands. Section 404 of the CWA regulates the discharge of dredged and fill material into wetlands and other waters of the U.S. The federal government defines "waters of the United States" in 33 Code of Federal Regulations (CFR) 328.3 as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    A. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    B. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    C. Which are used or could be used for industrial purpose by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of the above waters;
6. The territorial seas;
7. Wetlands adjacent to the above waters (other than waters that are themselves wetlands). Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.
8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA.

The term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Under normal circumstances, the definition of wetlands requires three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Typical examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a significant ecological nexus to a traditional navigable waterway.

"Other waters of the U.S." refers to those hydric features that are regulated by the Act but are not wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit a defined bed and bank and an ordinary high water mark. The term "ordinary high water mark" refers to that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. Examples of other waters of the U.S. include rivers, creeks, ponds, and lakes.

On June 5, 2007 the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) released guidance on the definitions of jurisdictional waters of the U.S. in response to *Rapanos v. United States* and *Carabell v. United States*. According to this guidance, the USACE and the EPA will take jurisdiction over the following waters:

1. Traditional navigable waters, which is defined as all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. Wetlands adjacent to traditional navigable waters; including adjacent wetlands that do not have a continuous surface connection to traditional navigable waters;
3. Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months);

4. Wetlands adjacent to non-navigable tributaries as defined above; that have a continuous surface connection to such tributaries (e.g. they are not separated by uplands, a berm, dike, or similar feature).

The EPA and the USACE decide jurisdiction over the following waters based on a fact-specific analysis to determine if there is a significant nexus, as defined below, to a traditional navigable water:

1. Non-navigable tributaries that are not relatively permanent;
2. Wetlands adjacent to non-navigable tributaries that are not relatively permanent;
3. Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

The EPA and the USACE generally do not assert jurisdiction over the following features:

1. Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow);
2. Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The EPA and the USACE have defined the significant nexus standard as follows:

1. A significant nexus analysis assesses the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters;
2. Significant nexus includes consideration of hydrologic and ecologic factors including:
    A. Volume, duration, and frequency of flow, including consideration of certain physical characteristics of the tributary,
    B. Proximity to the traditional navigable water,
    C. Size of the watershed,
    D. Average annual rainfall,
    E. Average annual winter snow pack,
    F. Potential of tributaries to carry pollutants and flood waters to traditional navigable waters,
    G. Provision of aquatic habitat that supports a traditional navigable water,
    H. Potential of wetlands to trap and filter pollutants or store flood waters, and
    I. Maintenance of water quality in traditional navigable waters.

Examples of wet areas that are not regulated by USACE would include stock watering ponds and created water quality treatment facilities.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (FESA) (16 United States Code [USC] 153 et seq.), the Migratory Bird Treaty Act (16 USC 703–711), and the Bald Eagle Protection Act (16 USC 668), among other programs discussed below.

Federal Endangered Species Act – Under the Federal Endangered Species Act (FESA) the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 USC 1533[c]). Two federal agencies oversee FESA: the USFWS has jurisdiction over plants, wildlife, and resident fish, and the National Marine Fisheries Service (NMFS) has jurisdiction over anadromous and marine fish as well as mammals. Section 7 of FESA mandates that all federal agencies consult with the USFWS and NMFS to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. FESA prohibits the "take"[1] of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

Section 10 of FESA requires the issuance of an incidental take permit before any public or private action may be taken that could harm, harass, injure, kill, capture, collect, or otherwise hurt any individual of an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan that provides specific measures to offset project impacts on endangered or threatened species.

The USFWS also publishes a list of candidate species. Species on this list receive "special attention" from federal agencies during environmental review, although they are not protected otherwise under the FESA. The candidate species are those for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened. Project impacts on such species would be considered significant in this Initial Study. Species of Concern is an informal term, not defined in the federal Endangered Species Act. The Sacramento Office of the United States Fish and Wildlife Service no longer maintains a Federal Species of Concern list.

Pursuant to the requirements of FESA, an agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species could be present in the project area and whether the project action would have a potentially significant impact on such species. In addition, the agency is required to determine whether the project action is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]).

Similarly, the permitting responsibilities of the USACE include consultation with the USFWS and NMFS when federally listed species (i.e., listed under the FESA) are at risk. At both the state and federal levels, the process requires that a Biological Assessment be prepared to determine the effects on listed species. Under both USFWS and California Department of Fish and Game

[1] "Take" is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

(CDFG) policy, species of concern are not subject to the same consultation requirements as listed endangered, rare, or threatened species, but the agencies encourage informal consultation for species of concern that may become officially listed before completion of the CEQA process.

Migratory Bird Treaty Act – The Migratory Bird Treaty Act (16 USC 703, Supp. I, 1989) prohibits the killing, possessing, or trading of migratory birds, bird parts, eggs, and nests, except in accordance with regulations prescribed by the Secretary of the Interior.

Bald Eagle Protection Act – Under the Bald Eagle Protection Act, it is illegal to import, export, take (which includes molest or disturb), sell, purchase, or barter any bald eagle or golden eagle or part thereof.

State

California Department of Fish and Game

CDFG administers a number of laws and programs, discussed below, designed to protect fish and wildlife resources.

California Endangered Species Act – The California Endangered Species Act of 1984 (CESA) – Fish and Game Code Section 2050 et seq – regulates the listing and "take" of endangered and threatened species. A "take" of such a species may be permitted by CDFG through issuance of permits pursuant to Fish and Game Code section 2081, except for designed "fully protected" species (see subsection below).

Fully Protected Species – Prior to enactment of CESA, the designation of "Fully Protected" was used by CDFG to identify species that had been given special protection by the California Legislature by a series of statutes in the California Fish and Game Code. (See §§ 3503.5, 3505, 3511, 3513, 4700, 4800, 5050, 5515). Many fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations; however, the original statutes have not been repealed, and the legal protection they give the species identified within them remains in place. Fully Protected species may not be taken or possessed at any time; and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Because endangered or threatened species can be "taken" for development purposes with the issuance of a permit by CDFG, "fully protected species" actually enjoy a greater level of legal protection than "listed" species.

Protection of Nesting Birds – Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy the nests or eggs of any such bird of prey (i.e., species in the orders Falconiformes and Strigiformes) except otherwise provided by this code or any other regulation adopted hereto." Active nests of all other birds (except English sparrow (*Passer domesticus)* and European starling (*Sturnus vulgaris*)) are similarly protected under Section 3503 of the California Fish and Game Code, as well as birds designated in the International Migratory Bird Treaty Action under Section 3513 of the California Fish and Game Code. Disturbance that causes nest abandonment and/or loss of reproductive failure is considered a take by the CDFG. This statute does not provide for the issuance of an incidental take permit.

Species of Special Concern – CDFG also designates California Species of Special Concern (CSC) which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species or fully protected species but may be added to official lists in the future. The SSC list is intended by CDFG as a management tool for consideration in future land use decisions. Under CDFG policy, CSC are not subject to the same consultation requirements as listed endangered, rare, or threatened species, but the agency encourages informal consultation for Species of Special Concern that may become officially listed before completion of the CEQA process.

Native Plant Protection Act – California Fish and Game Code Section 1900–1913, also known as the Native Plant Protection Act, is intended to preserve, protect, and enhance endangered or rare native plants in California. The act directs CDFG to establish criteria for determining what native plants are rare or endangered. Under Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more cause. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. The act also directs the California Fish and Game Commission to adopt regulations governing the taking, possessing, propagation, or sale of any endangered or rare native plant.

Lake and Streambed Alteration Program – CDFG is authorized under the California Fish and Game Code Sections 1600–1607 to develop mitigation measures and enter into a Streambed Alteration Agreements with applicants who propose projects that would obstruct the flow of, or alter the bed, channel, or bank of a river or stream in which there is a fish or wildlife resource, including intermittent and ephemeral streams.

Sensitive Natural Community – A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, is structurally complex, or is in other ways of special concern to local, state, or federal agencies. CEQA identifies the elimination or substantial degradation of such communities as a significant impact. The CDFG tracks sensitive natural communities in the CNDDB.

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a "candidate species" that has not yet been listed by either the USFWS or CDFG. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted. Examples of species that may be considered under CEQA Section 15380 include some vascular plants.

Local

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (San Joaquin Council of Governments, 2000) provides a strategy for balancing the need to conserve open space and the need to convert open space to non-open space use while providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the federal or state ESA. The SJMSCP is a 50-year plan and will be in effect until the year 2049. The SJMSCP is implemented by a Joint Powers Authority (JPA). The JPA is responsible for conducting all required preconstruction surveys, informing an applicant of "Incidental Take" minimization measures, confirming that "Incidental Take" minimization measures have been implemented prior to site-disturbance, and collecting development fees. Development fees are determined by the type and area of habitat converted to development.

Participation in the SJMSCP is voluntary for local jurisdictions and independent project proponents, and allows a participant to conduct permitted activities that result in or may result in "Incidental Take" of listed species covered by the SJMSCP. Participation in the SJMSCP may facilitate or expedite the approval of development projects since participants would avoid having to obtain required permits separately or authorizations directly from the regulating agencies. The JPA has obtained permits and authorizations for the conversion of a predetermined amount of open space habitat to development. These permits and authorization would cover a participant in the SJMSCP.

Certain land uses, were not included in mapped land uses in the SJMSCP. Furthermore, neither the diversion nor the conveyance of water is covered by the SJMSCP. Coverage for these land uses is subject to a case-by-case review by the JPA's Technical Advisory Committee (TAC) to ensure that the biological impacts of projects fall within the parameters established by the SJMSCP.

Project proponents not otherwise subject to the SJMSCP may participate in the SJMSCP upon making a request to the JPA. The JPA may approve such requests with the concurrence of the Permitting Agencies' representatives on the TAC. Approval of such requests is contingent upon the JPA finding that sufficient Incidental Take acres remain and that mitigation pursuant to the SJMSCP is appropriate for the impacts on the species covered by the SJMSCP. The City would request such approval for the proposed facilities included in the project, to the extent warranted.

San Joaquin County Tree Preservation

The San Joaquin County General Plan recognizes riparian areas, significant oak groves, and heritage oak trees (oaks with a 32-inch diameter measured at a height of 4.5 feet) as resources of significant biological and ecological importance in San Joaquin County, and includes provisions to protect these resources. Additional provisions protect riparian habitat. According to the 1992 San Joaquin General Plan, riparian habitat must be retained or replaced, riparian woodlands may not be removed, significant oak groves must be retained, and heritage trees must be protected. In the event that tree resources are impacted by a project, the type, quantity, and timing of planting of replacement trees or riparian vegetation is described.

City of Stockton Tree Preservation

Heritage trees are protected under the City's Municipal Code. Heritage trees are defined as any valley oak, coast live oak, and interior live oak trees which are located on public or private property, and which have a trunk diameter of sixteen inches or more, measured at twenty-four inches above actual grade.

Special-Status Species

Definitions of Special-Status Species

Special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special status species" in this study following a convention that has developed in practice but has no official sanction. For the purposes of this assessment, the term "special-status" includes the following:

- Federally listed or proposed under the Federal Endangered Species Act (50 Code of Federal Regulations [CFR] 17.11-17.12). They are the only species that are specifically regulated by the U.S. Fish and Wildlife Service on tribal lands.
- Candidates for listing under the Federal Endangered Species Act (61 FR 7596-7613)
- State listed or proposed under the California Endangered Species Act (14 California Code of Regulations [CCR] 670.5)
- Species listed by the by CDFG as a species of special concern
- Fully protected animals, as defined by the State of California (CDFG Code Section 3511, 4700, and 5050)
- Species that meet the definition of threatened, endangered, or rare under the CEQA (CEQA Guidelines Section 15380)
- Plants listed as rare or endangered under the California Native Plant Protection Act (CDFG Code Section 1900 et seq.)

Potentially Affected Listed and Proposed Species

A list of special-status plant and animal species that have the potential to occur within the vicinity of the study area was compiled based on data in the California Natural Diversity Database (CNDDB) (CDFG, 2012, CNPS Inventory of Rare and Endangered Plants (CNPS, 2012), and the USFWS List of Federal Endangered and Threatened Species that may be Affected by projects in the Lodi South and Stockton West Quad (USFWS, 2012). Conclusions regarding habitat suitability and species occurrence are based on a reconnaissance-level area assessment conducted by an ESA biologist, as well as existing literature and databases described previously.

Appendix B lists special-status plants and animals with the potential to occur within the project area. Additionally, **Appendix B** also indicates the project's "potential to impact" each species listed. The "Potential for Occurrence" category is defined as follows:

- Unlikely: The project site and/or immediate area do not support suitable habitat for a particular species. Project site is outside of the species known range.
- Low Potential: Project site and/or immediate area only provide limited habitat for a particular species. In addition, the known range for a particular species may be outside of the immediate project area.
- Medium Potential: The project site and/or immediate area provide suitable habitat for a particular species, and habitat for the species may be impacted.
- High Potential: The project site and/or immediate area provide ideal habitat conditions for a particular species and/or known populations occur in immediate area and within the potential area of impact.

Discussion

a) **Less than Significant with Mitigation**. The following sub-sections provide a discussion of potential effects to special-status plant and animal species.

Special-Status Plants

The project area does not provide habitat for any special-status plant species. No special-status plant species are likely to occur within the site itself due to the high degree of disturbance associated with the surrounding land uses. The well sites are situated on concrete pads adjacent to developed lots, landscaped parks or open space lots that are either vegetated with ruderal or ornamental vegetation or mostly barren, with ruderal vegetation dominating those areas supporting plants. Construction activities and operation of the well sites will not impact adjacent habitats. Therefore, implementation of the project will have **no impact** on special-status plants.

Special-Status Wildlife

Aquatic Species

Potential habitat for Central Valley steelhead, Central Valley spring-run Chinook, giant garter snake (GGS), western pond turtle (WPT), tricolored blackbird, and yellow-headed blackbird occurs adjacent to the NSPAF, and well sites 3-R, 10-R, 25, 26, 27, 28, and 29.

The Calaveras River, Bear Creek and Mosher Creek provide potential suitable aquatic habitat for Central Valley steelhead, Central Valley spring-run Chinook, GGS and western pond turtle, with potential upland habitat for GGS and western pond turtle occurring within 300 feet of the aquatic habitat.

Given the timing of migrations and emigrations of adults and juveniles, Central Valley steelhead may be expected to occur in the Calaveras River near and within the project area adjacent to the NSPAF from November to early April, according to recent monitoring data by the Stockton East Water District, which states that steelhead opportunistically use the

watershed when sufficient rainfall produces passage flows in the system (FISHBIO Environmental, 2007). The portion of the Calaveras River that is adjacent to the NSPAF is within a USFWS critical habitat designation. Adult Chinook salmon have been observed in the Calaveras River between November and July. Spawning has been observed in fall, spring, and early summer months. The California Department of Fish and Game (CDFG 1993) documented adult Chinook salmon in the Calaveras River in 1972, 1975, 1976, 1978, 1982, and 1984. Juvenile salmon have been observed in the river between February and June (CDFG 1993).

Habitat types utilized by giant garter snakes include freshwater marsh, flooded rice fields, and drainage canals. During their active season giant garter snakes are usually found within a few feet of water, often between the water level and the top of adjacent banks. Winter retreats utilized by the giant garter snake include small mammal burrows and manmade structures such as piles of large rocks or riprap. Adult and juvenile snakes emerge from their winter retreats in late March or early April. They are active from the time of emergence to the end of October with surface activity concentrated from April to July. Western pond turtles utilize habitat similar to GGS. Two CNDDB occurrences of GGS were recorded, in 1976, in Bear Creek approximately 1.2 miles northeast of well #29, and within the Stockton Diverting Canal, approximately 2.0 miles southeast of wells #27 and 28, and the NSPAF. There are currently no CNDDB recorded occurrences of western pond turtle within a 5-mile radius of the project area, however this species utilizes similar habitat to that of GGS so there is the potential for this species to occur.

The stormwater collection basins within the NSPAF are dominated by cattails and could provide suitable nesting habitat for the tricolored blackbird and the yellow-headed blackbird. While there have been no CNDDB recorded occurrences of the tricolored blackbird and the yellow-headed blackbird within a 5-mile radius of the project area, these two species have the potential to occur within the project area as they utilize similar habitat as that of the common red-winged blackbird (*Agelaius phoeniceus*), which was observed during the field survey.

Although project construction of the NSPAF and well sites 27, 28, 29, and 10-R has been designed to avoid the Calaveras River, Bear Creek and Mosher Creek, impacts to GGS and western pond turtle could occur. As the well sites and NSPAF are in close proximity to those aquatic resources, GGS and WPT could utilize the sites while dispersing or moving between aquatic or upland features in the immediate area surrounding the NSPAF and well sites. Construction of the pipeline from the NSPAF to the existing North Stockton Pipeline will temporarily impact potential GGS upland habitat.

The project is not anticipated to indirectly impact special-status aquatic species such as the Central Valley steelhead, and Central Valley spring-run Chinook, through construction period increases in sediment or other water quality pollutants. Construction of the pipeline and associated vaults at the NSPAF are approximately 200 feet from the Calaveras River, with a levee between the river and the proposed construction area. Construction period incidental spills or material could still be accidentally discharged into the Calaveras River

via the existing stormwater system, which pumps water from the NSPAF site area into the Calaveras River. This could result in a temporary increase in fine sediments discharged to the river. Increased sedimentation may adversely affect water quality and channel substrate composition. Specific rates of sedimentation are dependent upon the duration, volume, and frequency at which sediments are contributed to the surface water flow. Substantial sedimentation rates may smother fish eggs and fish food (i.e., benthic invertebrates) and degrade spawning habitat. Furthermore, suspended sediments increase the turbidity of the water. High rates of turbidity can result in direct mortality or deleterious sublethal effects (e.g., gill abrasion, decreased visibility during foraging) to fish.

However, with the implementation of **Mitigation Measure BIO-1, and BIO-2**, these project impacts would be reduced or avoided, and impacts would be considered less than significant.

Nesting Songbirds and Raptors

Habitats surrounding the well sites provide suitable nesting and foraging habitat for migratory songbirds, such as the yellow warbler, and raptors, such as the Swainson's hawk, burrowing owl, and white-tailed kite.

Suitable nesting and foraging habitat occurs within the landscaped parks, open ruderal grassland and agricultural areas adjacent parcels to the north of well sites 19, 21, 25, 30, and 32, to the south of well site 3-R, and to the south and east of well site 26. Numerous Swainson's hawk nests have been recorded within a half mile of all of the well sites (CDFG, 2012). Several burrowing owl occurrences have been recorded in the CNDDB within the project area. One recorded occurrence, in 1999, is approximately 0.5 miles northeast of well #26, 1.25 miles northeast of well #25, and 1.5 miles northeast of well site 3-R. While there have been no CNDDB recorded occurrences for yellow warbler, and white-tailed kite, these two species utilize similar habitat to the Swainson's hawk and burrowing owl; therefore there is the potential for these species to occur within the project area.

Project construction may impact these species during the breeding season. These species may be adversely affected if active nest sites are either removed or exposed to a substantial increase in noise or human presence during construction and operation. This is a potentially significant effect. **Mitigation Measure BIO-2** would reduce potential impacts on nesting songbirds and raptors to less than significant levels.

Mitigation Measures

> **Measure BIO-1:** Implementation of a Stormwater Pollution Prevention Plan (SWPPP) and erosion control measures), as well as Best Management Practices (BMPs) for construction activities, would reduce potential impacts to special-status fisheries and other aquatic species and habitat resulting from sedimentation and turbidity. Specific measures aimed at protecting aquatic resources include:
>
> - Sediment curtains will be placed around the construction or maintenance zone to prevent sediment disturbed during trenching activities from being transported and deposited outside of the construction zone.

- Silt fencing will be installed in all areas where construction occurs within 100 feet of known or potential aquatic habitat.
- Spoil sites (concrete wash areas) will be located so they do not drain directly into the Calaveras River, Bear Creek, and Mosher Creek. If a spoil site has the potential to drain into any of these waterways, catch basins will be constructed to intercept sediment before it reaches the channel. Spoil sites will be graded to reduce the potential for erosion.

Measure BIO-2: The City anticipates that this project would be approved for participation in the SJMSCP. Compliance with the SJMSCP would provide for impact avoidance measures (e.g., pre-construction surveys during appropriate seasons for identification, construction set-backs, restriction on construction timing) and mitigation for loss of habitat for all species that may be affected by this project. Impact avoidance measures would include, but are not limited to, the species-specific measures presented below, which are summarized from the SJMSCP. Complete impact avoidance and habitat compensation measures from the SJMSCP are presented in detail in **Appendix C**.

Giant Garter Snake

- Construction shall occur between May 1 and October 1, which is the active period for the snake.
- Between October 2 and April 30, additional measures may be necessary to minimize and avoid take.
- Pre-construction surveys for the giant garter snake (conducted after completion of environmental reviews and prior to ground disturbance) shall occur within 24 hours of ground disturbance.
- Vegetation clearing and disturbance will be limited to the minimal area necessary within 200 feet of the banks of potential giant garter snake aquatic habitat.
- On-site construction personnel shall be given instruction regarding the presence of SJMSCP Covered Species and the importance of avoiding impacts to these species and their habitats.

Swainson's Hawk

In order to encourage the retention of known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting), for any nest tree that becomes occupied during construction activities, all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest. Alternatively, nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

Western Pond Turtle

When nesting areas for pond turtles are identified on a project site, a buffer area of 300 feet shall be established between the nesting site (which may be immediately adjacent to wetlands or extend up to 400 feet away from wetland areas in uplands) and the wetland located near the nesting site. These buffers shall be indicated by

temporary fencing if construction has or will begin before nesting periods end (the period from egg laying to emergence of hatchlings is normally April to November).

White-tailed Kite and Other Nesting Birds

For white-tailed kites and other nesting bird species, preconstruction surveys shall investigate all potential nesting habitat on the project site (e.g., especially tree tops 15 to 59 feet above the ground in oak, willow, eucalyptus, cottonwood, or other deciduous trees, as well as cattails), during the nesting season (February 15 to September 15).

Western Burrowing Owl

Burrowing owls may be discouraged from using the project area by managing vegetation and prey populations. If the project site is an unlikely occupation site for red-legged frogs, San Joaquin kit fox, or tiger salamanders, ground squirrel burrows may be destroyed to discourage occupation by burrowing owls.

- During the non-breeding season (September 1 through January 31) burrowing owls occupying the project site should be evicted from the project site by passive relocation as described in the CDFG's Staff Report on Burrowing Owls (CDFG, 1995).
- During the breeding season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided with a 75 meter protective buffer until and unless the TAC, with the concurrence of the Permitting Agencies' representatives on the TAC; or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either:
  1. the birds have not begun egg laying, or
  2. juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed.

b) **No Impact**. There is no riparian vegetation located within the project area.

c) **Less than Significant**. Bear Creek, Calaveras River, and Mosher Creek, and their associated wetlands, are considered waters of the U.S. and fall under the jurisdiction of the USACE per Section 404 of the CWA. It is not anticipated that work will occur below the Ordinary High Water (OHWM) of these features and that all direct impacts would be limited to the bank; under this scenario, a USACE Section 404 permit would not be required.

The current project description includes the installation of four new pipelines, ranging in diameter from ½-inch to 12-inches in diameter, that would extend from the existing North Stockton Pipeline, located immediately west of the existing Riverbend/Calaveras River Stormwater Pump Station, to the proposed NSPAF building. A single injection vault would be installed at the connection point between the North Stockton Pipeline and the water lines. The vault would be located approximately 110 feet west of the proposed NSPAF building. The vault occupies approximately 0.001 acres. Because these proposed facilities would not

be within the banks of the Calaveras River, CWA Section 404 permitting requirements are not anticipated.

d) **Less than Significant with Mitigation**. The project would not *substantially* interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The project area is not located within an established native resident or migratory wildlife corridor or wildlife nursery site. However, as some of the well sites are situated between significant aquatic features (the Calaveras River, Bear Creek, and Mosher Creek) and other aquatic features such as permanent ponds, species such as GGS and WPT could move into the construction area at well sites 27, 28, 29 and 10-R and the NSPAF. **Implementation of Mitigation Measure BIO-1 and BIO-2** would reduce potential impacts to migratory wildlife corridors to less than significant.

e) **Less than Significant with Mitigation**. The San Joaquin County General Plan, as well as the City of Stockton General Plan, has a tree-preservation policy to preserve large historic oaks and native trees. While a formal tree survey has not been conducted for the project site, native oak species and other species protected by the County's and City's General Plans were observed during the field visit, scattered throughout the project area. Construction activities may occur within the dripline of native oak trees or landmark trees, or may result in the direct removal of native oak trees or landmark trees around well sites 10R, 19, 21, 25, and 26. Work within the dripline of trees may cause permanent damage to the root system and the subsequent loss of the tree. The General Plan calls for avoidance of native oaks or landmark trees of significant size. Impacts to protected oak or landmark trees are considered a significant, adverse impact. **Implementation of Mitigation Measure BIO-3** and **BIO-4** would reduce potential impacts to trees to less than significant.

Mitigation Measures

Measure BIO-3: Protect Sensitive Tree Resources Adjacent to Construction Activities. Sensitive tree resources adjacent to construction activities may require additional protection. Where feasible, buffer zones should include a minimum one-foot-wide buffer zone outside the dripline for oaks and landmark trees. The locations of these resources would be clearly identified on the construction drawings and marked in the field by a Certified Arborist. Fencing or other barriers would remain in place until all construction and restoration work that involves heavy equipment is complete. Construction vehicles, equipment, or materials would not be parked or stored within the fenced area. No signs, ropes, cables, or other items would be attached to the protected trees. Grading, filling, trenching, paving, irrigation, and landscaping within the driplines of oak trees would be limited. Grading within the driplines of oak trees would not be permitted unless specifically authorized by a Certified Arborist. Hand-digging must be done in the vicinity of major trees and as recommended by a Certified Arborist to prevent root cutting and mangling by heavy equipment.

In the event that an oak tree must be removed or an oak tree is lost due to construction activities, the City will implement **Mitigation Measure BIO-4**. All oak

tree mitigation and/or restoration will be consistent with both the County's and the City's General Plans, Tree Preservation objectives.

Measure BIO-4: The following measures will avoid or minimize potential construction-related impacts to oaks and other native heritage trees:

- Prior to removal of any trees, an ISA Certified Arborist shall conduct a tree survey in areas that may be impacted by construction activities. This survey shall document tree resources that may be adversely impacted by implementation of the project. The survey will follow standard professional practices.
- Current vegetation and oaks will be retained to extent feasible. A Tree Protection Zone (TPZ) shall be established around any tree or group of trees to be retained. The TPZ will be delineated by an ISA Certified Arborist. The TPZ shall be defined by the radius of the dripline of the tree(s) plus one foot. The TPZ of any protected trees shall be demarcated using fencing that will remain in place for the duration of construction activities.
- Construction-related activities shall be limited within the TPZ to those activities that can be done by hand. No heavy equipment or machinery shall be operated within the TPZ. Grading shall be prohibited within the TPZ. No construction materials, equipment, or heavy machinery shall be stored within the TPZ.
- The City will replace any trees removed to ensure no net loss of habitat functions or values. All trees planted will be purchased from a locally adapted genetic stock obtained within 50 miles of the project site, where feasible. Oak species shall be replaced at a 3:1 ratio. All other species shall be replaced at a 2:1 ratio.
- The City shall protect other wetlands, and riverine habitats located in the vicinity of the project area by installing protective fencing. Protective fencing shall be installed along the edge of construction areas including temporary and permanent access roads where construction will occur within 200 feet of the edge of wetland and riverine habitat (as determined by a qualified biologist). The location of fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, trenching, grading, or other surface-disturbing activities outside of the designated construction area. Signs shall be erected along the protective fencing at a maximum spacing of one sign per 50 feet of fencing. The signs shall state: "This area is environmentally sensitive; no construction or other operations may occur beyond this fencing. Violators may be subject to prosecution, fines, and imprisonment." The signs shall be clearly readable at a distance of 20 ft, and shall be maintained for the duration of construction activities in the area.

As an alternative to offsite mitigation, the project proponent may contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision Fish and Game Code §1363(a), for the purpose of purchasing oak woodlands conservation easements, as specified under paragraph (1) of subdivision (d) of that section and the guidelines and criteria of the Wildlife Conservation Board. This measure may be implemented at such time as the Wildlife Conservation Board and/or California Department of Fish and Game establish guidelines, criteria, and a payment schedule for contribution to the Oak Woodlands Conservation Fund.

f) **No impact**. Although the project is located with the SJMSCP, the project does not propose to permanently convert any large areas of wildlife habitat to developed land. Each of the proposed well sites and the NSPAF are within already developed lands. The JPA must find that mitigation pursuant to the SJMSCP is appropriate for the impacts on the SJMSCP covered species. The construction and operation of the NSPAF and well sites do not conflict with the SJMSCP. Therefore, there would be **no impact**.

References

California Department of Fish and Game (CDFG). 2012a. California Natural Diversity Database (CNDDB). September 2011 GIS data for the Thornton, Lodi North, Lockeford, Terminous, Lodi South, Waterloo, Holt, Stockton West, Stockton East, Union Island, Lathrop, and Manteca, USGS 7.5-minute quads. Biogeographic Data Branch, California Department of Fish and Game. Sacramento, CA.

CDFG, 2012b. CNDDB RareFind 4 for Commercial Subscribers. California Department of Fish and Game, Biogeographic Data Branch, Sacramento, CA. RareFind program accessed on April 5th, 2012 at: https://nrmsecure.dfg.ca.gov/cnddb/view/query.aspx

CDFG. 1993. Restoring Central Valley Stream: A Plan for Action. Inland Fisheries Division. Compiled by F.L. Reynolds, T.J. Mills, R. Benthin, and A. Low. Report for public distribution, Nov 10, 1993. Inland Fisheries Division, Sacramento.

California Native Plant Society (CNPS). 2012. Inventory of Rare and Endangered Plants (online edition, v8-01a). Search of the Thornton, Lodi North, Lockeford, Terminous, Lodi South, Waterloo, Holt, Stockton West, Stockton East, Union Island, Lathrop, and Manteca, USGS 7.5-minute quads. California Native Plant Society. Sacramento, CA. Accessed on Thursday, April 5th, 2012.

FISHBIO Environmental, LLC. 2007. San Joaquin Basin: Calaveras River. Oakdale, CA. Available online at: http://www.sanjoaquinbasin.com/calaveras-river.html

USFWS. 2012. Federally Endangered and Threatened Species list for the Lodi South and Stockton West USGS 7.5-minute quads conducted April 5th, 2012 at: http://www.fws.gov/sacramento/es/spp_list.htm. Endangered Species Program. Sacramento Fish and Wildlife Office. Sacramento, CA.

2.5 Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
5. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Environmental Background

Numerous laws and regulations require federal, state, and local agencies to consider the effects a project may have on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the various agencies proposing the action, and prescribe the relationship among other involved agencies (e.g., State Historic Preservation Office [SHPO] and the Advisory Council on Historic Preservation). CEQA; and the California Register of Historical Resources (CRHR), Public Resources Code (PRC) 5024, are the primary federal and State laws governing and affecting preservation of cultural resources of national, state, regional, and local significance.

ESA personnel performed a cultural resources survey in May 2012. The goal of the survey was to identify surface evidence of archaeological materials and/or historic-period built features. Archaeologists systematically surveyed all 13 facility sites at a maximum of 10-meter transects within the fenced portions. The field crew imposed a 10 meter buffer around all proposed impacts at the two unfenced areas (well sites #21 and #25). Staff did not survey portions of the facilities that contained pavement or standing structures. The survey crew also examined the path of those proposed sewer line tie-in segments that extended beyond the fence line of a facility.

Prehistoric Setting

Archaeological work in the area has contributed to the development of a prehistoric chronology for human occupation of the Central Valley. Fredrickson (1974) identified three general patterns of resource use after the terminal Paleo-Indian period. There are three cultural periods between 6,000 B.P. and A.D. 1,500: the Windmiller, Berkeley, and Augustine patterns. A pattern is a general mode of life characterized archaeologically by technology, particular artifacts, economic systems, trade, burial practices, and other aspects of culture.

The Windmiller Pattern (6,000 B.P. to 2,500 B.P.) demonstrates evidence of a mixed economy that focused on game procurement and the use of wild plant foods. The archaeological record contains numerous projectile points with a wide range of faunal remains. Hunting was not limited to terrestrial

animals, as is evidenced by the Windmiller toolkit, which included fishing hooks and spears, with the remains of sturgeon, salmon, and other fish. This cultural group also used plant resources, as indicated by ground stone artifacts and clay balls used for boiling acorn mush. Settlement strategies during the Windmiller period reflect a seasonal adaptation. People habited sites in the valley during the winter months, but populations moved into the foothills during the summer (Moratto 1984).

The Windmiller Pattern ultimately changed to a more specialized adaptation labeled the Berkeley Pattern (2,500 B.P. to A.D.500). A reduction in the number of manos and metates and an increase in mortars and pestles indicate a greater dependence on acorns. Although gathered resources grew in importance during this period, the continued presence of projectile points and atlatls in the archaeological record indicates that hunting was still an important activity (Fredrickson 1974).

The Augustine Pattern followed the Berkeley Pattern around A.D. 500. The Augustine Pattern reflects a change in subsistence and land use patterns to those of the ethnographically known people of the historic era. This pattern exhibits a great elaboration of ceremonial and social organization, including the development of social stratification. Exchange became well developed, and this group placed even more intensive emphasis on acorn use, as is evidenced by the presence of shaped mortars and pestles and numerous hopper mortars in the archaeological record. Other notable elements of the artifact assemblage associated with the Augustine Pattern include flanged tubular smoking pipes, harpoons, clam shell disc beads, and an especially elaborate baked clay industry, which included figurines and pottery vessels (Cosumnes Brownware). The presence of small projectile point types, referred to as Gunther Barbed series, suggests the use of the bow and arrow. Other traits associated with the Augustine Pattern include the introduction of pre-interment burning of offerings in a grave pit during mortuary ritual, increased village sedentism, population growth, and incipient monetary economy in which beads were used as a standard of exchange (Moratto 1984).

Ethnographic Setting

At the time of European contact, Northern Valley Yokuts inhabited the project area, though the Sierra Miwok were nearby. Because aboriginal populations in the San Joaquin Valley were soon decimated by European Americans, most information regarding the Northern Valley Yokuts is learned from accounts of Spanish military men and missionaries that have been translated. W. J. Wallace (1978) compiled a summary of these sources, and this is the base of this brief ethnographic setting.

Northern Valley Yokuts territory is defined roughly by the crest of the Diablo Range on the west, and the foothills of the Sierra Nevada on the east. The southern boundary is approximately where the San Joaquin River bends northward, and the northern boundary is roughly half way between the Calaveras and Mokelumne Rivers. The Yokuts may have been fairly recent arrivals in the San Joaquin Valley, perhaps pushed out of the foothills about 500 years ago.

Population estimates for the Northern Valley Yokuts vary from 11,000 to more than 31,000 individuals. Populations were concentrated along waterways and on the more hospitable east side of the San Joaquin River. Villages, or clusters of villages, made up “miniature tribes” (tribelets)

lead by headmen. The estimated number of tribelets is at 30 to 40; each tribe spoke their own dialect of the Yokuts language. Combined with the Southern Valley Yokuts and the Foothill Yokuts dialects, these tongues formed the Yokutsan linguistic family of the Penutian Stock (Shipley 1978).

Principal settlement areas were the tops of low mounds, on or near the banks of the larger watercourses. Settlements were composed of single family dwellings, sweathouses, and ceremonial assembly chambers. Dwellings were small and lightly constructed, semi-subterranean and oval. The public structures were large and earth covered.

Subsistence among the Northern Valley Yokuts revolved around the waterways and marshes of the lower San Joaquin Valley. Fishing occurred with the use of dragnets, harpoons, and hook and line, yielded salmon, white sturgeon, river perch, and other species of edible fish. Waterfowl and small game attracted to the water also provided a source of protein. The contribution of big game to the diet was probably minimal. Vegetal staples included acorns, tule roots, and seeds.

Trade provided goods not available locally. Paiute and Shoshone groups on the eastern side of the Sierra were suppliers of obsidian (volcanic glass used for tools). Shell beads and mussels came from Salinan and Coastanoan groups. Trading relations with Miwok groups yielded baskets and bows and arrows. A network of trails facilitated overland transport, and tule rafts provided transport over water.

Most Northern Valley Yokuts groups had their first contact with Europeans in the early 1800s, when the Spanish began exploring the Delta. The gradual erosion of Yokuts culture began during the mission period. Epidemics of European diseases played a large role in the decimation of the native population. With the secularization of the mission and the release of neophytes, tribal and territorial adjustments were set in motion. People returned to other groups, and formed a number of polyglot "tribes." During the Gold Rush period, miners heading to southern mines pushed native populations out of the way, and out of their existing territories. Ex-miners settling in the fertile valley applied further pressure to the native groups, and altered the landforms and waterways of the valley. Many Yokuts resorted to wage labor on farms and ranches. Others settled on land set aside for them on the Fresno and Tule River Reserves.

Despite this adversity, many Northern Valley Yokuts and affiliated individuals remain in the area today. Following contact with the Native American Heritage Commission, ESA sent letters to interested individuals, requesting information on project areas.

Historical Setting

Spanish explorers and missionaries made up the earliest European-American presence in the general area. Lieutenant Gabriel Moraga was the first European to explore what is now the interior valley of California. In 1808 Moraga explored the Central Valley in order to scout for potential future mission sites and pursue neophytes that had escaped from the coastal missions. During his exploration, Moraga named a small creek after Saint Joachim (Joaquin), father of Mary. When the Spanish later discovered that the creek fed into a larger river, the major waterway and surrounding valley became known as the San Joaquin River and Valley (Hoover 2002).

Trappers, including Jedediah Strong Smith, entered the region in the 1820s, attracted by the fur bearing animals that inhabited the Central Valley. Prior to the Gold Rush, the area was devoted to grazing and hunting, as immense herds of cattle and some horses roamed the valley. In 1844, Charles Weber and William Gulnac obtained the land grant known as Rancho del Campo de los Franceses and organized the first party of non-native settlers intending to occupy the Central Valley. In 1847, Weber laid out a new town on the south side of what would be the Stockton Channel. With the discovery of gold in 1848 Weber developed the town as a supply station for the southern mines, and this community became known as Stockton in 1849. With the resulting influx of population during the Gold Rush, the production of food became the priority in an effort to support the mines, and the San Joaquin Valley developed to become an agricultural supplier. Some of the miners, disappointed in the search for gold, turned to farming in the fertile swamp lands in the San Joaquin Valley. In 1850 California switched from a US territory and became the 31th state of the Union, and San Joaquin County was one of the 27 original counties (Hoover 2002).

Regulatory Setting

National Register of Historic Places

The National Register of Historic Places (National Register) is the nation's inventory of known historic properties. The National Park Service administers the National Register and includes listings of buildings, structures, objects, sites, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

Buildings, structures, objects, sites, and districts over 50 years of age can be listed in the National Register as significant historic properties. However, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the National Register. The criteria for listing in the National Register include resources that:

a. Are associated with events that have made a significant contribution to the broad patterns of history;

b. Are associated with the lives of persons significant in our past;

c. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d. Have yielded or may likely yield information important in prehistory or history.

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior 2010). The NRHP recognizes seven qualities that, in various combinations, define integrity. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

California Environmental Quality Act and the California Register at Historical Resources

CEQA requires that public or private projects financed or approved by public agencies assess the effects of the project on historical resources. Historical resources include any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

Generally, a resource will be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources (CRHR) (Public Resources Code, Section 5024.1), including the following:

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

Archaeological resources that are not historical resources according to the above definitions may be considered "unique archaeological resources" as defined in Public Resources Code Section 21083.2. If an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of the project on those resources will not be considered a significant effect on the environment. It is sufficient that the resource and the effects on it be noted in the appropriate CEQA compliance document, but the resource need not be considered further in the CEQA process.

CEQA requires that if a project results in an effect that may cause a substantial adverse change in the significance of a historical resource, or would cause significant effects on a unique archaeological resource, then alternative plans or mitigation measures must be considered. Therefore, prior to assessing effects or developing mitigation measures, the significance of cultural resources must first be determined. The steps that are normally taken in a cultural resources investigation for CEQA compliance are as follows:

- Identify potential historical resources
- Evaluate the eligibility of historical resources
- Evaluate the effects of the project on eligible historical resources

The State Historic Preservation Office (SHPO) maintains the CRHR. Properties listed, or formally designated as eligible for listing, on the NRHP are automatically listed on the CRHR, as are State Landmarks and Points of Interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

State law seeks to protect cultural resources by requiring evaluations of the significance of prehistoric and historic resources in CEQA documents. A cultural resource is an important historical resource if it meets any of the criteria found in Section 15064.5(a)(3) of the CEQA Guidelines as described above.

Resources eligible for listing in the California Register must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Buildings, structures, or objects that have been moved or reconstructed, and resources that have achieved significance within the past 50 years may also be considered for listing in the California Register under specific circumstances.

Discussion

a) **No Impact.** CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. A historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR), or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California.

The CRHR includes resources that have been listed in or formally determined eligible for listing in the National Register of Historic Places (NRHP), as well as some California State Landmarks and Points of Historical Interest. Under U.S. Department of the Interior, National Park Service guidelines (NPS, 1997), buildings, structures, and objects usually need to be more than 50 years old to be eligible for listing in the NRHP. The California Office of Historic Preservation guidelines for project review and planning call for the identification and evaluation of resources that are more than 45 years old to account for the passage of time between the period of project review and project completion. Resources that are less than 50 years old are generally excluded from listing in the NRHP or CRHR, unless they can be shown to be exceptionally significant.

ESA requested a cultural resources literature and records search at the California Historical Resources Information System (CHRIS) Central California Information Center (CCIC) on April 18, 2012. The records search included an examination of previous cultural resources survey coverage and reports, and known cultural resources within a ¼-mile radius of the NSPAF and 1/8 mile around each of the existing groundwater wells (records search study area). CCIC staff compiled additional information for this section from a number of sources, including the California Department of Parks and Recreation's California Inventory of Historic Resources and the Office of Historic Preservation's Historic Properties Directory, to identify California Historical Landmarks, California Points of Historic Interest, Caltrans State and Local Bridge Survey, and California historic resources that are listed in or determined eligible for listing in the NRHP.

The records search revealed that a total of 15 cultural resources investigations within a ¼-mile radius of the NSPAF and 37 cultural resources investigations within a 1/8-mile radius

of the well sites had been previously conducted. Thirteen of these surveys were within the search radius of both the NSPAF and at least one well site. No previous investigations had occurred within the NSPAF site, but seven of the 37 investigations had encompassed at least one of the well sites.

The records search revealed that three previously recorded cultural resources have been recorded within a ¼ mile radius of the NSPAF, and eight cultural resources within a 1/8 mile radius of the well sites. Of the 11 total identified resources, one linear feature (easement for the Mokelumne River Aqueduct) is located within the project area. Other identified resources are located outside of the project disturbance area.

ESA archaeologist Brian Marks, PhD conducted intensive-level field survey of the project area in May, 2012, to identify and evaluate potential cultural resources that could be affected by the project. The survey found multiple pieces of broken glass, cut bone, and oyster shell in several of the facilities. These materials are more likely the result of recent activity than historic-period activity as the glass was characteristically from the late 1990s or 2000s. In summary, cultural resources survey did not identify any historic/cultural resources.

b) **Less than Significant with Mitigation.** Results of the cultural resources records search conducted at the NCIC indicate that 30 percent of the project area has been previously surveyed and no archaeological sites have been recorded. One prehistoric archaeological resource, a midden site, has been recorded ½ mile north of the project area.

Field survey completed by ESA staff did not identify any surface evidence of archaeological or cultural resources during the field survey. The project area has been previously disturbed by prior construction and grading activities, and the resulting ground surface is altered from its historic character. While no evidence exists to indicate the presence of archaeological resources within the immediate project area, the project area is located in an area that may have been attractive to prehistoric inhabitants and could support previously unidentified archaeological resources. Therefore, the discovery of archaeological materials during ground-disturbing activities cannot be entirely discounted. In the unlikely event that archaeological materials are unearthed, project construction could result in a potentially significant impact on archaeological resources. Implementation of **Mitigation Measure CUL-1** would ensure that project impacts to archaeological resources would be reduced to less-than-significant levels.

Mitigation Measure

> **Measure CUL-1:** If cultural resources are encountered, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist and a Native American representative. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include

stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the archaeologist and Native American representative determine that the resources may be significant, they shall notify the City. An appropriate treatment plan for the resources shall be developed. The archaeologist shall consult with Native American representatives in determining appropriate treatment for prehistoric or Native American cultural resources.

In considering any suggested mitigation proposed by the archaeologist and Native American representative, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed in other parts of the project area while mitigation for cultural resources is being carried out.

c) **Less than Significant.** The project area is located in Holocene-age (10,000 years Before Present [BP] to Present Day) fan alluvial/sedimentary deposits. No known paleontological resources or unique geologic features exist within the project area or surrounding area. The project area and surrounding area therefore has a very low potential for the unanticipated discovery of fossils.

d) **Less than Significant with Mitigation.** Results of the archival review and site visit discussed under Checklist Item 5a indicate that the project area and its vicinity have a low potential to contain buried cultural materials including human remains. However the possibility of uncovering human remains cannot be entirely discounted. In the unlikely event that human remains are uncovered during ground-disturbing activity, disturbance of human remains could result in a potentially significant impact. Implementation **Mitigation Measure CUL-2** would ensure that potential impacts to human remains would be minimized.

Mitigation Measure

Measure CUL-2: If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the San Joaquin County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC shall then identify the person(s) thought to be the Most Likely Descendent, who shall help determine what course of action should be taken in dealing with the remains.

References

Fredrickson, D. A. 1974. Cultural Diversity In Early Central California: A View from the North Coast Ranges. *Journal of California Archaeology.* 1(1).

Hoover, M. B., H. E. Rensch, E. G. Rensch, W. N. Abeloe. 2002. *Historic Spots in California.* Revised by Douglas E. Kyle. Palo Alto, CA: Stanford University Press.

Moratto, M.J., 1984 *California Archaeology,* Smithsonian Press, San Diego, CA.

Shipley, W. F. 1978. *Native Languages of California.* Pages 80–90 in R. F. Heizer (ed.), Handbook of North American Indians, Volume 8, California. Washington. D. C.: Smithsonian Institution.

U.S. Department of the Interior, 2010. 2010 National Register of Historic Places.

Wallace, W. J. 1978. "Northern Valley Yokuts." Handbook of North American Indians. Volume 8, California. Robert F. Heizer, volume editor. Washington. Smithsonian Institution.

2.6 Geology, Soils, and Seismicity

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
6. GEOLOGY, SOILS, AND SEISMICITY — Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Environmental Setting

The project area is located in central San Joaquin County, in the central portion of the Great Valley geomorphic province of California. This geomorphic province is characterized as a northwestward-trending trough that formed between the Coast Range Mountains to the west and the Sierra Nevada Mountains to the east. The Great Valley is about 50 miles wide and extends for 400 miles through the center of California. The project area is situated along a topographically flat area that includes the historic floodplains of the Calaveras River and other minor waterways located in the vicinity of the project area. Calaveras River and minor creeks on the east side of the county have deposited alluvium derived from mixed rock sources in the Sierra Nevada Foothills in these areas.

The project area is situated in an area considered seismically active. The seismicity of the region is related to activity on the San Andreas fault system that forms the boundary between the North American and Pacific crustal plates, and is expressed as a series of northwest-trending faults

(Jennings, 1994). According to the 1997 Uniform Building Code (UBC), the entire northern Central Valley region, including the project area, is located within seismic zone 3. Although both seismic zones 3 and 4 are susceptible to earthquake ground motion and seismic design criteria for both are required under the UBC, minimum requirements for design in seismic zone 4 are typically more rigorous than those required under seismic zone 3.

While the project area is anticipated to be subject to seismic activity, no Alquist-Priolo Fault Zones are located in the project area or its vicinity. There are no active faults located in the project area. However, regionally active faults include the Concord-Green Valley, Hayward, and Marsh Creek-Greenville faults, and portions of the Calaveras fault zone, are located approximately 30 to 50 miles west of the project area, (Jennings, 1994).

A number of soils within San Joaquin County are considered to have high erosion. Highly erosive soils can damage roads, bridges, buildings, and other structures. Areas that have erosion hazards with moderate to very severe potential are located in the foothills and mountain areas of the County.

Expansive or shrink-swell soils contain significant amounts of clay materials that swell when wet and shrink when dry, which can result in damage to foundations, buildings, infrastructure, and other structures. Soils having high shrink-swell potential are more common on the central and western end of the county, with some soils with moderate shrink-swell-potential also located in valleys in the eastern portion of the County.

Landslide susceptibility is a function of various combinations of factors including rainfall, rock and soil types, slope, aspect, vegetation, seismic conditions, and human activities, such as construction. In San Joaquin County, landslides would likely be limited to foothills and mountain areas where slopes are greater.

Soil liquefaction results from loss of strength during earthquake shaking. The soils most susceptible to liquefaction are clean, uniformly graded, loose, saturated, fine grained soils. Soil layers with high potential for liquefaction include unconsolidated sands and fine-grained material. Foothill and mountain areas have a low potential for liquefaction, except in areas of unconsolidated sediments (generally adjacent to stream channels).

Soil resources in the project area consist of Jacktone Clay, 0 to 2 percent slopes, Jacktone-Urban Land Complex, 0 to 2 percent slopes, Stockton Clay, 0 to 2 percent slopes, Stockton-Urban Land Complex, 0 to 2 percent slopes, and Vignolo Silty Clay Loam, 0 to 2 percent slopes (located along the Calaveras River). Jacktone Clay, the Jacktone-Urban Land complex, Stockton Clay, and the Stockton-Urban Land Complex are similar in composition and are all classified as somewhat poorly drained with very low infiltration capacity, high corrosivity, and a shallow water table. Vignolo Silty Clay Loam is characterized as moderately well drained with very low transmissivity, moderate corrosivity, and shallow to moderate groundwater levels. All soils identified are moderately to highly susceptible to shrink-swell (NRCS, 2012).

Regulatory Setting

Federal Regulations

Federal regulatory agencies include the USEPA, Occupational Safety and Health Administration (OSHA), Nuclear Regulatory Commission (NRC), Department of Transportation (DOT), and National Institutes of Health (NIH). The following represent federal laws and guidelines governing hazardous substances.

- Pollution Prevention Act (42 U.S. Code Section 13101 et seq. / 40 Code of Federal Regulations)
- Clean Water Act (33 U.S. Code Section 1251 et seq. / 40 Code of Federal Regulations)
- Oil Pollution Act (33 U.S. Code Section Sections 2701-2761 / 30, 33, 40, 46, 49 Code of Federal Regulations)
- Clean Air Act (42 U.S. Code Section 7401 et seq. / 40 Code of Federal Regulations)
- Occupational Safety and Health Act (29 U.S. Code Sections 651 et seq. / 29 Code of Federal Regulations)
- Federal Insecticide, Fungicide, and Rodenticide Act 7 U.S. Code Section 136 et seq. / 40 Code of Federal Regulations)
- Comprehensive Environmental Response Compensation and Liability Act (42 U.S. Code Section 9601 et seq. / 29, 40 Code of Federal Regulations)
- Superfund Amendments and Reauthorization Act Title III (42 U.S. Code Section 9601 et seq. / 29, 40 Code of Federal Regulations)
- Resource Conservation and Recovery Act (42 U.S. Code Section 6901 et seq. / 40 Code of Federal Regulations)
- Safe Drinking Water Act (42 U.S. Code Section 300f et seq. / 40 Code of Federal Regulations)
- Toxic Substances Control Act (15 U.S. Code Section 2601 et seq. / 40 Code of Federal Regulations)

At the federal level, the principal agency regulating the generation, transport and disposal of hazardous substances is the United States Environmental Protection Agency (USEPA), under the authority of the Resource Conservation and Recovery Act (RCRA). The USEPA regulates hazardous substance sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). Applicable federal regulations are contained primarily in Titles 29, 40, and 49 of the CFR.

California Building Code

The California Building Code (CBC) is another name for the body of regulations known as the California Code of Regulations (CCR), Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the CBSC, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable.

Published by the International Conference of Building Officials, the Uniform Building Code (UBC) is a widely adopted model building code in the United States. The California Building Code incorporates by reference the UBC with necessary California amendments. Through the CBC, the State provides a minimum standard for building design and construction. The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls and site demolition. It also regulates grading activities, including drainage and erosion control. About one-third of the text within the California Building Code has been tailored for California earthquake conditions. The International Conference of Building Officials also publishes detailed seismic maps, known as "Maps of Known Active Fault Near-Source Zones," for engineering purposes that are prepared by the State Division of Mines and Geology

Discussion

a.i-iv) **Less than Significant.** The project area is not located in an Alquist-Priolo Earthquake Fault Zone, as defined by the California State Department of Conservation, Geological Survey (CGS, formerly the Division of Mines and Geology), and no active or potentially active faults exist on, or in the immediate vicinity of the site, as discussed for the environmental setting section. According to California Department of Conservation earthquake shaking potential maps, the project area is located in an area that is distant from known, active faults, and will experience lower levels of shaking less frequently, with damage likely limited to weaker masonry structures (CDC, 2008). Additionally, the project area, including all facilities, is located in an area of flat topography that is not subject to landslides. The project would involve trenching and excavating to a depth of no more than 5 feet on primarily level terrain and would incorporate the use of trench shoring measures consistent with the C BC and CAL/OSHA requirements for trenching and excavation activities. Proposed grading and facilities installation activities would be required to meet applicable CBC requirements with respect to seismicity. As a result, the potential for slope instability hazards and landslides during construction and operation of the project is not considered significant. Therefore, strong seismic shaking, seismic ground failure, and landslides are not anticipated.

b) **Less than Significant.** The soils within the project area are generally poorly drained, clayey soils that could be subject to erosion, especially associated with construction activities where surficial sediments and existing land cover could be disturbed. Therefore, stormwater related erosion associated with project activities could occur on site. However, stormwater related erosion is discussed in Checklist Items 9.c, d and e, below, For additional information regarding erosion associated with stormwater flows, please refer to these items.

c, d) **Less than Significant with Mitigation.** All soils in the project area are classified as having moderate to high shrink swell potential. Soil shrink-swell has the potential to damage proposed structural foundations, paved roads and streets, and underground utilities including pipelines. Expansion and contraction of soils, depending on the season and amount of surface water infiltration, could exert enough pressure on structures to result in cracking, settlement, and uplift. Differential settlement is a concern in areas where proposed structures

could place loads heavier than the soils could tolerate. Settlement can damage building foundations, affect underground utilities, and cause cracking and settlement in roads and sidewalks and could result in a potentially significant impact. However, compliance with the applicable state building codes as well as the implementation of **Mitigation Measure GEO-1** would ensure that potential impacts associated with soil shrink-swell potential would be less than significant.

Mitigation Measure:

Mitigation Measure GEO-1: The City shall ensure that a soils and geology investigation is completed prior to the construction of improvements on any undeveloped soils to determine their shrink swell potential. The study shall investigate the extent to which expansive soils are located on site, and provide recommendations regarding the specific construction or installation practices needed to offset the anticipated effects of expansive soils, to the extent warranted to protect the proposed facilities. The City shall ensure that the recommendations of the investigation are incorporated into project design prior to initiation of construction activities.

e) **No Impact.** The project does not include the installation of any septic systems or alternative wastewater disposal systems.

References

California Department of Conservation (CDC), 2008. Earthquake Shaking Potential for California. Available at: http://www.consrv.ca.gov/cgs/information/publications/ms/Documents/MS48_revised.pdf. Accessed May 5, 2012.

Jennings, C. W. 1994. Fault Activity Map of California and Adjacent Areas. California Division of Mines and Geologic Data Map No. 6, 1:750,000.

Natural Resources Conservation Service (NRCS). 2012. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx Accessed May 5, 2012.

2.7 Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
7. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☒	☐	☐

Discussion

a) **Less than Significant.** Greenhouse gas (GHG) impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008). Four different types of analyses are used to determine whether the project could conflict with the State goals for reducing GHG emissions. The analyses are as follows:

A. Any potential conflicts with the ARB's recommended actions in California's AB 32 *Climate Change Scoping Plan* (ARB, 2011).

B. The relative size of the project. The project's GHG emissions shall be compared to the size of major facilities that are required to report GHG emissions (25,000 metric tons/year of CO_2-equivalent (CO_2e))[2] to the State. The 25,000 metric ton annual limit identifies the large stationary point sources in California that make up approximately 94 percent of the stationary emissions. If the Project's total emissions are below this limit, its total emissions are equivalent in size to the smaller projects in California that as a group only make up 6 percent of all stationary emissions. It is assumed that the activities of these smaller projects generally would not conflict with State's ability to reach AB 32 overall goals. In reaching its goals the ARB shall focus upon the largest emitters of GHG emissions.

C. The basic energy efficiency parameters of a project to determine whether its design is inherently energy efficient.

D. Any potential conflicts with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

In regards to GHG analysis Criterion A, pursuant to AB 32, the ARB adopted a Scoping Plan in December 2008, which was re-approved by ARB on August 24, 2011 (ARB, 2011), outlining measures to meet the 2020 GHG reduction limits. The Scoping Plan estimates a reduction of 174 million metric tons of CO_2e (about 191 million U.S. tons) from the transportation, energy, agriculture, forestry, and other sources, with measures

[2] The State of California has not provided guidance as to quantitative significance thresholds for assessing the impact of greenhouse gas emissions on climate change and global warming concerns. Nothing in the CEQA Guidelines directly addresses this issue.

summarized in **Table 2.7-1** below. Notably, the project does not pose any apparent conflict with the most recent list of the ARB early action strategies.

TABLE 2.7-1
LIST OF RECOMMENDED ACTIONS BY SECTOR

Measure No.	Measure Description	GHG Reductions (Annual Million Metric Tons CO_2e)
Transportation		
T-1	Pavley I and II – Light Duty Vehicle Greenhouse Gas Standards	31.7
T-2	Low Carbon Fuel Standard (Discrete Early Action)	15
T-3[1]	Regional Transportation-Related Greenhouse Gas Targets	5
T-4	Vehicle Efficiency Measures	4.5
T-5	Ship Electrification at Ports (Discrete Early Action)	0.2
T-6	Goods Movement Efficiency Measures. • Ship Electrification at Ports • System-Wide Efficiency Improvements	3.5
T-7	Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)	0.93
T-8	Medium- and Heavy-Duty Vehicle Hybridization	0.5
T-9	High Speed Rail	1
Electricity and Natural Gas		
E-1	Energy Efficiency (32,000 GWh of Reduced Demand) • Increased Utility Energy Efficiency Programs • More Stringent Building & Appliance Standards Additional Efficiency and Conservation Programs	15.2
E-2	Increase Combined Heat and Power Use by 30,000 GWh (Net reductions include avoided transmission line loss)	6.7
E-3	Renewables Portfolio Standard (33% by 2020)	21.3
E-4	Million Solar Roofs (including California Solar Initiative, New Solar Homes Partnership and solar programs of publicly owned utilities) • Target of 3000 MW Total Installation by 2020	2.1
CR-1	Energy Efficiency (800 Million Therms Reduced Consumptions) • Utility Energy Efficiency Programs • Building and Appliance Standards • Additional Efficiency and Conservation Programs	4.3
CR-2	Solar Water Heating (AB 1470 goal)	0.1
Green Buildings		
GB-1	Green Buildings	26
Water		
W-1	Water Use Efficiency	1.4†
W-2	Water Recycling	0.3†
W-3	Water System Energy Efficiency	2.0†
W-4	Reuse Urban Runoff	0.2†
W-5	Increase Renewable Energy Production	0.9†
W-6	Public Goods Charge (Water)	TBD†

TABLE 2.7-1
LIST OF RECOMMENDED ACTIONS BY SECTOR

Measure No.	Measure Description	GHG Reductions (Annual Million Metric Tons CO_2e)
Industry		
I-1	Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	TBD
I-2	Oil and Gas Extraction GHG Emission Reduction	0.2
I-3	GHG Leak Reduction from Oil and Gas Transmission	0.9
I-4	Refinery Flare Recovery Process Improvements	0.3
I-5	Removal of Methane Exemption from Existing Refinery Regulations	0.01
Recycling and Waste Management		
RW-1	Landfill Methane Control (Discrete Early Action)	1
RW-2	Additional Reductions in Landfill Methane • Increase the Efficiency of Landfill Methane Capture	TBD†
RW-3	High Recycling/Zero Waste • Commercial Recycling • Increase Production and Markets for Compost • Anaerobic Digestion • Extended Producer Responsibility • Environmentally Preferable Purchasing	9†
Forests		
F-1	Sustainable Forest Target	5
High Global Warming Potential (GWP) Gases		
H-1	Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Services (Discrete Early Action)	0.26
H-2	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)	0.3
H-3	Reduction of Perfuorocarbons in Semiconductor Manufacturing (Discrete Early Action)	0.15
H-4	Limit High GWP Use in Consumer Products Discrete Early Action (Adopted June 2008)	0.25
H-5	High GWP Reductions from Mobile Sources • Low GWP Refrigerants for New Motor Vehicle Air Conditioning Systems • Air Conditioner Refrigerant Leak Test During Vehicle Smog Check • Refrigerant Recovery from Decommissioned Refrigerated Shipping Containers • Enforcement of Federal Ban on Refrigerant Release during Servicing or Dismantling of Motor Vehicle Air Conditioning Systems	3.3
H-6	High GWP Reductions from Stationary Sources • High GWP Stationary Equipment Refrigerant Management Program: - Refrigerant Tracking/Reporting/Repair Deposit Program - Specifications for Commercial and Industrial Refrigeration Systems • Foam Recovery and Destruction Program • SF Leak Reduction and Recycling in Electrical Applications • Alternative Suppressants in Fire Protection Systems • Residential Refrigeration Early Retirement Program	10.9
H-7	Mitigation Fee on High GWP Gases	5
Agriculture		
A-1	Methane Capture at Large Dairies	1.0†

1. This is not the SB 375 regional target. ARB will establish regional targets for each Metropolitan Planning Organization (MPO) region following the input of the regional targets advisory committee and a consultation process with MPO's and other stakeholders per SB 375.

† GHG emission reduction estimates are not included in calculating the total reductions needed to meet the 2020 target.

With regard to GHG analysis Criterion B (relative size of the project), GHG emissions associated with project construction were modeled with URBEMIS 2007 and operational indirect electricity GHG emissions were quantified using factors from the *California Climate Action Registry General Reporting Protocol* (California Climate Action Registry, 2009). Additional calculation detail is provided in **Appendix A**. Project GHG emissions during construction for a worse-case year would be approximately 430 metric tons CO_2e. In regards to operations, the increase in GHG emissions would be from GHG emissions associated with diesel combustion at well sites where the proposed generators would be installed. Diesel combustion would occur on an intermittent and infrequent basis, in order to provide on site power when grid based power supplies are unavailable due to emergency outage. Diesel combustion on site would only occur during outage periods and intermittently during monthly testing, and would be discontinued upon restoration of grid based power. Electricity requirements associated with the project during operation would likewise be minimal for proposed components and facilities, and would be limited to on site monitoring and dosing equipment. Therefore, electricity use and intermittent emergency-period diesel combustion would result in the indirect or direct emission of a minor amount of GHGs during project operations – on the order of less than approximately 50 metric tons/year of CO_2e. This is well under the 25,000 metric tons/year CO_2e threshold used to classify major emitters.

With respect to GHG analysis Criterion C (inherent energy efficiency of the project), the project would include pipelines that are sized to minimize friction loss and would develop all new facilities that would make use of current, high energy efficiency equipment to minimize energy use.

With regard to GHG analysis Criterion D (potential conflict with applicable plans, policies, or regulations adopted to reduce GHGs), this criterion is evaluated separately under checklist item 7.b., below.

Based on the analysis of Criteria A, B, C presented above, the project would not result in a cumulatively considerable increase in GHG emissions such that the project would impair the State's ability to implement AB 32.

b) **Less than Significant with Mitigation.** With regard to potential conflict with applicable plans, policies, or regulations adopted to reduce GHGs, the City has completed a Draft Climate Action Plan, which is currently under review. The draft plan stipulates a reduction in GHG emissions equivalent to 10 percent below 2005 levels, based on a series of measures designed to reduce or minimize GHG emissions. While the Climate Action Plan has not yet been approved, should plan approval occur prior to implementation of the project, implementation of **Mitigation Measure GHG-1** would be required, in order to ensure consistency with the Stockton Climate Action Plan.

Mitigation Measure

Measure GHG-1: In the event that the Stockton Climate Action Plan is approved by the City prior to implementation of the project, project facilities, as well as project construction and operations procedures shall adhere to the requirements of the Stockton Climate Action Plan, including implementation of GHG emissions reduction measures designed to reduce energy consumption and GHG emissions associated with project construction and operations.

References

California Air Pollution Control Officers Association (CAPCOA), 2008. *CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*.

California Air Resources Board (ARB). *Climate Change Scoping Plan*. Adopted December 11, 2008. Re- approved by the ARB on August 24, 2011.

California Climate Action Registry (CCAR), 2009. *California Climate Action Registry General Reporting Protocol*, January 2009.

2.8 Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
8. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

Environmental Setting

The term “hazardous materials” refers to both hazardous substances and hazardous wastes. Under federal and state law, any material, including waste, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases). The California Health and Safety Code, Chapter 6.95, Section 25501(o) defines the term “hazardous material” as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

In some cases, past industrial or commercial activities on a site could have resulted in spills or leaks of hazardous materials to the ground, resulting in soil and/or groundwater contamination. Hazardous materials may also be present in building materials and released during building

demolition activities. If improperly handled, hazardous materials and wastes can cause public health hazards when released to the soil, groundwater, or air. The four basic exposure pathways through which an individual can be exposed to a chemical agent are inhalation, ingestion, bodily contact, and injection. Exposure can come as a result of an accidental release during transportation, storage, or handling of hazardous materials. Disturbance of subsurface soil during construction can also lead to exposure of workers or the public if soils have been contaminated by hazardous materials from previous spills or leaks.

Information about hazardous materials sites in the project area was collected by conducting a review of the California Environmental Protection Agency's (Cal EPA) Cortese List Data Resources (Cortese List). The Cortese list includes the following data resources that provide information regarding the facilities or sites identified as meeting the Cortese list requirements: the list of Hazardous Waste and Substances sites from Department of Toxic Substances Control (DTSC) EnviroStor database; the list of Leaking Underground Storage Tank (LUST) sites from GeoTracker database; the list of solid waste disposal sites identified by Water Board; the list of active Cease and Desist Orders and Cleanup and Abatement Orders from Water Board; and the list of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code identified by DTSC. The Cortese List is a reporting document used by the state, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. The Cortese List is updated at least annually, in compliance with California regulations (California Code Section 65964.6(a)(4)). The Cortese List includes federal superfund sites, state response sites, non-operating hazardous waste sites, voluntary cleanup sites, and school cleanup sites.

A review of the Cortese List database indicated that there are no federal superfund, state response, or other Cortese-listed hazardous materials sites within 0.5 mi of the project area (DTSC, 2012). A review of additional hazardous materials sites, including leaking underground storage tanks (LUST), land disposal sites, and other hazardous materials cleanup sites was completed using the State Water Resources Control Board's Geotracker database (SWRCB, 2012). This review indicated that there is one chemical cleanup site located along Lower Sacramento Road near its intersection with Royal Oaks Drive, one land disposal site located along West Ln near its intersection with East Sandalwood Dr, and five LUSTs located along West Ln near its intersection with March Ln, along Hammer Ln near its intersection with West Ln (two sites), its intersection with SR-99, and its intersection with North El Dorado St. Several additional closed LUST sites were also identified within 0.5 mi of the project site. However, none of the identified sites are located within the project area including areas where construction would occur.

Discussion

a) **Less than Significant.** Operation of the project would involve the routine transportation, use, and storage of ammonia at each of the facility sites, including well sites and the NSPAF. Ammonia is listed as a toxic air contaminant (TAC) under the CARB's California Air Toxics Program. Ammonia is considered to be potentially harmful in the event of accidental release into the environment, and potentially toxic to humans. As a result, storage and use

of ammonia at the proposed well sites and the NSPAF site, which are located in urban areas that include residential areas, would require completion of a human health risk assessment (HRA), and implementation of a hazardous materials plan would be required, under state law. Completion of a HRA would involve identification of potential human health effects associated with the transport, storage, and use of ammonia on site, completion of an exposure potential assessment and risk characterization, and implementation of a hazardous materials plan. The hazardous materials plan, which would be required to be completed prior to the initiation of storage and use of ammonia on site, would identify measures required in order to minimize potential release of ammonia on site, such that human health could be affected. Therefore, compliance with these state requirements with respect to ammonia use and handling on site would minimize potential for public exposure to ammonia.

Construction of the project could temporarily increase the transport of materials generally regarded as hazardous materials that are used in support of construction activities. It is anticipated that limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluids, and other similarly related materials would be brought into the project area, used, and stored during the construction period.

However, numerous laws and regulations govern the transport, use, storage, handling and disposal of hazardous materials to reduce the potential hazards associated with these activities. Cal/OSHA is responsible for developing and enforcing workplace safety standards, including the handling and use of hazardous materials. Transportation of hazardous materials is regulated by the DOT and Caltrans. Together, federal and State agencies determine driver-training requirements, load labeling procedures, and container specifications designed to minimize the risk of accidental release.

Additionally, the federal CWA prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. The State Water Board is the permitting authority in California and has adopted a Statewide General Permit for Stormwater Discharges Associated with Construction Activity (refer to checklist item 9.a.) that would be applicable to the project. The permit requires, among other actions, implementation of mandatory BMPs and control measures including, implementation of pollution/sediment/spill control plans, training, sampling and monitoring for non-visible pollutants. Because numerous laws and regulations govern the transport, use, storage, handling and disposal of hazardous materials to reduce the potential hazards associated with these activities this impact would be minimized.

b) **Less than Significant with Mitigation.** Project construction would involve trenching along the sewer line tie-in pipelines, and would also involve minor grading and limited additional earth moving activities. These activities could result in the disturbance of unknown subsurface contamination. If improperly managed, the disturbance of unknown subsurface contaminants could potentially result in a potentially hazardous condition with respect to construction workers and the public. This impact is considered potentially

significant. Implementation of **Mitigation Measure HM-1** would reduce these potential impacts to less than significant levels:

Mitigation Measure

> **Measure HM-1:** If unidentified or suspected contaminated soil or groundwater is encountered during construction activities, the City and its contractors shall ensure that work is halted in the area of potential exposure, and the type and extent of contamination shall be identified by a Registered Environmental Assessor (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. The City shall ensure that the recommendations of the REA's report are implemented.

c) **Less than Significant with Mitigation.** Schools located within one quarter mile of the proposed facilities include George W Bush Elementary School, River Oaks Charter School, and Stockton Christian School. Construction of the project could temporarily increase the transport of materials generally regarded as hazardous materials that are used in construction activities as well as temporarily increase the emissions of criteria pollutants, as described in Air Quality discussion above, within ¼ mile of an existing school. However, because numerous laws and regulations govern the transport, use, storage, handling and disposal of hazardous materials impacts of the construction and use of hazardous materials associated with project facilities within on quarter mile of a school would be minimized and/or avoided. Additionally, implementation of **Mitigation Measure AIR-1**, would reduce the intensity of potential impacts of hazardous emissions associated with the routine transport, use, or disposal of hazardous materials.

d) **No Impact.** As discussed above under environmental setting, the project is not located on a site which is known to be included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and therefore would not create a significant hazard to the public or the environment.

e, f) **No Impact.** There are no public or private airports or airstrips located within the project area or its close proximity, and no portion of the project area is located within an airport land use plan area or within two miles of an airport. Therefore, no impact would occur.

g) **Less than Significant with Mitigation.** The project would not permanently impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The project would result in construction along roadways that may be utilized by emergency vehicles. However, given the urban nature of the area in which the proposed pipeline would be installed, and relatively low traffic volumes, alternative routes are anticipated to be readily available. Additionally, interference with traffic flow would be minimized via the implementation of **Mitigation Measure TRAFFIC-2**, which

would require the development of a traffic control plan, to minimize interference from construction activities.

h) **Less than Significant Impact.** Construction activities would be required to comply with the California fire code to reduce the risk of potential fire hazards. In addition, construction of the proposed facilities would generally be located in developed urban areas where the risk of wildland fire is considered to be minimal. However, construction at the NSPAF site and well sites located near non-urban uses would include the use of heavy equipment and other activities within areas that could be subject to wildfires. This impact is considered potentially significant, and implementation of **Mitigation Measure HM-2** would be required in order to ensure that potential impacts would be minimized.

Mitigation Measure

Measure HM-2: During construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws.

References

California Department of Toxic Substances Control (DTSC), 2012. DTSC's Hazardous Waste and Substances Site List - Site Cleanup (Cortese List). Available at: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm Accessed May 1, 2012.

State Water Resources Control Board (SWRCB), 2012. Geotracker Database. Available at: https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=stockton%2C+ca Accessed May 5, 2012.

2.9 Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
9. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☒	☐	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☒	☐	☐
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Environmental Setting

Surface Water Hydrology, Drainage, and Flooding

The project area is located in the northeastern portion of the City. As shown in Figure 1-1, proposed facilities are scattered throughout this region of the City, in proximity to various waterways and drainages that cross through the City. Waterways within the project area generally originate in the Sierra Nevada and associated foothills to the east of the project area. These regions drain along natural and modified waterways along the floor of the San Joaquin valley, eventually discharging

into the Sacramento-San Joaquin Delta (the Delta), which reaches into western portions of the City. Key waterways that are located in the vicinity of the project area include, from north to south, Bear Creek, South Bear Creek, Mosher Slough, Five Mile Creek, and the Calaveras River, as shown on Figure 1-1. Drainage within the project area, including from project facilities, is provided by City-operated storm drains, which collect runoff from the project area and other nearby areas, eventually channeling runoff into these and other minor drainages and waterways, which eventually discharge into the Delta.

The Federal Emergency Management Agency (FEMA) delineates potential areas susceptible to flooding, including areas that are expected to experience flooding during a 100 year event (1.0 percent chance of annual occurrence of flooding) and a 500 year event (0.2 percent chance of annual occurrence of flooding). Potential for flooding within the vicinity of the project area is mediated by a series of levees located along area waterways. As shown in **Figure 2.9-1**, 100-year flood zones in the vicinity of the project area are limited to existing leveed waterways and associated flood control structures. No portion of the project area is located within a 100-year flood zone. All portions of the project area are located within a 500-year flood zone, or within areas protected from flooding by levees.

Water Quality

Water quality within the project area is generally affected by upstream flows including stormwater and snowmelt runoff, agricultural runoff, and stormwater runoff from urban areas within the City. Water within study area waterways thereby varies based on the primary sources of water during a given period in time.

The State Water Resources Control Board (SWRCB), in coordination with the US Environmental Protection Agency (EPA), maintains a list of river and stream stretches that are included on its Clean Water Act Section 303(d) list of water quality impaired segments. The river segments listed in **Table 2.9-1** are listed as impaired for water quality pollutants as shown. The Central Valley Regional Water Quality Control Board (CVRWQCB) delineates beneficial uses within its jurisdiction, which includes the project area and vicinity. Beneficial uses have been delineated within the CVRWQCB's Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan; CVRWQCB, 2011). Beneficial uses have been delineated for the Calaveras River and the Sacramento-San Joaquin Delta (**Table 2.9-2**), but have not been delineated for other study area waterways.

Figure 2.9-1 FEMA Floodplains

TABLE 2.9-1
CLEAN WATER ACT SECTION 303(D) LISTINGS FOR THE LOWER STANISLAUS RIVER

Pollutant	Source	TMDL Schedule
Bear Creek		
Copper	Source Unknown	Est. TMDL Completion: 2021
Diazinon	Agriculture	Est. TMDL Completion: 2021
E. Coli	Source Unknown	Est. TMDL Completion: 2021
Low Dissolved Oxygen	Source Unknown	Est. TMDL Completion: 2021
Mosher Slough		
Pathogens	Urban Runoff/Storm Sewers	Est. TMDL Completion: 2008
Calaveras River		
Chlorpyrifos	Agriculture	TMDL Approval: 2007
Diazinon	Agriculture	Est. TMDL Completion: 2021
Mercury	Resource Extraction	Est. TMDL Completion: 2021
Low Dissolved Oxygen	Urban Runoff/Storm Sewers	Est. TMDL Completion: 2012
Pathogens	Urban Runoff/Storm Sewers	TMDL Approval: 2008
Delta Waterways (Eastern Portion		
Chlorpyrifos	Agriculture, Urban Runoff/Storm Sewers	TMDL Approval: 2007
DDT	Agriculture	Est. TMDL Completion: 2011
Diazinon	Agriculture, Urban Runoff/Storm Sewers	TMDL Approval: 2007
Group A Pesticides	Agriculture	Est. TMDL Completion: 2011
Invasive Species	Source Unknown	Est. TMDL Completion: 2019
Mercury	Resource Extraction	Est. TMDL Completion: 2009
Unknown Toxicity	Source Unknown	Est. TMDL Completion: 2019

SOURCE: SWRCB, 2012

TABLE 2.9-2
BENEFICIAL USES OF WATERWAYS IN THE VICINITY OF THE PROJECT

River/River Reach	Existing Beneficial Uses	Potential Beneficial Uses
Calaveras River, New Hogan Reservoir to Delta	MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD	PROC, IND
Sacramento-San Joaquin Delta	MUN, AGR, PROC, IND, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD, NAV	None

KEY: AGR = Agriculture; COLD = Cold Freshwater Habitat; IND = Industrial Service Supply; MIGR = Migration (fisheries); MUN = Municipal and Domestic Supply; NAV = Navigation; PROC = Industrial Process Water; REC-1 = Contact Recreation; REC-2 = Noncontact Recreation; SPWN = Spawning; WARM = Warm Freshwater Habitat; WILD = Wildlife Habitat.

SOURCE: CVRWQCB, 2011

Regulatory Setting

NPDES General Permit for Discharges of Stormwater Associated with Construction Activities

Construction activities disturbing 1-acre or more of land are subject to the permitting requirements of the NPDES General Construction Activity Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction NPDES Permit). A project applicant must submit a Notice of Intent to the CVRWQCB to be covered by the General Construction Permit prior to the beginning of construction.

On September 2, 2009, the SWRCB adopted a new General Construction Permit for Discharges of Storm Water Associated with Construction Activities, effective on July 1, 2010, replacing the existing permit. The new permit requires a risk-based permitting approach, dependent upon the likely level of risk imparted by a project. The new permit also contains several additional compliance items, including (1) additional mandatory Best Management Practices (BMPs) to reduce erosion and sedimentation, which may include incorporation of vegetated swales, setbacks and buffers, rooftop and impervious surface disconnection, bioretention cells, rain gardens, rain cisterns, implementation of pollution/sediment/spill control plans, training, and other structural and non-structural actions; (2) sampling and monitoring for non-visible pollutants; (3) effluent monitoring and annual compliance reports; (4) development and adherence to a Rain Event Action Plan; (5) requirements for permanent BMPs to match predevelopment hydrology in the post-construction period (for projects in areas with no approved Hydrograph Modification Management Plan); (6) numeric action levels and effluent limits for pH and turbidity; (7) monitoring of soil characteristics on site; and (8) mandatory training under a specific curriculum. Under the revised permit, BMPs are incorporated into the action and monitoring requirements for each project area, including implementation of a Stormwater Pollution Prevention Plan (SWPPP). Under the updated permit, additional and more stringent monitoring, reporting, and training requirements for management of stormwater pollutants are implemented.

San Joaquin Area Flood Control Agency

The San Joaquin Area Flood Control Agency (SJAFCA) manages and maintains flood control infrastructure within Stockton and outlying areas, including the project area. SJAFCA's mission is to study, plan and implement flood protection projects, reducing the risk to people, structures and the local economy. SJAFCA coordinates and partners with a variety of local, state and federal agencies in support of flood control protection within its service area. SJAFCA also maintains oversight of levees within its service area, including those located within and adjacent to the project area.

Discussion

a) **Less than Significant.** Construction of the project would include the use of heavy machinery, including but not limited to transport trucks, bulldozers, trenchers, excavators, and other construction equipment. Use of these and similar types of heavy machinery would cause disturbance to surface sediments, loosen soils, remove existing

vegetation, and potentially result in increased erosion on site. During large storm events, eroded soils could become entrained in stormwater, and could cause sedimentation on site or downstream, including along downstream drainage facilities and natural waterways. During storm events, the use of heavy equipment during construction could also result in the accidental release of fuels, oils, lubricants, antifreeze, and other construction-related fluids into the environment.

During construction activities, these pollutants could become entrained in stormwater flows, and result in degradation of receiving water quality along the Calaveras River, Mosher Slough, Bear Creek, and other waterways, including the Delta. These potential increases in water quality pollution could result in an increase in pollutant levels in receiving waters, such that applicable water quality standards could be exceeded. However, the project would be required to acquire coverage under the General Construction NPDES Permit. As discussed previously, the conditions of that permit would include implementation of a SWPPP, as well as various additional measures intended to minimize potential construction period water quality degradation to the maximum extent practicable. Therefore, with adherence to permitting conditions of the General Construction NPDES Permit, construction related water quality degradation would be minimized.

b) **Less than Significant.** Implementation of the project would involve the retrofitting of existing facilities with ammonia dosing equipment, as well as installation of new backup generators and the NSPAF. These activities would require limited water for construction, primarily for dust suppression on site where limited grading or earth moving activities would occur. Construction water could include groundwater use, however, the volume of water that would be required for construction would be minimal.

Construction of the project would involve the installation of new impervious surfaces at the NSPAF, or at well sites where chloramine dosing facilities or proposed generators would require the installation of new concrete pads and/or housings. Total new impervious surface area would be less than one acre, and would be distributed across the various facilities considered, within the project area. While some portions of the project area may support groundwater recharge under existing conditions, the minimal extent of new impervious surfaces proposed for the project is not expected to alter groundwater recharge rates, such that groundwater levels would be noticeably affected.

During project operations, the project would support treatment of groundwater, but would not result in any change or alteration in the rate at which groundwater is pumped from existing wells, in comparison to existing conditions. As such, project operations would not result in a net change in groundwater pumping.

c,d) Implementation of the project would involve limited construction activities including limited on site grading, trenching, and installation of facilities and pipes. Construction activities at the well sites would be limited to installation of ammonia dosing facilities, including new prefabricated buildings at well sites 19, 21, 25, 26, and 27, and new diesel generators at well sites 28-32 and 3-R. Well site construction would also involve

trenching and installation of 4-inch sewer connection pipelines, however the installation of pipelines is not anticipated to require grading or earthmoving. Well site 10-R would not require any grading on site, because the proposed ammonia addition system would be installed within the existing facility. Minimal on site grading would be required at all well sites except for 10-R, in order to support installation of the proposed facilities.

At the NSPAF site, construction would involve limited grading activity on site in support of the installation of the proposed on site structure and ammonia addition equipment. Construction activities would also involve excavations in support of the proposed pipeline alignments, which would connect the proposed facility to existing pipelines, with the extent of excavation terminating at the crest of the levee along the north side of the Calaveras River.

For sites where ground disturbance is anticipated (i.e., the NSPAF facility and all well sites except well 10-R), grading and other construction activities could result in altered drainage patterns on site. Unless carefully managed, these changes could cause unintended ponding or pooling on site, or could contribute to increased levels of erosion or sedimentation during project operations. This impact is considered potentially significant. Therefore, implementation of **Mitigation Measure HYD-1** would be required. While the project would result in a minimal increase in impervious surfaces, the extent of this increase would be limited to a small portion of the NSPAF site and each well site (except 10-R). This increase in impervious surface coverage is not expected to noticeably increase stormwater flows from the project area. For additional discussion of impervious surfaces, please refer to checklist item 9.e.

Mitigation Measure

> **Mitigation Measure HYD-1:** For the NSPAF site and all well sites where the ground surface would be disturbed (i.e., grading, excavation, etc.), the City shall ensure that a comprehensive drainage plan is completed, specific to each site. The drainage plan shall consider site and anticipated runoff characteristics, and shall ensure that stormwater runoff is conveyed into existing storm drain facilities to avoid/alleviate potential ponding on site. Additionally, the drainage plan shall ensure that erosion control measures are implemented on site so as to ensure that all surfaces having exposed soil would be covered with vegetation, crushed rock, or other coverings that would minimize surficial erosion.

e) **Less than Significant**. Implementation of the project would result in the construction of limited new facilities within the project area. The project would result in the installation of new impervious surfaces at the NSPAF (i.e., the proposed NSPAF building) and at all well sites except for well 10-R. However, as shown in Section 1.0, Project Description, the extent of the proposed impervious surfaces would be limited on site, to less than 200 square feet at each relevant well site, and approximately 600 square feet at the NSPAF site. As discussed for checklist item 6, surface sediments in the project area generally have low permeability. Thus, the proposed limited increases in impervious surface coverage on site

would not substantially reduce stormwater infiltration rates, would be limited in extent, and therefore are not anticipated to noticeably increase the rate of stormwater runoff on site.

f) **Less than Significant.** Project implementation would involve the addition of water softening at each of the well sites. Water softening involves the use of sodium salts in order to regenerate ion exchange resins that are used in the water softening process. Under project operations, brine from the water softening process would be flushed from the proposed ammonia dosing facilities. Assuming that the proposed ammonia dosing facilities would be operated at full capacity (which is likely to be an overestimate), approximately 80 gallons per day (gpd) of brine would be generated at each well site, and discharged into the sanitary sewer system. This amounts to a maximum volume increase of 960 gpd (0.00096 mgd) of brine discharged to the sewer system per day. The existing wastewater processing rate for the Stockton Regional Wastewater Control Facility (which would provide wastewater treatment for the project area) is approximately 32 mgd. Therefore, the proposed discharge of brine to the sewer system is not anticipated to noticeably affect the quality of influent or effluent wastewater, required treatment processes, or permit compliance at the Stockton Regional Wastewater Control Facility.

g) **No Impact.** Implementation of the project would involve the installation of chloramine dosing facilities and associated appurtenances within the project area. The project would not involve construction or habitation of any new housing or other residential structures, and no portion of the project would be located within a 100-year flood zone. Therefore, no impact would occur.

h) **No Impact.** The project would not involve the construction of aboveground structures within a 100-year flood zone. Therefore, no impact would occur.

i) **Less than Significant with Mitigation.** Implementation of the project would not involve any activity that would disturb or alter an existing dam. However, the project would involve installation of pipeline connections near an existing levee, at the NSPAF site. The affected levee is located along the northern side of the Calaveras River, and provides flood control protection to adjacent areas, including residences. Installation of these facilities are not anticipated to involve disturbance to the levee, during project construction.

j) **No Impact.** The project area is not located adjacent to or in close proximity to a large water body that could be subject to seiche. Similarly, the project is not located adjacent to or in close proximity to the ocean or another water body that would be susceptible to tsunami. With respect to mudflows, these are typically associated with areas of high relief topography where loose, erodible surficial sediments are present, especially in areas where vegetation is or could be denuded. Additionally, mudflows may also occur as a result of volcanism. These conditions are not present on site or in proximity to the project area. Therefore, no impact is anticipated.

References

Central Valley Regional Water Quality Control Board, 2011. Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins. Fourth Edition (1998). Last revised October 20, 2011. Available at: http://www.waterboards.ca.gov/rwqcb5/water_issues/basin_plans/sacsjr.pdf Accessed May 20, 2012.

State Water Resources Control Board (SWRCB), 2012. 2010 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report) – Statewide. Available at: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml Accessed May 18, 2012.

2.10 Land Use and Land Use Planning

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
10.	**LAND USE AND LAND USE PLANNING — Would the project:**				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Environmental Setting

The project is located within the City. Land uses adjacent to the project area consist of primarily residential, but also commercial, light industrial, and public and semi-public uses including parks and municipal facilities. Zoning at and in the immediate vicinity of each of the well sites and the NSPAF site are provided in the following table.

TABLE 2.10-1
ZONING CLASSIFICATIONS FOR EXISTING AND PROPOSED FACILITIES

Facility	Zoning
Well 19	Residential, Low Density (RL)
Well 21	Residential, Low Density (RL)
Well 25	Public Facilities (PF)
Well 26	Commercial Auto District (CA)
Well 27	Residential, Low Density (RL)
Well 28	Residential, Low Density (RL)
Well 29	Residential, Low Density (RL)
Well 30	Commercial, General ((CG))
Well 31	Residential, Low Density (RL)
Well 32	Residential, Low Density (RL)
Well 3-R	Industrial, General (IG)
Well 10-R	Residential, Low Density (RL)
NSPAF	Residential, Low Density (RL)

SOURCE: Stockton, 2011.

Stockton General Plan

The City of Stockton General Plan provides a long term guide for orderly growth and development of the City. It also forms the basis for zoning, subdivision regulation, and other planning decisions on the location, intensity, and design of public facilities and land use.

Discussion

a) **No Impact.** The project would not physically divide an established community. The project is located in the City of Stockton. All proposed facilities would be located at the site of existing City-owned facilities, including groundwater wells and stormwater management infrastructure. Proposed facilities and pipelines would be limited in extent. All proposed facilities would be located on existing facility sites that are currently in use. Select pipelines would cross onto neighboring uses, but these would be limited in size (three inch diameter, installed to a depth of less than 5 feet), and would be buried. Therefore the project would not result in a disruption, physical division, or isolation of existing residential or open space areas.

b) **No Impact.** Installation of the proposed chloramine dosing facilities, backup generators, pipelines, and associated improvements would include the installation of facilities within the footprint of existing City operated infrastructure. These facilities would be minimal in extent and would not alter require re-designation of planned uses. Limited pipelines would also be installed on site, however, these would be buried following construction, and would not permanently alter existing uses, or otherwise result in changes that could conflict with applicable planning documents. Therefore, the project is considered to be consistent with the City and General Plan, and the project would not conflict with applicable land use plans, or other requirements of entities having jurisdiction over the project area.

c) **No Impact.** For a discussion of potential for conflict with an applicable Habitat Conservation Plan or other conservation plan, please refer to Checklist Item 4.f, under Biological Resources.

References

City of Stockton, 2011. Zoning Map Series. Available at: http://www.stocktongov.com/services/gis/zoning.html Accessed May 5, 2012.

2.11 Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
11. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Environmental Setting

A review of current Surface Mining and Reclamation Act (SMARA) maps and documentation promulgated by the California Geological Survey (CGS, 2001; 2006) indicated that no portion of the project area is located within or adjacent to an aggregate production area, and that no portion of the project area is located within a Mineral Recovery Zone, as defined by the State Mining and Geology Board.

Discussion

a,b) **No Impact.** Implementation of the project would not result in the loss of availability of a known mineral resource and would not result in the loss of availability of a locally-important mineral resource recovery site.

References

California Geological Survey (CGS), 2001. Publications of the Small Mineral Land Classification Project Dealing with Mineral Resources in California. May 14, 2001. Available at: http://www.conservation.ca.gov/cgs/minerals/mlc/Pages/Index.aspx Accessed May 11, 2012.

California Geological Survey (CGS), 2006. Aggregate Availability in California. December 2006. Available at: http://www.conservation.ca.gov/cgs/minerals/mlc/Pages/Index.aspx Accessed May 11, 2012.

2.12 Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
12. NOISE — Would the project:				
a) Result in Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☐
b) Result in Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) Result in A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) Result in A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☐
e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☒
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental Setting

Sound is mechanical energy transmitted by pressure waves through a medium such as air, while noise is defined as unwanted sound. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hertz[3] (Hz) and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).[4]

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

3 Hertz is a unit of frequency equivalent to one cycle per second

4 All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- In carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- outside of the laboratory, a 3-dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is non-linear, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Stationary "point" sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 dBA to 7.5 dBA per doubling of distance from the source, depending upon environmental conditions (i.e., atmospheric conditions and noise barriers, either vegetative or manufactured, etc.). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles (a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dBA per doubling distance from the source (also dependent upon environmental conditions) (Caltrans, 1998). Noise from large construction sites would have characteristics of both "point" and "line" sources, so attenuation would generally range between 4.5 and 7.5 dBA per doubling of distance.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the

squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration (FTA, 1995). Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

Existing Ambient Noise Environment

The primary contributors to the project area's noise environment include vehicle traffic on adjacent roadways; sounds emanating from residences, including voices, noises from household appliances, and radio and television broadcasts; and naturally occurring sounds such as wind and wind-generated rustling. Generally, intermittent short-term noises do not significantly contribute to longer-term noise averages. Existing noise levels within the project area range from 60 to 70 dB, influenced heavily by existing traffic.

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication; physiological and psychological stress; and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive. Sensitive receptor land uses in the project vicinity include residences located adjacent to wells 19, 21, 27, 28, 29, 31, 32, 10-R, and the NSPAF. The closest sensitive receptor would be located within 50 feet of proposed facilities.

Regulatory Setting

Stockton Municipal Code

Title 16, Division 3, Chapter 16 of the City municipal code provides standards relevant to noise, including maximum allowable noise levels for noise-sensitive land uses. These requirements include limitations on construction related noise between the hours of 10pm and 7am, and additional daytime limitations, as well as operation period limitations on noise. The following table provides a summary of maximum allowable noise levels, pursuant to City ordinance.

TABLE 2.12-1
MAXIMUM ALLOWABLE NOISE EXPOSURE FOR NOISE-SENSITIVE LAND USES

	Outdoor Activity Areas	
Noise Level Descriptor	**Day (7am to 10pm)**	**Night (10pm to 7am)**
Hourly Sound Equivalent Level (L_{eq}), dB	55	45
Maximum Sound Level (L_{max}), dB	75	65

SOURCE: Stockton Municipal Code

Discussion

a, d) **Less than Significant with Mitigation.** Key concerns regarding noise include equipment noise during project construction, and intermittent noise associated with generator operation, during project operations. Other operation period noise associated with the project would similar in nature and sound levels to existing operations. Maintenance and chemical deliveries associated with the project would also be similar to existing levels and is not considered significant.

Temporary impacts during construction would be considered significant if they would substantially interfere with affected land uses. Substantial interference could result from a combination of factors including: the generation of noise levels substantially greater than existing ambient noise levels; construction efforts lasting over long periods of time; or construction activities that would affect noise-sensitive uses during the nighttime. For assessment of temporary construction noise impacts, "substantially greater" means more than 3 dBA (hourly Leq, DNL, or CNEL5) resulting in noise levels above 60 dB, which are considered "normally acceptable" for unshielded residential development. Noise levels from 60 to 70 dB fall within the "conditionally unacceptable" range, and those in the 70 to 75 dB range are considered "normally unacceptable."

Construction activity would be located within 50 feet of sensitive receptors, including single-family and multi-family residences. Noise from construction activity generally attenuates (decreases) at a rate of 6 to 7.5 dBA per doubling of distance. Conservatively assuming an attenuation of 6 dBA per doubling of distance, construction noise would be 89 dBA at 50 feet, 83 dBA at 100 feet, 77 dBA at 200 feet, and so on. As shown in **Table 2.12-2** and **Table 2.12-3**, construction noise levels at these sensitive receptors would intermittently reach levels in excess of 89 dBA. These predicted noise levels would exceed the noise standards in the City, resulting in a potentially significant impact during construction. Therefore, implementation of **Mitigation Measures NOISE-1** and **NOISE-2**, which would require construction contractors to adhere to daytime noise reduction measures, and would also provide a framework for responding to and tracking complaints pertaining to construction noise, would be required.

During normal project operations, intermittent vehicle trips to well sites and the NSPAF would occur, in support of maintenance activities and to restock chemicals. These activities would be consistent with existing use, and are not anticipated to result in a significant change in noise levels as a result of project implementation. The project would include installation of generators at six well sites (wells 28 through 32 and 3-R), wherein wells 28, 29, 31, and 32 are adjacent to existing residential uses. Generators would only be utilized intermittently for monthly testing and for emergency backup purposes. Emergency generator operation could occur at any time during day or night. However, based on a

5 Leq is the equivalent or energy-averaged sound level. Ldn is the Day/Night Average Sound Level. It is similar to CNEL but with no evening weighting. CNEL is the Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging

consultation with the City's Planning Department and consultation with the City's attorney, the project is considered exempt from Development Code requirements, including noise requirements, because City projects are exempt from the City permitting process. Therefore, no applicable noise standards would be exceeded, and no further mitigation is warranted.

TABLE 2.12-2
TYPICAL CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Level (dBA, L_{eq})[a]
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

a Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: Bolt, Beranek, and Newman, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, 1971.

TABLE 2.12-3
TYPICAL NOISE LEVELS GENERATED BY CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Leq at 50 feet)
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Jack Hammer	88
Dozer	87
Paver	89
Generator	78
Front Loader	79
Scraper	88
Grader	85
Backhoe	85

SOURCE: Cunniff (1977); U.S. Environmental Protection Agency (1971)

Mitigation Measure

Measure NOISE-1: Construction contractors shall implement the following measures to reduce daytime noise impacts due to construction:

- Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment

redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible);

- Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools; and
- Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as feasible from nearby sensitive receptors.

Measure NOISE-2: The City shall implement the following measures to respond to and track complaints pertaining to construction noise:

- Residents and businesses fronting the proposed facilities shall be noticed by mail at least 2 weeks prior to the commencement of construction activity in their area.
- The designation of a construction complaint manager for the project; and
- A listing of telephone numbers to reach the construction complaint manager for the project (during regular construction hours and off-hours).

b) **Less than Significant with Mitigation.** As shown in **Table 2.12-4**, use of heavy equipment (e.g., a large bulldozer) generates vibration levels of 0.031 PPV or 81 RMS at a distance of 50 feet. Sensitive receptors would be located within 50 feet of construction of the proposed facility improvements. Vibration levels at these receptors would not exceed the potential building damage threshold of 0.5 PPV. However, vibration levels could exceed the annoyance threshold of 80 RMS.

TABLE 2.12-4
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 50 ft (inches/second)[a]	RMS at 50 ft (Vdb)[b]
Large bulldozer	0.031	81
Caisson drilling	0.031	81
Loaded trucks	0.027	80

a Fragile buildings can be exposed to ground-borne vibration levels of 0.5 PPV without experiencing structural damage.
b The human annoyance response level is 80 RMS.
SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, April 1995.

Ground-borne vibration attenuates quickly with distance and the RMS level from heavy equipment would be approximately 79 RMS at 60 feet. However, because a substantial portion of proposed construction activity would be within 50 feet of sensitive receptors, implementation of **Mitigation Measure NOISE-4** would be required to reduce human annoyance from construction vibration to those living or working in the vicinity of the project.

Mitigation Measure

> **Measure NOISE-4.** Construction activity shall utilize techniques that minimize ground-borne vibration (e.g., locate equipment as far away from sensitive receptors as feasible and avoid operating multiple pieces of equipment simultaneously near sensitive receptors) to the greatest extent feasible.

c) **Less than Significant Impact.** As discussed in Checklist Items 12a and 12d, above, the noise associated with the operation of the project would not result in a substantial increase to ambient noise levels over that which currently exist. Potential for increases in noise during emergency operations and generator testing is addressed under checklist item 12.b.

e, f) **No Impact.** The project area is not located within an airport land use plan area, nor within two miles of a public or public use airport. Also, the project area is not located in the vicinity of a private airstrip. Additionally, the project would not involve the development of noise sensitive uses.

2.13 Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
13. POPULATION AND HOUSING — Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Setting

A given project may result in direct and/or indirect growth inducement potential. Direct growth inducement potential would occur if a project involved construction of new housing. Indirect growth inducement potential would occur in the event that a project would (1) establish substantial new employment opportunities, or (2) remove an obstacle to additional growth and development. Projects that could result in substantial new employment opportunities include those that would establish substantial new permanent employee opportunities (e.g., commercial, industrial or governmental enterprises). Substantial employment opportunities may also be created via substantial short-term employment opportunities, which can indirectly stimulate the need for additional housing and services to support the new employment demand. Projects that could result in the removal of an obstacle to additional growth include those that would remove a constraint on a public utility or required public service, such as increased water supply or wastewater treatment capacity.

The City's 2035 General Plan provides guidelines and requirements for city growth, land use, infrastructure, and planning for city services, including water supply. The 2035 General Plan is applicable to areas included within Stockton's planning area boundaries, including the project area.

Discussion

a) **Less than Significant.** Implementation of the project would result in the installation of new facilities that would be used to provide chloramine dosing within the City's existing water supply network. Under existing conditions, treatment of the water supply is carried out using an alternative system, which will no longer be compatible with other City facilities. The project would not cause or result in availability of any new or increased water supplies, and would cause no change (increase or reduction) in the volume of water available within the City in support of development or other uses. Therefore, implementation of the project would not alter existing water supply availability such that an impediment to growth (i.e., limited water supply) could be removed. Additionally, the project would not involve in the construction of new residences, or of new commercial or industrial uses that would require large numbers of new employees. During construction, the project would support

new temporary jobs, but the number of jobs needed for project operations would be similar to existing conditions. Therefore, the project is not expected to directly or indirectly result in population growth.

b, c) **No Impact.** Implementation of the project would not result in the removal of existing housing, the displacement of proposed housing, or the displacement of persons. The project would involve installation of chloramine dosing and associated facilities within the footprint of existing water supply and stormwater management facilities owned by the City, plus installation of minor pipelines that would be installed within existing road alignments, parks, and an existing levee. During project operations, the proposed facilities would be used to treat existing water supplies to meet current City requirements. These activities would not affect existing housing or the availability of housing within or outside of the City, and therefore would not directly or indirectly result in the displacement of housing or persons.

2.14 Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
14. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Environmental Setting

Fire protection within the City is provided by the Stockton Fire Department. The Department operates on a daily basis with one Fire Chief who reports to the City Manager, as well as 181 sworn personnel working for the department, and 24 civilian employees. The Fire Department provides fire protection and emergency medical services within the City. The Fire Department serves a total population of approximately 336,000 persons within 92 square miles, including service to select fire districts located contiguous to the City (City of Stockton Fire Department, 2012).

Police protection within the City is provided by the Stockton Police Department. Founded in 1850, the Police Department now provides service within the boundaries of the City, serving a population of approximately 290,000. The Police Department includes one chief, two deputy chiefs, 15 lieutenants, 43 sergeants, 253 officers, 44 telecommunicators, 146 civilian personnel, and 127 volunteers. The Police Department's vehicle fleet includes 158 marked vehicles, 116 unmarked vehicles, 27 motorcycles, and various other vehicles used for routine enforcement and animal control.

The Lincoln Unified School District and the Stockton Unified School District provide public school education services in the vicinity of the project area. Stockton Unified School District operates a total of 41 elementary schools, four high schools, and various additional specialty schools and programs. Lincoln Unified School District operates 10 elementary schools and 3 high schools within its service area.

Parks within the City are managed by the City of Stockton Parks and Recreation Department. The Parks and Recreation Department operates and maintains a total of 63 parks, which range in size from two-acre neighborhood sites to a 64-acre community park.

Discussion

a) **Less than Significant Impact.** The project would not generate population growth, but would support continued operation of existing infrastructure within the City. As discussed for Checklist Item 13.a-c, the project would not result in substantial new employment opportunities, or other factors that could cause additional growth within the City. Under existing conditions, facilities at each of the groundwater well sites and the NSPAF site are currently provided police, fire, and emergency medical protection by the Stockton Police and Fire Departments. Implementation of the project could result in a temporary, minor, and limited increase in demand for emergency services during construction, in the event of a construction related accident. However, the project is not expected to result in an increase in demand for police or fire department visits to the project area during operations.

References

City of Stockton Fire Department. 2012. Fire Department Web Page. Available at: http://www.stocktongov.com/government/departments/fire/default.html Accessed May 5, 2012.

2.15 Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
15. RECREATION — Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☒	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Environmental Setting

The City Parks Division maintains and operates 63 parks, which range in size from two-acre neighborhood sites to 64-acre community parks. Park facilities support a wide range of activities and include picnic areas, assorted game courts, swimming pools, ball diamonds, football and soccer fields, fountains, tennis courts and other facilities. Approximately nine parks are located within the vicinity of the project area.

Discussion

a) **Less than Significant.** Implementation of the project would involve installation of new water treatment facilities at existing municipal supply wells and pipelines. No new water supplies would be introduced, and no increase in water supply to the City would occur, beyond that provided under existing conditions, as a result of project implementation. These activities would not cause or result in changes in population within the affected communities, nor would they cause or result in increased demand for recreation, or increased use of existing recreational facilities. Therefore no deterioration of such facilities would occur as a result of project implementation.

Construction of the project could involve installation of a 4-inch pipeline within an existing municipal park. The proposed pipeline would be installed to a depth of approximately three feet, and would not require extensive excavation. Installation of the pipeline could temporarily interfere with access to the park, however, access would be limited in extent and would occur only temporarily during the project construction period.

b) **No Impact.** The proposed project would not include the construction of any permanent occupied structures. Therefore, it would not generate new population that could result in the need to provide new or improved recreational facilities the construction of which could cause physical environmental No impact would occur.

2.16 Transportation and Traffic

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
16. TRANSPORTATION AND TRAFFIC — Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☒	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☒	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
e) Result in inadequate emergency access?	☐	☒	☐	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☐

Environmental Setting

Construction of project components could have limited temporary effects on segments of the roadway network in the project corridor by temporarily increasing traffic volumes on roads that provide access to the construction work areas, and by reducing the available width of some roads during periods of the day when construction activities would occur.

State Route (SR) 99 and Interstate (I) 5 provide regional access to the project location. Local access is provided by various roadways including East Hammer Ln., Lower Sacramento Rd, West Ln, East Morada Ln, March Ln, and various surface streets in the vicinity of the well sites and the NSPAF site. Characteristics of relevant roadways within the project vicinity are described below.

Regional Highways

Interstate 5 (I-5) is an interstate highway that runs from the U.S./Mexico border near Chula Vista, CA, to the U.S./Canada border near Blaine, WA. I-5 runs along the western flank of the San Joaquin Valley, eventually passing approximately 2 miles west of the project area. Major intersections that provide access to the project area are located at West Hammer Ln., West 8-Mile Road, and West March Ln. Average daily traffic volume on I-5 at its intersection with Hammer

Ln was approximately 207,000 (including back and ahead traffic volumes) for 2010 (Caltrans, 2011).

State Route 99 (SR 99) is a state highway that connects to I-5 approximately 20 miles south of Bakersfield, CA, and follows the eastern side of the San Joaquin and Sacramento Valleys through the vicinity of the project area northward, eventually reconnecting with I-5 at Red Bluff, CA. Major intersections that provide access to the project area are located at North Wilson Way, East Hammer Ln., and East Morada Ln. Average daily traffic volume on SR 99 at its intersection with Hammer Ln was approximately 128,000 (including back and ahead traffic volumes) for 2010 (Caltrans, 2011).

Local Access Roadways

East Hammer Ln runs east/west from SR 99 to the east across the well field considered in support of the project. East Hammer Ln is an eight lane roadway (4 lanes in each direction) along most areas within the vicinity of the project area. Traffic flows vary with peak flows occurring during the morning and afternoon /evening commutes during the work week. East Hammer Ln may be utilized to provide access to well sites within the project area, or the NSPAF site.

East Morada Ln runs east/west from the community of Morada, located east of the project area, across SR 99, and along the northern portion of the project area. East Morada Ln is a 6 lane roadway (3 lanes in each direction) along most areas within the vicinity of the project area. East Morada Ln may be utilized to provide access to well sites within the project area. Traffic flows vary with peak flows occurring during the morning and afternoon /evening commutes during the work week.

Lower Sacramento Road runs north/south from the City of Lodi and areas to the north of Lodi, merging into Pacific Ave just south of Hammer Ln, within the City. Lower Sacramento Road provides an alternative north/south route connecting Stockton and Lodi, aside from SR 99 and I-5. Lower Sacramento Road is a 4 lane roadway (2 lanes in each direction) along most areas within the vicinity of the project area. West Ln may be utilized to provide access to well sites within the project area or the NSPAF site. Traffic flows vary with peak flows occurring during the morning and afternoon /evening commutes during the work week.

March Ln runs east/west from Holman Road, approximately ¾ mile west of SR 99, across I-5, and terminating in a residential area to the west of I-5. The road runs along the southern portion of the project area. March Ln is a 6 lane roadway (3 lanes in each direction) along most areas within the vicinity of the project area. March Ln may be utilized to provide access to well sites within the project area and the NSPAF site. Traffic flows vary with peak flows occurring during the morning and afternoon /evening commutes during the work week.

West Lane runs north/south from the City of Lodi into Stockton, and eventually becomes North Airport Way to the south of Harding Way, within Stockton. West Lane provides an alternative north/south route connecting Stockton and Lodi, aside from SR 99 and I-5. West Lane is a 4 lane roadway (2 lanes in each direction) along most areas within the vicinity of the project area. West

Ln may be utilized to provide access to well sites within the project area or the NSPAF site. Traffic flows vary with peak flows occurring during the morning and afternoon /evening commutes during the work week.

Transit Service

Public transit service on roads in the project area is provided by the San Joaquin Regional Transit District, which includes bus service to Stockton, Lodi, Manteca, Tracy, Lathrop, Ripon, and other cities and populated areas within and outside of San Joaquin County. Local level service is available across the City including in the vicinity of the well sites and the NSPAF site.

Discussion

a, b) **Less than Significant with Mitigation**. Construction activities would intermittently and temporarily generate increases in vehicle trips by construction workers and construction vehicles on area roadways. Construction activities would also result in a temporary reduction in the number of, or the available width of, travel lanes on select roads where construction of sewer line tie-ins would occur, resulting in short-term traffic delays for vehicles traveling past the construction zones, with resulting disruption for both general traffic and emergency vehicles.

Construction activities related to installation of the proposed facilities, including at the NSPAF site and the well sites, would generate short-term increases in vehicle trips by construction workers and construction vehicles on area roadways. Construction-generated traffic would be temporary and therefore would not result in any long-term degradation in operating conditions or level of service (LOS) on any local roadways. The primary off-site impacts from the movement of construction trucks would include short-term and intermittent lessening of roadway capacities due to slower movements and larger turning radii of the trucks compared to passenger vehicles.

Construction of All Facilities - Increased Traffic

Traffic-generating construction activities would consist of the daily arrival and departure of construction workers to each day's work site, and trucks hauling equipment and materials to and from the construction corridor.

The proposed installations at the well sites and the NSPAF site would be constructed by multiple crews of 4 to 8 people (1 Foreman, 2 Equipment Operator, 1 truck driver, 2 laborers and 2 flaggers as needed for traffic control). As a result, construction worker trips traveling to and from each work site are not anticipated to exceed about 10 round trips (20 one-way trips) per crew per day. The access roadways discussed previously, in addition to surface streets needed to access specific project sites, would be used to access work sites at sewer line tie in points.

The percent increase in traffic volumes caused by project-generated construction traffic on the roadways in the project area would not be substantial (falling within the daily fluctuations of traffic volumes). The number of project-generated truck trips would not be high, would take different routes depending on the location of each day's work site, and would be dispersed throughout the eight-hour work day, lessening the effect on traffic conditions in any one hour. Therefore, the short-term increase in vehicle trips would not significantly affect level of service (LOS) and traffic flow on area roadways, and would not meaningfully contribute to LOS exceedances for affected roadways in the vicinity of the project area.

Sewer Line Tie-Ins – Temporary Reduced Pavement Width

Installation of the proposed sewer line tie-ins would involve on site use of trenching equipment, as well as pavement removal and repaving equipment. Because the pipelines would be up to 4 inches in diameter, and would be buried at a depth of 4 feet or less below ground surface, the use of large backhoes and other large size excavation equipment is not anticipated, except at the tie-in points to existing sewers, if they are deeper than 4 feet.. Sewer line tie-ins would be installed within existing roadway alignments for the well sites, as shown in **Table 2.16-1**. These actions could temporarily disrupt existing transportation and circulation patterns in the vicinity, with direct disruption of traffic flows and street operations. Lane blockages or street closures during construction would result in a reduction in travel lanes and roadside parking. Removed pavement would be loaded directly into dump trucks and hauled offsite for disposal. Excavated soil would be temporarily stored on site, and backfilled following pipeline installation. Use of imported backfill is not anticipated. Once the pipeline is in place, backfill would be placed in the trench, and the streets would be compacted and paved; a temporary patch would be used until final repaving occurs.

The pace of open-trench work for proposed pipeline installation in paved areas is estimated to average 150 feet per day. Table 2.16-1 presents the roadway segments which would be affected by construction activities. Some roadway segments would have sufficient pavement width outside of the construction zone to accommodate two-way traffic flow, but other roadway segments would not have sufficient remaining pavement width to maintain two-way traffic flow. In the latter case, alternate one-way traffic flow would be maintained on pavement as narrow as 10 feet. Traffic would be delayed as it travels past the construction zone, but implementation of **Mitigation Measure TRAFFIC-1 and TRAFFIC-2**, below, would ensure that effects on traffic flow conditions would be minimized.

During construction, all of the roads would remain open. Travel through the construction zone by emergency vehicles would be maintained at all time

TABLE 2.16-1
ROADWAY SEGMENTS AFFECTED BY CONSTRUCTION

Site	Roadway Affected	Anticipated Level of Disruption
Well 19	Sutherland Drive	Partially blocked, temporary lane closure (requiring alternate one-way traffic flow with flaggers)
Well 21	Tam-O-Shanter Drive	Partially blocked, temporary lane closure (requiring alternate one-way traffic flow with flaggers)
Well 25	None	N/A
Well 26	East Hammer Ln	Partially blocked, temporary lane closure (requiring alternate one-way traffic flow with flaggers)
Well 27	Bonaire Circle	Partially blocked, temporary lane closure (requiring alternate one-way traffic flow with flaggers)
Well 28	North Wild Grape Drive	Partially blocked, temporary lane closure (requiring alternate one-way traffic flow with flaggers)
Well 29	Greenbrook Street	Partially blocked, temporary lane closure (requiring alternate one-way traffic flow with flaggers)
Well 30	None	N/A
Well 31	Tivoli Drive	Partially blocked, temporary lane closure (requiring alternate one-way traffic flow with flaggers)
Well 32	None	N/A
Well 3-R	Hammertown Drive	Partially blocked, temporary lane closure (requiring alternate one-way traffic flow with flaggers)
Well 10-R	Cherbourg Way	Partially blocked, temporary lane closure (requiring alternate one-way traffic flow with flaggers)
NSPAF	None	N/A

The impacts during peak traffic periods would be potentially significant under alternate one-way traffic flow conditions because levels of service would be reduced to an unacceptable level. The decrease in traffic volumes outside of the peak periods would typically, but not universally, be sufficient to allow the reduced number of travel lanes to accommodate the traffic flow without significant delays. Delays also would 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. However, implementation of **Mitigation Measure TRAFFIC-1 and TRAFFIC-2**, below, would ensure that effects on traffic and traffic flow conditions would be reduced to less than significant.

Mitigation Measures

Measure TRAFFIC-1: The City shall require the contractor(s) to obtain the necessary road encroachment permits from the County prior to construction and to comply with the applicable conditions of approval. Part of the conditions of approval would require the selected contractor(s) to resurface the roadways and restore roadside drainageways and other hydraulic features to existing conditions or better. Road encroachment permits may be necessary for all of the roadways listed in **Table 2.16-1**.

Measure TRAFFIC-2: The City shall require the contractor(s) to prepare a Traffic Control Plan in accordance with professional engineering standards prior to construction. The Traffic Control Plan could include the following requirements:

- Emergency services access to local land uses shall be maintained at all times for the duration of construction activities. Local emergency service providers shall be informed of road closures and detours.
- For roadways requiring full closures, the construction contractor(s), with oversight by the City, shall develop circulation and detour plans to minimize impacts to local street circulation. This would include the use of signing to guide vehicles onto alternative roads around the construction zone.
- Advanced warning signs of construction activities shall be posted to allow motorists to select alternative routes in advance. This shall include noticing of residents and businesses fronting the alignment at least two weeks prior to the commencement of construction activities.
- Access for local land uses including residential driveways, commercial properties, and agricultural lands during construction activities shall be maintained.
- Roadside safety protocols shall be complied with, so as to reduce the risk of accident.
- Coordination with the San Joaquin Regional Transit District shall temporarily relocate or reconfigure bus routes and bus stops as it deems necessary.
- A telephone resource shall be arranged to address public questions and complaints during project construction.
- To the extent practicable, construction work within roadways shall be minimized during peak traffic hours.

c) **No Impact.** The project would not involve aircraft, nor would the project structures intrude into aircraft flight paths or air traffic spaces. Therefore, the project would have no impact on air traffic patterns that results in substantial safety risks.

d) Construction activities would intermittently and temporarily increase potential traffic safety hazards for vehicles, bicyclists and pedestrians on public roadways. Construction activities would also increase wear-and-tear on the designated haul routes used by construction vehicles to access the project work sites.

Heavy equipment operating adjacent to or within a road right-of-way could increase the risk of accidents. Construction-generated trucks on corridor roadways would interact with other vehicles. Potential conflicts also could occur between construction traffic and bicyclists and pedestrians. The conditions of approval identified in **Mitigation Measure TRAFFIC-1** would require the contractor(s) to restore roadways to existing conditions or better. Furthermore, the traffic control plan, identified in **Mitigation Measure TRAFFIC-2**, would require the construction contractor to comply with roadside safety protocols. Implementation of both mitigation measures would help reduce the risk of accident along the construction corridor.

The use of large trucks to transport equipment and material to and from the project work sites could affect road conditions on the designated haul routes by increasing the rate of

road wear. The degree to which this impact would occur depends on the design (pavement type and thickness) and existing condition of the road. Major arterials and collectors are designed to accommodate a mix of vehicle types, including heavy trucks. Local streets are generally not built with a pavement thickness that would withstand substantial truck traffic volumes. Implementation of **Mitigation Measure TRAFFIC-3** would therefore be required.

Mitigation Measure

> **Measure TRAFFIC-3:** The City shall return all roadways to a structural condition equal to that which existed prior to construction activity.

e) **Less than Significant with Mitigation.** Construction activities would affect access for emergency vehicles traveling past the construction zones. Construction within or across streets, and temporary reduction in travel lanes, could result in delays for emergency vehicle access in the vicinity of the worksites. In addition, access to driveways and to cross streets along the construction route could be temporarily blocked due to trenching and paving. This could be an inconvenience to some and a significant problem for others, particularly emergency service providers (e.g., police and fire). Travel through the construction zone by emergency vehicles would be maintained at all time. With the incorporation of **Mitigation Measure TRAFFIC-2** and the restoration of vehicle access through the use of steel trench plates or trench backfilling, a less than significant impact is anticipated to emergency access in the project area.

f) Construction activities would intermittently and temporarily disrupt transit service in the project area. However, the project would have no impact on adopted policies, plans, or programs supporting alternative transportation.

As described above, the San Joaquin Regional Transit District provides bus service in the project area. While buses could be slowed by project construction trucks on roads used as haul routes, a greater potential effect would occur on roads in which sewer line tie-ins would be installed. Installation of the proposed sewer tie-in lines could disrupt access to bus stops along the alignments and could slow bus movements. The traffic control plan, identified in **Mitigation Measure TRAFFIC-2**, stipulates actions required of contractor(s) to minimize impacts to transit service (including coordination with the San Joaquin Regional Transit District regarding temporarily relocate or reconfigure bus routes and bus stops as it deems necessary). As a result, implementation of **Mitigation Measure TRAFFIC-2** would be required.

References

Caltrans, 2011. Average Daily Traffic Counts. http://traffic-counts.dot.ca.gov/2010all/index.html Accessed on May 20, 2012.

2.17 Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
17. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Environmental Setting

Water Service

Water service in the City is provided by Stockton Municipal Utilities Department and by California Water Service Company (Calwater). Water supplies within the City are derived from a variety of sources and supplies, including groundwater and surface water derived from Stockton East Water District (SEWD), Woodbridge Irrigation District (WID), and the Stockton Delta Water Supply Project.

Stormwater Drainage

Stormwater drainage facilities within the City are managed and operated by the City Utilities Department. The Utilities Department operates and maintains 620 miles of stormwater pipe, including 72 pump stations and over 100 discharge outfall pipes. Stormwater is collected from streets and other areas and discharged into local rivers, creeks, and sloughs. The Utilities Department also manages the City's NPDES permit and associated monitoring and testing requirements.

Wastewater Collection and Treatment

Wastewater collection and treatment within the City is provided by the City Municipal Utilities Department. The department manages over 116,000 sewer connections throughout the City, along

with over 900 miles of sanitary sewer lines. Wastewater treatment is provided by the Stockton Regional Waterwater Control Facility, which processes approximately 32 million gallons of sewage per day on average. The facility provides tertiary treatment and discharges wastewater to the Sacramento-San Joaquin Delta.

Solid Waste Disposal

Solid waste collection services within the City are provided via the City by two contracted waste haulers, Allied Waste and Waste management. Landfills and materials handling facilities located in the vicinity of the project area are shown in the following table.

TABLE 2.17-1
SAN JOAQUIN COUNTY ACTIVE PERMITTED SOILD WASTE DISPOSAL SITES

	Maximum Daily Disposal (Tons/Day)	Estimated Remaining Capacity (Cubic Yards)	Estimated Closure Date
North County Landfill	825	17,300,000	2035
Foothill Landfill	1,500	97,900,000	2054
Austin Road/Forward Inc. Landfill	8,668	40,031,058	2020
Lovelace Transfer Station	1,300	n/a	n/a
Central Valley Waste Services Transfer Station	1,700	n/a	n/a
Tracy Material Recovery and Transfer Station	1,000	n/a	n/a

n/a = Not applicable. Note that transfer stations do not have permanent solid waste storage capacity.

SOURCE: CIWMB 2008.

Discussion

a) **No Impact.** Implementation of the project would be required to adhere to requirements of applicable NPDES permitting requirements (refer to Checklist Item 9.a for additional details). The project would result in the discharge of a small amount of wastewater (i.e., brine from the chloramine dosing equipment and sample water from chlorine analyzers) into City sanitary sewer facilities. However, wastewater would be treated at the Regional Wastewater Control Facility, in accordance with that facility's discharge permits. No other potential discharges would occur from the project area.

b) **Less than significant.** The project would result in the discharge of a small volume of wastewater to the City sanitary sewer system. However, the total volume of wastewater discharged into the sewer system would be minimal, and would not result in a noticeable increase in treatment requirements at the Regional Wastewater Control Facility. Wastewater would be discharged into existing sewer lines and would not require or contribute to need for the installation of new facilities, beyond the scope of the project.

With respect to water supply, implementation of the project would help ensure continued availability of water supply within the City, by providing chlorine residual addition that would be compatible with other existing and proposed water supply facilities. Implementation

of the project would not result in a net change in water demand within the City. Therefore, no new or expanded water treatment facilities would be required, beyond the scope of the project.

c) **Less than Significant.** The project facilities would be installed in areas where storm drainage facilities are already in place. Installation of the proposed facilities would result in a minor increase in the area of impervious surfaces within the project area. Runoff from these new surfaces would be channeled into existing stormwater facilities, and it is anticipated that existing facilities would be sufficient to convey the minor changes in stormwater flows that could result from project implementation. Therefore, potential effects on stormwater facilities would be minimal, and expansion or construction of new stormwater facilities located off site is not anticipated.

d) **Less than Significant.** Implementation of the project would require minor water usage during construction for dust control and grading activities. Water supply needed to support these facilities would be available from existing water supplies that are currently available within the City, without requiring additional water supply entitlements, or expansion of facilities. During project operations, negligible water would be required in support of the project. Therefore, the project would not require additional water supplies or entitlements.

e) **Less than Significant.** Implementation of the project would result in a minimal increase in wastewater generation. Specifically, assuming constant operation of the well pump at each site (this is likely an overestimate), approximately 80 gallons per day (gpd) of wastewater would be generated at each well site. This amounts to a maximum volume increase of 960 gpd (0.00096 mgd) of additional wastewater discharged to the sewer system per day. This additional volume of wastewater would not interfere with existing wastewater treatment plant operations, and would not meaningfully contribute to an increase in demand for wastewater treatment facilities.

f) **Less than Significant.** As shown in **Table 2.17-1**, a total of over 150,000,000 cubic yards of remaining capacity is available in landfills located in the vicinity of the project area. Project implementation is expected to generate only minor volumes of construction waste at each site, primarily associated with the installation of proposed facilities on site. During operations, the project would not result in a net increase in solid waste generated on site. Therefore, landfills serving the project area would have sufficient capacity available to serve the project's solid waste disposal needs.

g) **No Impact.** Waste disposal activities associated with the project would be required to adhere to all applicable regulations with respect to solid waste handling and disposal. All solid wastes would be recycled or disposed of in a landfill with sufficient available capacity.

References

California Integrated Waste Management Board (CIWMB). 2008. San Joaquin County Waste Stream Profile. Available at: http://www.ciwmb.ca.gov/Profiles/County/

2.18 Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
18. MANDATORY FINDINGS OF SIGNIFICANCE — Would the project:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

a) **Less than Significant with Mitigation.** As discussed the Air Quality; Biological Resources; Cultural Resources; Geology, Soils, and Seismicity; Hazards and Hazardous Materials; Hydrology and Water Quality; Noise; and the Transportation and Traffic sections of this Initial Study, the project would result in potentially significant temporary impacts as a result of construction of the proposed ammonia addition facilities including the facilities proposed for well sites and at the NSPAF site. These potential impacts would have the potential to degrade the quality of the environment. However, adoption and implementation of mitigation measures described in this Initial Study would reduce these individual impacts to less than significant levels.

b) **Less than Significant with Mitigation.** Cumulative environmental effects are multiple individual effects that, when considered together are considerable or compound or increase other environmental impacts. The individual effects may result from a single project or a number of separate projects and may occur at the same place and point in time, or at different locations and over extended periods of time. Cumulative projects identified that are ongoing at present or anticipated in the reasonably foreseeable future include the Stockton Delta Water Supply Project (water supply project for the City), Bear Creek South (development/master plan located north of the project area); the Bear Creek Specific Plan (specific plan located north of the project area); Crystal Bay (development located northwest of the project area); and the Delta Cove project (development located south of Bear Creek, north of Mosher Slough).

The project would serve the City, including existing uses and planned development considered under the current Stockton General Plan. However, the project would not lead to a net increase in the capacity of available water supply within the City, and as discussed for direct impacts, would not result in new growth within the City. Additionally, the other cumulative projects identified within this analysis either have already undergone separate environmental review, or are currently in the process of undergoing environmental review. These separate environmental reviews have or are anticipated to address the specific environmental impacts associated with the actions and growth proposed therein. Implementation of the mitigation measures proposed in this environmental document would reduce the project's impacts to less than significant. They would further reduce the project's contribution to environmental impacts to less than cumulatively considerable.

c) **Less than Significant with Mitigation.** Project impacts include the potential for an accidental release of hazardous materials stored in the project construction or operation area that, the release of which could result in deleterious effects on humans and the environment. However, with adherence to state law regarding hazardous materials handling and storage, and with implementation of mitigation measures provided in the Hazards and Hazardous Materials section, the project would not result in environmental effects that could cause adverse effects on human beings, either directly or indirectly. Temporary impacts to human beings through degradation of local air quality and noise could occur during construction. However, with implementation of mitigation measures provided in the Air Quality and Noise sections, these temporary impacts would be less than significant.

Appendix A
Air Quality

ESA

[illegible]

6/23/2016 3:35:25 PM

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Appendix B
Special Status Species List

ESA

TABLE B-1
SPECIAL-STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA

Species	Fed/State/CNPS Status	General Habitat	Potential for Project to Impact Species
Invertebrates			
Branchinecta lynchi *Vernal pool fairy shrimp*	FT/--/--	Occurs in vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas and alkali flats from Shasta County through most of the length of the Central Valley to Tulare County. Pools are grass or mud bottomed, with clear to tea-colored water, and are often in basalt flow depression pools in grasslands	Unlikely. No suitable habitat is present in the project area.
Desmocerus californicus dimorphus *Valley elderberry longhorn beetle*	FT/--/--	Breeds and forages exclusively on elderberry shrubs (*Sambucus mexicana*) typically associated with riparian forests, riparian woodlands, elderberry savannas, and other Central Valley habitats. Occurs only in the Central Valley of California. Prefers to lay eggs in elderberries 2–8 inches in diameter; some preference shown for "stressed" elderberries.	Unlikely. No suitable habitat is present in the project area.
Lepidurus packardi *Vernal pool tadpole shrimp*	FE/--/--	Occurs in vernal pools containing clear to highly turbid water.	Unlikely. No suitable habitat is present in the project area.
Fish			
Acipenser medirostris Green sturgeon	FT/SSC/--	Spawns in the Klamath River and Sacramento River Watersheds. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	Unlikely. No suitable habitat is present in the project area.
Hypomesus transpacificus **Delta smelt**	**FT/ST/--**	**Open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators.**	**Moderate. Suitable habitat is present with the Calaveras River and one CNDDB occurrence was recorded at the confluence of the Calaveras River and the San Joaquin River.**
Oncorhynchus mykiss **Central Valley steelhead**	**FT/--/--**	**This evolutionary significant unit (ESU) enters the Sacramento and San Joaquin Rivers and their tributaries from July to May; spawning from December to April. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.**	**Moderate. Migratory route in the Calaveras River. Critical habitat is designated in the Calaveras River within the area adjacent to the NSPAF, and well sites 27 and 28.**
Oncorhynchus tshawytscha **Central Valley spring-run Chinook**	**FT/ST/--**	**This ESU enters the Sacramento and San Joaquin Rivers and tributaries March to July; spawning from late August to early October. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.**	**Moderate. Migratory route in the Calaveras River.**

TABLE B-1
SPECIAL-STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA

Species	Fed/State/CNPS Status	General Habitat	Potential for Project to Impact Species
Oncorhynchus tshawytscha Sacramento River winter-run Chinook	FE/SE/--	This ESU enters the Sacramento River December to May; spawning peaks May and June. Upstream movement occurs more quickly than in spring run population. Young move to rearing areas in and through the Sacramento River, Delta, and San Pablo and San Francisco.	Unlikely. Project area is outside species range.
Pogonichthys macrolepidotus Sacramento splittail	--/SSC/--	Found mostly in slow-moving marshy sections of rivers, sloughs, backwaters, lakes and rivers in the northern San Francisco Estuary and Central Valley of California. Require floodplains that stay flooded for several weeks for spawning. With the exception of spawning, largely confined to Delta, Suisun Bay, Suisun Marsh, and lower Napa River, lower Petaluma River and parts of the San Francisco Estuary.	Unlikely. No suitable habitat is present within the project area and is outside species known range.
Amphibians			
Ambystoma californiense California tiger salamander	FT/ST/--	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Needs underground refuges and vernal pools or other seasonal water sources.	Unlikely. No suitable habitat is present within the project area.
Rana boylii foothill yellow-legged frog	--/SSC/--	Found in shallow, slow, gravelly streams and rivers with sunny banks, in forests, chaparral, and woodlands.	Unlikely. No suitable habitat is present within the project area.
Rana draytonii California red-legged frog	FT/SSC/--	Breeds in slow moving streams, ponds, and marshes with emergent vegetation and an absence or low occurrence of predators.	Unlikely. No suitable habitat is present within the project area.
Reptiles			
***Actinemys marmorata* Western pond turtle**	**--/SSC/--**	**Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. Nest sites most often characterized as having gentle slopes (<15%) with little vegetation or sandy banks.**	**Medium. Suitable habitat is present within and along the Calaveras River, Pixley Slough, and Mosher Creek.**
***Thamnophis gigas* Giant garter snake**	**FT/ST/--**	**Found primarily in marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks in California's interior.**	**High. Suitable habitat is present within and along the Calaveras River, Pixley Slough, and Mosher Creek. Two CNDDB occurrences were recorded within 2 miles of the project area.**
Birds			
***Agelaius tricolor* Tricolored blackbird**	**--/SSC/--**	**Nests in colonies within vicinity of fresh water/ marshy areas. Colonies prefer heavy growths of cattails and tules.**	**Medium. Suitable habitat is present within the project area.**

TABLE B-1
SPECIAL-STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA

Species	Fed/State/CNPS Status	General Habitat	Potential for Project to Impact Species
Athene cunicularia **burrowing owl**	**--/SSC/--**	**Open, dry, annual or perennial grasslands and scrublands characterized by low-growing vegetation. Subterranean nester dependent upon burrowing mammals, specifically California ground squirrel. May also be found around golf courses, and disturbed/ruderal habitat in urban areas.**	**High. Suitable habitat is present within and adjacent to the project area. One CNDDB occurrence has been recorded within close proximity to three of the proposed well sites.**
Buteo swainsonii **Swainson's hawk**	**--/ST/--**	**Forages in open and agricultural fields and nests in mature trees usually in riparian corridors.**	**High. Suitable foraging habitat exists within the project site and there are numerous CNDDB recorded occurrences within close proximity to proposed well sites.**
Dendroica petechia brewsteri **Yellow warbler**	**--/SSC/--**	**Breeds in shrubby thickets and woods, particularly along watercourses and in wetlands. Common trees include willows, alders, and cottonwoods. May also be found in suburban or less densely settled areas, orchards and parks, and may breed there.**	**Medium. Suitable habitat is present within the orchards and parks within close proximity to some of the proposed well sites.**
Elanus leucurus **White-tailed kite**	**--/SFP/--**	**Forages in open grasslands and agricultural fields and marshes. Nests in scattered mature trees within foraging habitat.**	**Medium. Potential nesting and foraging habitat is present within the project area.**
Laterallus jamaicensis coturniculus California black rail	--/ST, SFP/--	Majority of population found in the tidal salt marshes of the northern San Francisco Bay region, primarily in San Pablo and Suisun Bays; also found in freshwater marshes in the foothills of the Sierra Nevada.	Low. Limited suitable habitat may be present within the Calaveras River, Pixley Slough, and Mosher Creek.
Xanthocephalus xanthocephalus **Yellow-headed blackbird**	**--/SSC/--**	**Nests in freshwater marshes or reedy lakes; during migration and winter prefers open cultivated lands, fields, and pastures.**	**Medium. Suitable habitat may be present along the Calaveras River, Pixley Slough, and Mosher Creek. The scattered fields and pastures throughout the project area could provide suitable wintering habitat.**
Mammals			
Sylvilagus bachmani riparius Riparian brush rabbit	FE/SE/--	Found in dense, brushy areas of Valley riparian forests, marked by extensive thickets of wild rose (*Rosa* spp.), blackberries (*Rubus* spp.), and willows (*Salix* spp.).	Unlikely. No suitable habitat is present within the project area.
Taxidea taxus American badger	--/SSC/--	Found in dry, open grasslands, fields, and pastures. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Low. Project area provides limited suitable habitat and is within species' known range.

TABLE B-1
SPECIAL-STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA

Species	Fed/State/CNPS Status	General Habitat	Potential for Project to Impact Species
Plants			
Astragalus tener var. tener Alkali milk-vetch	--/--/1B.2	Alkali playa, valley and foothill grassland, vernal pools / March – June.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Atriplex cordulata Heartscale	--/--/1B.2	Chenopod scrub, valley and foothill grassland, meadows / April – October.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Atriplex joaquiniana San Joaquin spearscale	--/--/1B.2	Chenopod scrub, valley and foothill grasslands, meadows and seeps / April – October.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Blepharizonia plumosa Big tarplant	--/--/1B.1	Annual herb found in valley and foothill grasslands. Blooms July-Oct. Elevation: 98 to 1,657 ft. msl.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
California macrophylla Round-leaved filaree	--/--/1B.1	Annual herb found in cismontane woodland and valley and foothill grassland with clay soil. Blooms March-May. Elevation: 49 to 3,937 ft. msl.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Castilleja campestris ssp. succulent Succulent owl's-clover	FT/SE/1B.2	Annual hemiparasitic herb found in vernal pools that are often acidic. Blooms April-May. Elevation: 164 to 2,460 ft. msl.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Chloropyron palmatum Palmate-bracted bird's-beak	FE/CE/1B.1	Annual hemiparasitic herb found in chenopod scrub and alkali valley and foothill grasslands. Blooms May-Oct. Elevation: 16 to 509 ft. msl.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Cirsium crassicaule Slough thistle	--/--/1B.1	Annual or perennial herb found in chenopod scrub, marshes and swamps, and riparian scrub. Blooms May-Aug. Elevation: 10 to 328 ft. msl.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Delphinium recurvatum Recurved larkspur	--/--/1B.2	Perennial herb occurring in chenopod scrub; cismontane woodland; and in alkali valley and foothill grassland. Blooms March-June. Elevation: 10 to 2,460 ft msl.	Unlikely. No suitable habitat is present within the project area.
Eryngium racemosum Delta button-celery	--/SE/1B.1	Annual or perennial herb found within vernally mesic clay depressions in riparian scrub habitat. Blooms June-Oct. Elevation: 10 to 98 ft. msl.	Unlikely. No suitable habitat is present within the project area.
Hibiscus lasiocarpus var. *occidentalis* Woolly rose-mallow	--/--/1B.2	Perennial rhizomatous emergent herb found in freshwater marshes and swamps. Blooms June-Sept. Elevation: 0 to 393 ft msl.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Lathyrus jepsonii var. *jepsonii* Delta tule pea	--/--/1B.2	Perennial herb found in freshwater and brackish marshes and swamps. Blooms May-July (sometimes extending into Sept.). Elevation: 0 to 13 ft msl.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Legenere limosa Legenere	--/--/1B.1	Annual herb found in vernal pools. Blooms April-June. Elevation: 3 to 2,890 ft msl.	Unlikely. No suitable habitat is present within the project area.

TABLE B-1
SPECIAL-STATUS SPECIES THAT MAY OCCUR IN THE PROJECT AREA

Species	Fed/State/CNPS Status	General Habitat	Potential for Project to Impact Species
Lilaeopsis masonii Mason's lilaeopsis	--/SR/1B.1	Perennial rhizomatous herb found in brackish or freshwater marshes and swamps and riparian scrub. Blooms April-Nov. Elevation: 0 to 32 ft msl.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Sagittaria sanfordii Sanford's arrowhead	--/--/1B.2	Found in assorted freshwater habitats including marshes, swamps and seasonal drainages at 0-650 m in elevation. Blooms May-Oct.	Unlikely. No suitable habitat is present within the project area.
Symphyotrichum lentum Suisun marsh aster	--/--/1B.2	Perennial rhizomatous herb found in brackish and freshwater marshes and swamps. Blooms May-Nov. Elevation: 0 to 10 ft msl.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Tropidocarpum capparideum Caper-fruited tropidocarpum	--/--/1B.1	Annual herb found in valley and foothill grassland (alkaline hills). Blooms March-April. Elevation: 3 to 1,493 ft. msl.	Unlikely. No suitable habitat within the immediate vicinity of the project area.
Critical Habitat			
Hypomesus transpacificus Delta smelt	Critical Habitat		Unlikely. No critical habitat identified within the project area.
***Oncorhynchus mykiss* Central Valley steelhead**	**Critical Habitat**		**Medium. Critical Habitat unit occurs within the Calaveras River.**
Natural Communities			
Coastal and Valley Freshwater Marsh	Natural Community		Unlikely. Natural community does not occur within project area.
Great Valley Valley Oak Riparian Forest	Natural Community		Unlikely. Natural community does not occur within project area.
Northern Hardpan Vernal Pool	Natural Community		Unlikely. Natural community does not occur within project area.
Valley Oak Woodland	Natural Community		Unlikely. Natural community does not occur within project area.

SOURCE: USFWS, 2012; CDFG, 2012; CNPS, 2012.
*Species with medium or high potential to occur in the study area are shown in **bold**.

KEY:

Federal: (USFWS)
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
FC = Candidate for listing by the Federal Government

State: (CDFG)
SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
SR = Listed as Rare by the State of California (plants only)
SSC = California Species of Concern

CNPS: (California Native Plant Society)
List 1A = Plants presumed extinct in California
List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2 = Plants rare, threatened, or endangered in California but more common elsewhere
List 3 = Need more information
0.1 = Seriously endangered in California
0.2 = Fairly endangered in California
0.3 = Not very endangered in California

– = No Listing

Appendix C
SJMSCP Measures to Minimize Impacts

ESA

5.2 MEASURES TO MINIMIZE IMPACTS - INCIDENTAL TAKE MINIMIZATION MEASURES

As noted in the preceding overview, efforts to minimize impacts to SJMSCP Covered Species are species-based emphasizing the implementation of Incidental Take Minimization Measures aimed at averting the actual killing or injury of individual SJMSCP Covered Species on Open Space lands being Converted to non-Open Space uses.

The following Incidental Take Minimization Measures represent the best management practices known at the time of adoption of the SJMSCP. These measures may be refined throughout the life of the Plan, pursuant to the SJMSCP's Adaptive Management Plan (see Section 5.9.4), in response to positive or negative results found in the application of these methods as identified in the SJMSCP's Monitoring Plan (see Sections 5.9.2 and 5.9.3) or to reflect improvements and new discoveries in methods of Incidental Take Minimization or other biological factors. Incidental Take Minimization Measures for the SJMSCP are described, in detail, in Section 5.2.4. Procedures for determining when these measures apply to projects are described as follows:

5.2.1 ESTABLISHING CONDITIONS OF PROJECT APPROVAL RELATED TO INCIDENTAL TAKE MINIMIZATION MEASURES

5.2.1.1 Review Process and Condition Format

Plan Participants shall forward Advisory Agency Notices to the Joint Powers Authority (JPA), as required by Section 8.1.3.2, at the beginning of a discretionary project's application review process. The JPA shall respond, in writing, to the Plan Participants in accordance with the SJMSCP stating that either:

A. No Incidental Take Minimization Measures are necessary for the project; or,

B. Incidental Take Minimization Measures are necessary for the project. The JPA shall list the applicable Incidental Take Minimization Measures in the written response.

Plan Participants shall attach Incidental Take Minimization Measures, in accordance with Sections 5.2.3 and 5.2.4 of the SJMSCP, as conditions of project approval as provided by the JPA and including the substance of the following text to be included as part of the conditions of project approval or as an attachment to conditions of project approval:

> "In reliance on the Section 10(a)(1)(B) Permit issued by the United States Fish and Wildlife Service and the Section 2081(b) Incidental Take Permit issued by the California Department of Fish and Game, the [City/County of] has [select one: issued a(n)/approved a(n)] [identify entitlement as appropriate: e.g., Conditional Use Permit/Site Development Permit/Subdivision Map/Parcel Map, etc.] to [name of Project Proponent/Applicant/Landowner], its successors, agents and assigns pursuant to the "Implementation Agreement for the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan" which will allow [name of Project Proponent/Applicant/Landowner], its successors, agents and assigns to construct, operate and maintain the Project commonly known as [name specific Project and cite document containing project description as approved by local jurisdiction] and located on [list parcel numbers and/or attach map]

which may result in a legally permitted Incidental Take of the SJMSCP Covered Species in accordance with and subject to the terms and conditions of the [identify entitlement as appropriate: e.g., Conditional Use Permit/Site Development Permit/Subdivision Map/Parcel Map, etc.]. This Certification applies only to activities on the subject parcel(s) which are carried out in full compliance with [identify entitlement as appropriate: e.g., Conditional Use Permit/Site Development Permit/Subdivision Map/Parcel Map, etc.], Section 10(a)(1)(B) Permit and Section 2081(b) Incidental Take Permit conditions."

5.2.1.2 Time Limits for JPA Review of Discretionary Projects

The JPA shall provide the written response required pursuant to Section 5.2.1.1 to Plan Participants within the following time periods commencing with the receipt of an Advisory Agency Notice from Plan Participants:

A. For projects 40 acres or less in size, written response will be provided by the JPA to the Plan Participants within 30 calendar days;

B. For projects of greater than 40 acres the JPA shall provide written responses to the Plan Participants within 60 calendar days;

C. For projects requiring an environmental impact report for other than biological reasons, time limits shall be extended to allow for surveys of SJMSCP Covered Plant Species during optimal blooming seasons.

Extensions of these time limits may be granted with the approval of the Project Proponent.

5.2.1.3 Completion of Incidental Take Minimization Measures-Responsibilities of the Project Proponent

Incidental Take Minimization Measures shall be completed prior to Site Disturbance (normally prior to grading) as indicated in the conditions of project approval. Some Incidental Take Minimization Measures will be carried out during project construction. The cost of implementing Incidental Take Minimization Measures is the responsibility of the Project Proponent. The JPA is responsible for costs and implementation of relocation efforts as approved by the Permitting Agencies and as determined necessary through preconstruction surveys.

The following paragraphs summarize the JPA's procedure for assessing the applicability of Incidental Take Avoidance Measures for individual projects.

5.2.2 PRECONSTRUCTION SURVEYS

5.2.2.1 Overview

There are four categories of preconstruction surveys necessary to the implementation of the SJMSCP:

A. Preconstruction surveys to verify vegetation types affected by the project and to determine if SJMSCP Covered Species are present and, if present, attaching Incidental Take Minimization Measures as conditions of project approval for individual projects (see Section 5.2.2.5 for survey methodologies and Section 5.2.2.4 for special provisions for conducting plant surveys). These preconstruction surveys shall be conducted in the field when a project is located on suitable habitat for one or more of the SJMSCP Covered Species;

B. Preconstruction surveys conducted prior to (or, for some Incidental Take Minimization Measures, during) ground-disturbing activities to determine if SJMSCP Covered Species have been successfully relocated and/or to determine if other Incidental Take Minimization Measures have been implemented, as specified in the conditions of project approval; and

C. Preconstruction surveys, conducted in compliance with current U.S. Fish and Wildlife Service protocols, to determine the presence or absence of Conservancy and/or longhorn fairy shrimp within vernal pools or other wetlands located southwest of I-580 in the *Southwest Zone* unless complete avoidance of vernal pools and/or wetlands is achieved in compliance with SJMSCP Section 5.5.9.

D. Preconstruction surveys conducted pursuant to the protocol established in Section 5.2.2.5(A-C) for:

- **!** Large-flowered fiddleneck southwest of the 900 foot contour line in the *Southwest Zone* southwest of I-580;
- **!** Showy madia in the *Southwest Zone*;
- **!** Hospital canyon larkspur in the *Southwest Zone*;
- **!** Diamond-petaled poppy in the *Southwest Zone*;
- **!** Greene's tuctoria in the *Vernal Pool Zone*;
- **!** Succulent owl's clover in the *Vernal Pool Zone*;
- **!** Legenere in the *Vernal Pool Zone*;
- **!** Delta button celery in the *Central Zone* in S(Scrub) vegetation types;
- **!** Sanford’s arrowhead in the *Central Zone* in W3, W4 and all I and R vegetation types; and

- Slough thistle in the *Central and Central/Southwest Transition Zones* in W4, R, R2, R3, R4 or R5 vegetation types–in particular where R touches or transitions to W.

The costs of conducting preconstruction surveys described in paragraphs A, B, and D, above, are calculated in the administrative costs for the SJMSCP and are included in funding estimates. The JPA shall conduct preconstruction surveys described in the paragraphs A, B, and D, above, at no additional cost to the Project Proponent. Preconstruction surveys required pursuant to paragraph C, above, are the responsibility of the Project Proponent.

5.2.2.2 Time Limits for Conducting JPA Preconstruction Surveys

The JPA shall conduct preconstruction surveys to determine the necessity of establishing Incidental Take Minimization Measures as conditions of project approval, as described above in 5.2.2.1(A and D) within the following time periods commencing from the date of receipt of Advisory Agency Notices from the Plan Participants except as provided in Section 5.2.2.5(B):

A. For projects of 40 acres or less, surveys shall be conducted within 30 calendar days

B. For projects of greater than 40 acres surveys shall be conducted within 60 calendar days,

C. For projects requiring an environmental impact report, the time limits shall be extended to allow for surveys for SJMSCP Covered Plant Species during optimal blooming seasons.

The JPA shall conduct preconstruction surveys prior to ground-disturbing activities to determine if SJMSCP Covered Species have been successfully relocated and/or to determine if other Incidental Take Minimization Measures have been implemented as specified in the conditions of project approval, as described above in Section 5.2.2.1(B), within two working days from the date that the JPA receives written or oral notice that the Project Proponent is ready to begin Site Disturbances except as provided in Sections 5.2.2.4(D) and 5.2.2.5(D) and 5.2.2.5 (E). Extensions of these time limits may be granted with the approval of the Project Proponent.

While the time limits for responding to Advisory Agency Notices remain as described above, actual preconstruction survey time limits do not apply for the following:

A. For projects proposed within potential habitat for the following plant species: large-flowered fiddleneck (*Amsinckia grandiflora*); succulent owl's clover (*Castilleja campestris* ssp. *succulenta*) Greene's tuctoria (*Tuctoria greenei*), Delta button celery (*Eryngium racemosum*), Diamond-petaled California poppy (*Escholzia rhombipetala*), showy madia (*Madia radiata*), slough thistle (*Cirsium crassicaule*), legenere (*Legenere limosa*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), and Sanford's arrowhead (*Sagittaria sandfordii*). For these plant species, preconstruction surveys shall occur based on blooming periods for the plants and in accordance with the provisions of Section 5.2.2.5(B) unless otherwise approved pursuant to Section 5.2.2.5(C), unless full avoidance of all potential suitable habitat for the species occurs pursuant to Sections 5.5.9

(F) for narrowly distributed plant species or unless no kill/no Conversion of occupied habitat limits are lifted pursuant to Section 5.5.2.1; and

B. For projects proposed within potential habitat for the longhorn fairy shrimp and Conservancy fairy shrimp. Preconstruction surveys for these species shall be in accordance with current USFWS survey protocols unless full avoidance of all potential habitat for these species occurs pursuant to Section 5.5.9(B) or unless no kill/no Conversion of occupied habitat limits are lifted pursuant to Section 5.5.2.7.

5.2.2.3 Determining the Necessity for Site Visits as Part of Preconstruction Surveys

To assist in its assessment of the necessity for Incidental Take Minimization Measures, the JPA shall consult the *SJMSCP GIS Database* or other sources (e.g., current reports from Permitting Agency field personnel; published results of field surveys conducted by, or on behalf of, Permitting Agencies or other local, state or federal agencies; the SJMSCP Biological Analysis; or other sources that provide information related to the location of SJMSCP Covered Species), if necessary, to determine the likelihood for disturbing an SJMSCP Covered Species or Natural Land area (in particular vernal pools or other wetlands) based on information indicating known species occupation sites, vegetation types present and the potential for the site to be occupied by a species given the vegetation types and species needs. If insufficient information exists to make a determination, the JPA shall conduct a preconstruction survey to assess the likelihood of the occurrence of an SJMSCP Covered Species or any Natural Lands located within the project area. It is anticipated that preconstruction surveys occurring on the project site will occur on the majority (perhaps up to 90%) of project sites. Preconstruction surveys at the project site will always occur when suitable habitat is present or potentially present for one or more of the SJMSCP Covered Species. The estimated 10% of projects which are unlikely to require a preconstruction survey include, for example, infill areas within well-developed urban centers with extensive ground disturbance and extensive paving.

5.2.2.4 Special Provisions for Conducting Preconstruction Surveys for Plants

Since plants permanently occupy a given site (and therefore cannot easily be avoided by timing construction to avoid breeding seasons) and some plants may only be seasonally identified during sometimes brief blooming seasons, special provisions have been included in the SJMSCP for conducting pre-construction surveys for plants to ensure that Incidental Take Minimization Measures can be undertaken.

SJMSCP Covered Plant Species in San Joaquin County are located primarily on Natural Lands outside the boundaries of proposed development areas anticipated over the next 50 years as illustrated in the following maps located at the back of the SJMSCP:

- *SJMSCP Planned Land Use Map* - Illustrates boundaries of proposed development areas for the next 50 years.

- San Joaquin County Habitat Map Conservation and Open Space Plan Maps - Distribution of Existing Vegetation Habitat Types in San Joaquin County. Provides overview of the locations of Natural Lands, Natural Lands which are Wetlands, High and Low Habitat Value Agricultural Lands, and Urban Lands.

- San Joaquin County Habitat Map Conservation and Open Space Plan Maps - Species Occurrence. This map provides an overview of the distribution of SJMSCP Covered plants, birds, mammals, amphibians, reptiles, and invertebrates.

These three maps illustrate that **most SJMSCP Covered Plant Species, with few exceptions (e.g., Delta slough thistle, Delta button celery and vernal pool species), are located almost exclusively on Natural Lands located outside of proposed development boundaries**.

Further, based upon development patterns over the past 30± years and the fact that proposed development will occur primarily on highly disturbed and cultivated lands (Agricultural Habitat Lands) while most SJMSCP Covered Plant Species occur on Natural Lands, only minimal impacts are anticipated for most SJMSCP Covered Plant Species. In fact, **there is a much higher likelihood that most SJMSCP Covered Plant Species will be protected than they will be subject to Incidental Take under the SJMSCP.**

The following factors further support these conclusions:

- ***Southwest Zone.*** This area consists primarily of grasslands (Natural Lands). Virtually no development (except for some minor mineral resource development and urbanization concentrated along I-580--see the *SJMSCP Proposed Land Use Map* at the back of the SJMSCP) is proposed in this zone.

  While nearly devoid of proposed development, the following SJMSCP Covered Plant Species are located almost exclusively in the *Southwest Zone* and the likelihood of protecting these species within SJMSCP Preserves established for the San Joaquin kit fox are much higher than the likelihood of disturbing these species through SJMSCP Permitted Activities: Large-flowered fiddleneck (*Amsinckia grandiflora*), hospital canyon larkspur (*Delphinium californicum* ssp. *interius*), showy madia (*Madia radiata*) and recurved larkspur (*Delphinium recurvatum*). Alkali milk-vetch (*Astragalus tener* var. *tener*), brittlescale (*Atriplex depressa*), Mt. Hamilton coreopsis (*Coreopsis hamiltonii*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), mad-dog skullcap (*Scutellaria lateriflora*), Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*), and caper-fruited tropidocarpum (*Tropidocarpum capparideum*) also have their potential habitat in the *Southwest Zone*, although no known occurrences of these species exist in this zone. Similarly, heartscale (*Atriplex cordulata*) was found historically in the *Southwest Zone*, but has no current records identifying occupied habitat in the County. These species would be protected in the same manner as the other four plant species known to occur in the *Southwest Zone* should they be discovered over the life of the Plan.

  In addition, ensuring that no disturbance will occur to the most narrowly distributed of these species, the SJMSCP Permits prohibit kill of individuals and conversion of occupied habitat for the large-flowered fiddleneck, diamond-petaled California poppy, showy madia and Hospital canyon larkspur unless special findings have been made upon consultation with the Permitting Agencies in accordance with the criteria established in Section 5.5.2.1. Special provisions for pre-construction surveys to ensure identification of these species are included in Section 5.2.2.5(B).

- ***Primary Zone of the Delta*.** SJMSCP Covered Plant Species located in the *Primary Zone of the Delta* are well-documented due to extensive surveys undertaken in this zone by state and federal agencies often associated with the management of water resources in the Sacramento/San Joaquin Delta. In addition, the Delta Protection Act places strict limits on urban development and other SJMSCP Permitted Activities within the *Primary Zone of the Delta*. Therefore, SJMSCP Covered Plant Species in the *Primary Zone of the Delta* are both highly protected by state legislation and are easily located due to extensive study of this region and, as with the *Southwest Zone*, the likelihood of protecting SJMSCP Covered Plant Species within Preserves established for the California black rail and Valley elderberry longhorn beetle is much higher than the likelihood that SJMSCP Covered Plant species in the *Primary Zone of the Delta* will be subject to Incidental Take pursuant to the SJMSCP. The following plants occur almost exclusively in the *Primary Zone of the Delta*: Suisun marsh aster (*Aster lentus*), California hibiscus (*Hibiscus lasiocarpus*), Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), Mason's lilaeopsis (*Lilaeopsis masonii*), Delta mudwort (*Limosella subulata*) and Sanford's arrowhead (*Sagittaria sanfordii*).

  As previously noted, to ensure that no disturbance will occur to narrowly distributed species, the SJMSCP Permits prohibit kill of individuals and conversion of occupied habitat for Sanford's arrowhead unless special findings have been made upon consultation with the Permitting Agencies in accordance with the criteria established in Section 5.5.2.1. 5.5.2.1. Special provisions for pre-construction surveys to ensure identification of this species are included in Section 5.2.2.5(B).

- ***Vernal Pool Zone.*** The Conversion of up to 5,000 acres of vernal pool grasslands to orchards and vineyards, permitted pursuant to a pending U.S. Army Corps of Engineers Federal Clean Water Act Section 404 permit, or equivalent (as described in SJMSCP Section 5.6), is the primary activity anticipated to impact SJMSCP Covered Plant Species associated with vernal pools. This 5,000 acres of vernal pool grasslands contains approximately 707 acres of vernal pools (actual wetted surface area). Of the SJMSCP Covered Plant Species associated with vernal pools, only three are known to occur in San Joaquin County: succulent owl's clover (*Castilleja campestris* ssp. *succulenta*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), and legenere (*Legnere limosa*). The remaining plants have been proposed for coverage due to historical records of the species which are presumed extirpated within the County. The primary emphasis of the SJMSCP with respect to these presumed extirpated species is the potential reintroduction on an experimental basis as part of vernal pool creation efforts to be undertaken by the SJMSCP. These species are: Greene's tuctoria (*Tuctoria greenei*), Hoover's calycadenia (*Calycadenia hooveri*), bristly sedge (*Carex comosa*), and Red Bluff dwarf rush (*Juncus leiospermus*). In addition, due to their rarity, special protocols are required pursuant to Section 5.2.2.5(B) for conducting preconstruction surveys for Greene's tuctoria, legenere and the succulent owl's clover to protect against inadvertent take (i.e., kill of individuals or conversions of occupied habitat) of these species if these species are more widely distributed in the County than anticipated. Therefore, the SJMSCP includes special provisions for locating populations of the rarest of the vernal pool plant species and provides a potential for reintroducing populations for several extirpated vernal pool species in San Joaquin County.

As previously noted, to ensure that no disturbance will occur to narrowly distributed species, the SJMSCP Permits prohibit kill of individuals and conversion of occupied habitat for succulent owl's clover, Greene's tuctoria, and legenere unless special findings have been made upon consultation with the Permitting Agencies in accordance with the criteria established in Section 5.5.2.1.

- ***Central Zone.*** Most SJMSCP Permitted Activities will occur within the *Central Zone*. While the majority of the Central Zone is composed of cultivated lands (i.e., Agricultural rather than Natural Lands), some Natural Lands associated with riparian corridors exists in this zone. These riparian corridors are associated with two plant species: the slough thistle (*Cirsium crassicaule*), and the Delta button-celery (*Eryngium racemosum*). In addition, Sanford's arrowhead is known to occur in this zone.
  As previously noted, to ensure that no disturbance will occur to narrowly distributed species, the SJMSCP Permits prohibit kill of individuals and conversion of occupied habitat for Sanford's arrowhead, slough thistle and Delta button celery unless special findings have been made upon consultation with the Permitting Agencies in accordance with the criteria established in Section 5.5.2.1. 5.5.2.1. Special provisions for pre-construction surveys to ensure identification of this species are included in Section 5.2.2.5(B).

- All *SJMSCP Index Zones*. Based upon development proposals considered by local jurisdictions over the past 25 years, SJMSCP Planners conclude that new non-agricultural developments occurring on Natural Lands (the most likely location for SJMSCP Covered Plant Species) are almost always large developments which require long (i.e., often one year) review processes and preparation of environmental impact reports. Therefore, planners conclude, given the distribution of the SJMSCP Covered Plant Species and Natural Lands in San Joaquin County, approximately 95% of the SJMSCP Permitted Activities which will involve SJMSCP Covered Plant species will involve an environmental review process providing ample time (i.e., at least one year) to conduct both preconstruction surveys during optimal blooming seasons for SJMSCP Covered Plants and to implement appropriate mitigation measures (e.g., seed collections). The exception to this generalization is the Conversion of vernal pool grasslands to orchards and vineyards which is not subject to an environmental review process undertaken by local jurisdictions, but is normally subject to a Section 404 permit review process instead (thereby extending the project review period by a period of time similar to that of an environmental review and allowing for additional survey time).

- All *SJMSCP Index Zones*. In addition to SJMSCP restrictions against kill and Conversion of occupied habitat for ten of the SJMSCP's most narrowly distributed plant species (and, in fact true for all other non-plant SJMSCP Covered Species), two mechanisms are included in the SJMSCP to allow a reevaluation of the procedure for assessing impacts resulting from SJMSCP Permitted Activities (including impacts to SJMSCP Covered Plants) should development patterns within San Joaquin County shift from the patterns described above in paragraphs A-E change:

  1. A requirement for permitting SJMSCP Covered Activities which are unmapped on the *SJMSCP Planned Land Use Map* as described in

SJMSCP Section 3.4; and

2. A requirement for a Major Plan Amendment (Section 8.8.5) to change the urban boundaries as indicated on the *SJMSCP Planned Land Use Map* if that total changes to the boundaries exceed the 5,000 acre annexation allocation provided pursuant to Section 8.2.1(10).

Based on these factors, preconstruction surveys for SJMSCP Covered Plants within the various *SJMSCP Index Zones* shall

A. Be conducted pursuant to the protocols established in Section 5.2.2.5 (A-C) for large-flowered fiddleneck (*Amsinckia grandiflora*); succulent owl's clover (*Castilleja campestris* ssp. *succulenta*) Greene's tuctoria (*Tuctoria greenei*), Delta button celery (*Eryngium racemosum*), Diamond-petaled California poppy (*Escholzia rhombipetala*), showy madia (*Madia radiata*), slough thistle (*Cirsium crassicaule*), legenere (*Legenere limosa*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), and Sanford's arrowhead (*Sagittaria sandfordii*). No kill and no Conversion of occupied habitat for these species is permitted pursuant to the SJMSCP unless the findings of Section 5.5.2.1 are made with the concurrence of the Permitting agencies; or

B. Be undertaken for SJMSCP Covered Plants excluded from the preceding paragraph (A) during the discretionary project's application review process to provide ample opportunities to identify plants during the blooming seasons. The presence of SJMSCP Covered Plant Species can be determined on a project site well in advance of project construction, (with nearly no risk of a new SJMSCP Covered Plant Species moving in before construction), through reviewing the *SJMSCP GIS Database* and other current information sources and, when necessary, by conducting pre-construction surveys. Through this process, the JPA shall conduct pre-construction surveys during appropriate blooming seasons in areas of known SJMSCP Covered Plant Species occurrences or if the area's characteristics are likely to support SJMSCP Covered Plant Species.

C. If SJMSCP Covered Plant Species are identified and will not be fully avoided pursuant to provisions in Section 5.5.9, then seed collection may be undertaken by the JPA if the TAC recommends that such salvage has a high likelihood of resulting in a conservation benefit for the species and construction schedules permit, well in advance of project construction. Seed collection or other identified mitigation measures may occur immediately after or even before project approval with the consent of the landowner.

If SJMSCP Covered Species are identified by preconstruction surveys or are strongly suspected to be present based on the vegetation or habitat types present or if a Natural Land type is present, the JPA shall identify, in writing to the Plan Participant, the Incidental Take Minimization Measures applicable to the project and attach these as conditions of project approval per the procedure described in 5.2.1. All SJMSCP Covered Species identified by the JPA shall be recorded on both California Natural Diversity Database (CNDDB) and *SJMSCP GIS Database* forms, as needed.

When the JPA determines that an SJMSCP Covered Species does or may occur on a particular project site

after completing the preceding process, the JPA will conduct a preconstruction survey prior to ground-disturbing activities to verify that the appropriate Incidental Take Minimization Measures have been implemented to protect individual SJMSCP Covered Species.

The following table shall be used to guide the timing of preconstruction surveys for SJMSCP Covered Plant Species when required as described in the preceding paragraphs. The blooming periods established in Table 5.2-1 represent the widest possible blooming season as compiled from: 1) *California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California*, February, 1994; 2) *CEQA-Defined Or Endangered Plants Currently Known to Occur Along the Waterways of the Sacramento-San Joaquin Delta*, B. Baba, CDFG Region 2, 1994; and 3) *A California Flora and Supplement* by Philip A. Munz; University of California Press, 1973 combined edition. All survey periods may be modified pursuant to the provisions of 5.2.2.5(B)(ii) and 5.2.2.5(C) or, based on updated scientific information evaluated and approved by the JPA with the by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

TABLE 5.2-1
SURVEY WINDOWS FOR SJMSCP COVERED PLANT SPECIES

SJMSCP COVERED PLANT SPECIES	BLOOMING PERIOD/SURVEY PERIOD
Large flowered fiddle-neck (*Amsinckia grandiflora*)	April-May
Suisun Marsh Aster (*Aster lentus*)	Late May through November
Alkali milk-vetch (*Astragalus tener* var. *tener*)	March - June
Heartscale (*Atriplex cordulata*)	May - October
Brittlescale (*Atriplex depressa*)	May - October
Hoover's calycadenia (*Calycadenia hooverii*)	July - September
Bristly sedge (*Carex comosa*)	May - September
Succulent owl's clover (*Castilleja campestris* ssp. *succulenta* fmr. *Orthocarpus succulentus*)	April - May
Slough thistle (*Cirisium crassicaule*)	May - August
Mt. Hamilton coreopsis (*Coreopsis hamiltonii*)	March - May
Hospital canyon larkspur (*Delphinium californicum* ssp. *interius*)	April - June
Recurved larkspur (*Delphinium recurvatum*)	March - May
Delta button celery/Delta coyote thistle (*Eryngium racemosum*)	June - October
Diamond-petaled poppy/Diamond-petaled California Poppy (*Eschscholzia rhombipetala*)	March - June
Bogg's lake hedge hyssop (*Gratiola heterosepala*)	April - June
California hibiscus (*Hibiscus lasiocarpus*)	August-September
Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*)	March - May
Delta tule pea (*Lathyrus jeponsii* var. *jepsonii*)	May - September

Legenere (*Legenere limosa*)	May - June
Mason's lilaeopsis (*Lilaeopsis masonii*)	April - October
Delta mudwort (*Limosella subulata*)	May - August
Showy madia (*Madia radiata*)	March - May
Sanford's arrowhead (*Sagittaria sanfordii*)	May - October
Mad-dog skullcap (*Scutellaria lateriflora*)	May - September
Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*)	May - September
Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)	March - April
Greene's tuctoria (*Tuctoria greenei*)	May - July

5.2.2.5 Preconstruction Survey Methodologies

A. Preconstruction survey methodologies, for preconstruction surveys undertaken in compliance with Section 5.2.2.1(A, Band D) and 5.2.2.2 through 5.2.2.4, and addressing all SJMSCP Covered Species, except as provided in paragraph B, below, shall be of sufficient scope, duration, and intensity to determine the need (or lack of a need) for attaching Incidental Take Minimization Measures as conditions of project approval, obtain a gross determination of habitats present on the site, any species-specific information as may be readily obtained, and the relation of the site to surrounding land uses. Specific methodologies shall be formulated by the JPA with the concurrence of the Permitting Agencies' representatives on the JPA's Technical Advisory Committee (TAC) within one year of issuance of the SJMSCP's associated state and federal permits. Methodologies shall be consistent with the SJMSCP's budget for conducting preconstruction surveys. While qualified biologists shall routinely perform preconstruction surveys, methodologies should avoid approaches which may actually harm or harass individual species thereby requiring time-consuming acquisitions of Section 10(a)(1)(A) permits for those conducting surveys except as otherwise required in 5.2.2.5(F) for the riparian brush rabbit. Methodologies developed will include provisions for assuming the presence of certain SJMSCP Covered Species under circumstances where timing of preconstruction surveys to coincide with the presence of the SJMSCP Covered Species may be prohibitively expensive or result in project delays except as otherwise provided in 5.2.2.5 (B-G) for full avoidance species (large flowered fiddleneck, succulent owl's clover, Greene's tuctoria, Delta button celery, diamond petaled poppy, showy madia, slough thistle, legenere, Hospital Canyon larkspur, Sanford's arrowhead, riparian brush rabbit, riparian woodrat, longhorn fairy shrimp, Conservancy fairy shrimp).

To ensure consistency over time, development of survey methodologies by the JPA and TAC as specified above shall include development of a standardized form to be used in conducting pre-construction surveys. While specific information to be collected is not designated by the Plan, the following data types are recommended:

1. Size of the project site;

2. Site configuration;

3. Adjacent land uses;

4. Habitat types present and acreages of each;

5. Presence of Covered Species on the site as determined by the SJMSCP GIS Database and preconstruction surveys;

6. Overall habitat quality;

7. Presence of exotic, non-native, or invasive vegetation;

8. Presence of roads and other disturbances on or adjacent to the project site;

9. Presence and distance to the nearest permanent Open Space;

10. Presence of any pest or predatory animals on the site; and

11. Any special habitat features on the site (e.g., wetlands, nest trees, dens or burrows, intermittent or perennial streams, unique plants etc.). The JPA and/or the relevant participating jurisdiction shall be informed of any Incidental Take Minimization needs identified, and such requirements shall be made a part of any development permits issued by that jurisdiction, as appropriate (see Section 5.2.1).

B. Preconstruction surveys for the large-flowered fiddleneck (*Amsinckia grandiflora*); succulent owl's clover (*Castilleja campestris* ssp. *succulenta*) Greene's tuctoria (*Tuctoria greenei*), Delta button celery (*Eryngium racemosum*), Diamond-petaled California poppy (*Escholzia rhombipetala*), showy madia (*Madia radiata*), slough thistle (*Cirsium crassicaule*), legenere (*Legenere limosa*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), and Sanford's arrowhead (*Sagittaria sandfordii*) conducted pursuant to Section 5.2.2.1(D) shall, in addition to the requirements in paragraph A,:

i. Be conducted in coordination with a site visit to one of the local reference populations of the species, if available (i.e., permission is required for entry onto private lands), to assess the appearance of the species, its preferred habitat, and if the population is blooming in the vicinity during preconstruction surveys. As of the Effective Date of the SJMSCP, reference sites exist in San Joaquin County for large-flowered fiddleneck (public and private land), diamond-petaled poppy (public land) and succulent owl's clover (public land), legenere and Sanford's arrowhead. No known reference sites exist for Greene's tuctoria, Delta button celery, showy madia, slough thistle or Hospital Canyon larkspur in San Joaquin County as of the Effective Date of the SJMSCP. In the absence of reference sites, the JPA may rely upon species information provided orally either: 1) by species experts consulted from the TAC or, in the absence of such experts, species experts contacted outside of the TAC; or

2) By reports received from area biologists regarding the activities (i.e., blooming periods) of the nearest known locations of Greene's tuctoria, Delta button celery, showy madia, slough thistle or Hospital Canyon larkspur located outside of San Joaquin County.

ii. Except as otherwise provided in this paragraph, surveys shall be conducted during the optimum blooming period for the species as indicated in Table 5.2-1. Up to three site visits will be undertaken to confirm that preconstruction surveys have been undertaken during the blooming period for this species. However, if preconstruction surveys are conducted at the same time as reference populations of this species are known to be blooming in the vicinity for populations inhabiting similar habitats with similar microclimates and the species is not found to be present on the proposed project site, then additional preconstruction survey visits are unnecessary. If approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, the timing of preconstruction surveys may be modified (i.e., the length of survey windows may be reduced) on a case-by-case based upon the TAC's assessment of the season's weather patterns (which may have affected blooming cycles) and the likelihood of species occurrences on a particular site given the specifics of the site's topography, existing land uses, aspect, slope, presence of competing vegetation, soils or other related factors which may have modified the blooming cycle for the species;

iii. If found, the surveyors shall prepare a detailed map indicating the location of the species; describe and photograph (color prints with negatives or color slides) the surrounding habitat including photo reference points, if available; describe adjacent hydrological conditions which may be affecting the population, if applicable; describe the species phenology and microhabitat; record an estimate of the number of individuals of the species per unit area; identify areas of high, medium and low density of the species; provide an estimate the acres of occupied habitat; describe potential threats to the population; and prepare and submit a California Native Species Field Survey Form and submit the form(s) to the Natural Diversity Database.

C. For all SJMSCP Covered Plants, if approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, the timing of preconstruction surveys for SJMSCP Covered Plants may be modified (i.e., the length of survey windows may be reduced) on a case-by-case based upon the TAC's assessment of the season's weather patterns (which may have affected blooming cycles) and the likelihood of species occurrences on a particular site given the specifics of the site's topography, existing land uses, aspect, slope, presence of competing vegetation, soils or other related factors which may have modified the blooming cycle for the species.

D. As required in Section 5.2.4.25, preconstruction surveys for the San Joaquin kit fox shall be conducted two calendar weeks to thirty calendar days prior to commencement of ground disturbance for projects located within the *Southwest Zone* or *Southwest/Central Transition Zone*. Surveys shall be conducted by qualified biologists. When surveys identify potential dens (potential dens are defined as burrows at least four inches in diameter which open up within two feet), potential den entrances shall be dusted for three calendar days to register track of any San Joaquin kit fox present.

E. Preconstruction surveys for the longhorn fairy shrimp and Conservancy fairy shrimp (potentially occurring within the *Southwest Zone*) shall be conducted in compliance with USFWS published

survey protocols in effect at the time of the surveys.

F. Preconstruction surveys for the riparian brush rabbit shall be conducted in compliance with *Survey Methods for Riparian Brush Rabbits* (D.F. Williams, P.A. Kelly-San Joaquin Endangered Species Recovery Program) until and unless the USFWS publishes revised survey protocols. These preconstruction surveys require a special 10(a)(1)(A) permit for the individuals undertaking the surveys.

G. For all SJMSCP Covered Species, preconstruction surveys may be waived based upon a review by the TAC and concurrence by the Permitting Agencies if all potential suitable habitat for SJMSCP Covered Species will be fully avoided pursuant to Section 5.5.9.

H. For projects that impact vernal pool grasslands, preconstruction surveys shall collect information, as described in Section 5.9.4.12 that will be used to evaluate future adjustments of the vernal pool caps (e.g., total acreage of permitted Conversion permitted by the Take permits, annual limits on Conversion of vernal pool grasslands). Specifically, these surveys shall incorporate items from Section 5.9.4.12 (A)(1-6) in preconstruction survey protocols.

5.2.3 INCIDENTAL TAKE MINIMIZATION - OVERVIEW OF PROCESS

Section 10(a)(1)(B) of the Federal Endangered Species Act and Section 2081(b) of the California Endangered Species Act allows the Incidental Take of Covered Species only if Incidental Take Minimization Measures are adopted to minimize the impacts to Covered Species and impacts to Covered Species are mitigated. The following addresses Incidental Take Minimization Measures for all SJMSCP Covered Species. SJMSCP Section 5.5 describes additional measures which may be undertaken in lieu of SJMSCP compensation requirements and in addition to these Incidental Take Minimization Measures. These additional measures have an objective of entirely eliminating impacts of Take to SJMSCP Covered Species (i.e., "full avoidance").

5.2.3.1 Incidental Take Minimization Strategy and Expectations for All SJMSCP Covered Species

The success of the SJMSCP in minimizing impacts to SJMSCP Covered Species, through the implementation of Incidental Take Minimization Measures, is based on the following expectations, presented in the order of their importance:

A. Project Proponents will provide sufficient time when planning for project review and construction schedules as necessary for the implementation of Incidental Take Minimization Measures adequate to avoid the actual Take of SJMSCP Covered Species for most projects undertaken pursuant to the SJMSCP except as otherwise provided in Section 5.2.3.2;

B. Incidental Take Minimization Measures will be identified at the earliest possible opportunity in the project review process by the JPA according to the schedule established in Section 5.2.1.

C. In addition to establishing applicable Incidental Take Minimization Measures, the JPA shall provide an option to a Project Proponent for entirely avoiding impacts to SJMSCP Covered

Species and their habitat on the project site through project redesign pursuant to SJMSCP Section 5.5.9. Wherever complete avoidance of all impacts is successfully achieved on a project site pursuant to the requirements of SJMSCP Section 5.5.9, the SJMSCP Permittees are not responsible for providing compensation pursuant to the requirements of the SJMSCP.

D. Alternatively, the JPA shall pursue acquisition of Preserve lands which are consistent with the Preserve design criteria of the SJMSCP (Section 5.4.4) on project sites where high quality occupied habitat and/or where SJMSCP Covered Species of very limited distribution are present and landowners are willing sellers.

E. The JPA and Permittees will work with Project Proponents to ensure, and to document in accordance with Section 5.9.3.2, that identified Incidental Take Minimization Measures are properly implemented (or other alternatives are pursued as described in C and D above), as prescribed by the SJMSCP, to avoid the actual Take of SJMSCP Covered Species for most projects undertaken pursuant to the SJMSCP;

F. If the Project Proponent has implemented Incidental Take Minimization Measures in accordance with the SJMSCP, and SJMSCP Covered Species remain, reappear, or appear for the first time on the project site despite the proper implementation of Incidental Take Minimization Measures, then the following shall occur:

1. Relocation will be pursued at the discretion of the Permitting Agencies and only under rare circumstances according to the procedures and subject to the criteria established in Section 5.2.5.

2. When relocation is not undertaken (as is expected in the majority of cases), then killing of individuals and Conversion of occupied habitat of the SJMSCP Covered Species may occur unless otherwise prohibited by the SJMSCP.

G. Pursuant to the Migratory Bird Treaty Act (16 USC 703-711), it is unlawful at any time, by any means or in any manner to pursue, hunt, take, capture, kill, attempt to take, capture, or kill any migratory bird, any part, nest, or eggs of any such bird is defined as Take. All SJMSCP Covered Bird Species are subject to the Migratory Bird Treaty Act. Because the SJMSCP is based on the more stringent, federal standard for "Take" pursuant to the ESA which includes modification of habitat, Incidental Take Permits for SJMSCP Covered Bird Species are included in the SJMSCP, to allow for the Conversion of habitat for SJMSCP Covered Bird Species with appropriate creation of compensatory habitat for these species. To fulfill the requirements of the Migratory Bird Treaty Act, however, the Incidental Take Minimization Measures of the SJMSCP for all SJMSCP Covered Bird Species must result in no Take, as Take is defined by the MBTA, of SJMSCP Covered Bird Species. The Incidental Take Minimization Measures in Section 5.2.4 have been designed to avoid Take, as Take is defined by the MBTA, of SJMSCP Covered Bird Species.

H. The golden eagle is the only SJMSCP Covered Species subject to the provisions of the Bald and Golden Eagle Protection Act (U.S.C. Sections 668-668d). Take of individual golden eagles is prohibited by the Bald and Golden Eagle Protection Act. However, because the

SJMSCP is based on the more stringent, federal standard for "Take" pursuant to the ESA which includes modification of habitat, Incidental Take Permits for the golden eagle are included in the SJMSCP, to allow for the Conversion of habitat for the golden eagle with appropriate creation of compensatory habitat for this species. To fulfill the requirements of the Bald and Golden Eagle Protection Act, however, the Incidental Take Minimization Measures of the SJMSCP for the golden eagle have been designed to avoid Take, as Take is defined by the BGEPA, of golden eagles as described in Section 5.2.4.21.

5.2.3.2 Exceptions to Section 5.2.3.1

It is the intent of the JPA and the Permitting Agencies to encourage Project Proponents to retain biological features (e.g., nest trees, roosting sites, wetlands) in project design where the retention of such features may provide chances for the long-term survival of SJMSCP Covered Species at the short-term expense of the SJMSCP Covered Species. Therefore, where Project Proponents have agreed to a request by the JPA to retain biological features for the long-term, in the manner prescribed by the JPA, then the JPA and Permitting Agencies agree that the Project Proponent may proceed with the project's construction schedule even though that construction schedule may result in short-term disturbances (including Take) to SJMSCP Covered Species as a result of retaining biological features.

In addition, it is recognized that unanticipated conditions may arise which make it infeasible to comply with the Incidental Take Minimization strategy established in Section 5.2.3.1.

When a Project Proponent determines that it is infeasible to implement the Incidental Take Minimization Measures as established by the SJMSCP, then the Project Proponent may petition the JPA to consider granting an exception to the Incidental Take Minimization Measures. The Project Proponent shall include in his or her request a detailed description of the compelling reason or reasons for granting such a petition including all necessary documentation to support the request and describing what factors caused the Project Proponent inability to comply with the Incidental Take Minimization Measure or measures.

The JPA may amend or suspend some or all Incidental Take Minimization Measures, with the concurrence of the Permitting Agencies' representatives on the TAC, for a particular project based upon the following findings:

1. It is not possible to implement the Incidental Take Minimization Measures (e.g., the landowner does not own land on one side of a stream and therefore cannot provide 200' buffers on both sides of a stream); and

2. The proposed alternative Incidental Take Minimization Measure(s) reduces the effects of Take at least as much as or more than the SJMSCP's established Incidental Take Minimization Measure(s); or

3. The proposed alternative(s) provide greater chances for the long-term survival of an SJMSCP Covered Species at the expense of limited, short-term biological losses (e.g., retaining a nest tree on a construction site rather than removing the nest tree resulting in reduced fledgling success during the project construction phase, but producing multiple generations of successful fledglings in the nest tree over the long-term); or

4. The provisions of Section 5.2.2.5(B)(ii) or 5.2.2.5(C) apply.

Failure to plan ahead on the part of the Project Proponent, when such planning was within the control of the Project Proponent, shall not be grounds for granting an exception under these provisions.

All exceptions granted for Incidental Take Minimization Measures pursuant to this Section also shall be reported in the SJMSCP Annual Report to the Permitting Agencies as described in Section 5.9.1.

5.2.4 INCIDENTAL TAKE MINIMIZATION MEASURES FOR SJMSCP COVERED SPECIES RECEIVING INCIDENTAL TAKE COVERAGE PURSUANT TO ESA AND CESA AND MITIGATION MEASURES FOR SJMSCP COVERED SPECIES RECEIVING CEQA COVERAGE

5.2.4.1 Valley Elderberry Longhorn Beetle (VELB)

In areas with elderberry bushes, as indicated by the *SJMSCP Vegetation Maps* or per a preconstruction survey identification or other sources indicated in Section 5.2.2.3, the following shall occur:

A. If elderberry shrubs are present on the project site, a setback of 20 feet from the dripline of each elderberry bush shall be established.

B. Brightly colored flags or fencing shall be placed surrounding elderberry shrubs throughout the construction process.

C. For all shrubs without evidence of VELB exit holes which cannot be retained on the project site as described in A and B, above, the JPA shall, during preconstruction surveys, count all stems of 1" or greater in diameter at ground level. Compensation for removal of these stems shall be provided by the JPA within SJMSCP Preserves as provided in *SJMSCP Section 5.5.4(B)*.

D. For all shrubs with evidence of VELB exit holes, the JPA shall undertake transplanting of elderberry shrubs displaying evidence of VELB occupation to VELB mitigation sites during the dormant period for elderberry shrubs (November 1 - February 15). For elderberry shrubs displaying evidence of VELB occupation which cannot be transplanted, compensation for removal of shrubs shall be as provided in *SJMSCP Section 5.5.4 (C)*.

5.2.4.2 Moestan and Molestan Blister Beetle

The biology of these species is poorly known, but the species are presumed to be extant and may be discovered in annual grasslands, foothill woodlands or saltbush (Atriplex) scrub which remain in patches within the historical occupation site of these species. Therefore, if discovered on a project site and prior to ground disturbance, Incidental Take Minimization Measures shall be formulated by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.3 Ciervo Aegialian Scarab Beetle

This species is presumed to be extirpated, because its habitat, sand dunes, have been destroyed in the County. However, if rediscovered on a project site and prior to ground disturbance, Incidental Take Minimization Measures shall be formulated by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.4 Vernal Pool Plants and Vernal Pool Invertebrates

Full avoidance of succulent owl's clover, legenere, Greene's tuctoria, longhorn fairy shrimp and Conservancy fairy shrimp is required by the SJMSCP in accordance with the full avoidance measures in Section 5.5.9. For all other vernal pool plants and vernal pool invertebrates:

A. Filling vernal pools shall be delayed until pools are dry and samples from the top layer of vernal pools soils are collected. Soil collections shall be sufficient to include a representative sample of plant and animal life present in the pools by incorporating seeds, cysts, eggs, spores and similar inoculum.

B. Collected soils shall be dried and stored in pillow cases labeled with the date and location of soils collected. Soils will be deposited with the JPA. The JPA shall retain the soils in a cool, dry area and shall be responsible for providing soils to vernal pool construction managers for inoculating newly created vernal pools on Preserve lands.

C. Preconstruction surveys, conducted in compliance with U.S. Fish and Wildlife Service protocols [as required in Section 5.2.2.5(E)] approved and in place at the time the surveys are conducted, shall be conducted to determine the presence or absence of Conservancy and/or longhorn fairy shrimp within vernal pools or other wetlands located southwest of I-580 in the *Southwest Zone* unless avoidance of vernal pools and/or wetlands is achieved in compliance with SJMSCP Section 5.5.9.

5.2.4.5 California Tiger Salamander and Western Spadefoot Toad in Association with Projects that Require a Permit Pursuant to Section 404 of the Federal Clean Water Act

Incidental Take Minimization Measures apply to known California tiger salamander occurrences. All required minimization measures will be prescribed through technical assistance provided to the U.S. Army Corps of Engineers by the U.S. Fish and Wildlife Service of Nationwide and standard permitting within the SJMSCP Permit Area, concurrent with formal consultations conducted for listed vernal pool species, or through the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. The approach to impact minimization measures outlined in this section of the SJMSCP for California tiger salamander will provide the framework for Corps 404 permit streamlining described further in SJMSCP Section 5.6.1. Specific measures for impact minimization will be based on the framework provided in the SJMSCP. The JPA intends that the SJMSCP will provide an option for project applicants to meet some or all of the compensation requirements assessed as part of the 404 regulatory process for California tiger salamander, should this species become federally listed.

The measures will be based on the need to avoid and minimize impacts to breeding, feeding, and sheltering behaviors of California tiger salamander (See SJMSCP Chapter 2), and will include, but not be limited to, consideration of the following: a) effects to aquatic habitat, including retaining pools and maintaining appropriate pool hydrology to enable successful metamorphosis of larvae to occur, but which does not foster non-native aquatic predators; b) retention of small mammal burrows and other suitable estivation habitat (e.g., underground holes, cracks, or niches) in adjacent uplands; c) maintenance of open habitat between breeding ponds and estivation sites (e.g., roads and other linear barriers) can increase mortality or even prevent migrations and dispersal significantly increasing harm to and mortality of salamanders); d) siting replacement wetland habitat, whenever possible, within approximately 1.5 miles of other known breeding sites.

In potential California tiger salamander habitat, projects shall survey according to the current protocol approved by the TAC and the Permitting Agencies. If salamanders are detected, Incidental Take Minimization Measures shall be applied.

5.2.4.6 California Tiger Salamander, Western Spadefoot Toad - in Association with Projects that Do Not Require a Federal Clean Water Act Section 404 Permit

To minimize impacts and Take of California tiger salamander, the following measures should be implemented for SJMSCP Covered Activities not requiring a Federal Clean Water Act Section 404 Permit:

A. Retain known breeding sites.

B. In potential California tiger salamander habitat, projects shall survey according to the current protocol approved by the TAC and the Permitting Agencies' representatives on the TAC. If salamanders are detected, Incidental Take Minimization Measures shall be applied.

C. If a proposed project intends to eliminate aquatic habitat (including wetlands, ponds, springs and other standing water sources), and create a new, on-site habitat, then the newly created habitat shall be created and filled with water prior to dewatering and destroying the pre-existing habitat. Dewatering and relocation of aquatic habitats on-site should occur when the water source is dry under natural conditions, or otherwise outside of the full breeding season for tiger salamanders (December to June) to allow larvae to metamorphose and migrate to upland habitat.

D. If a proposed project intends to eliminate aquatic habitat including wetlands, ponds, springs and other standing water sources, and will not create a new, on-site habitat, then dewatering should occur prior to commencement of construction and other Site Disturbing Activities. Dewatering and relocation of aquatic habitats should occur outside of the time period when adult salamanders are breeding (approximately December to February).

E. Apply those other measures that are utilized to minimize impacts and Take of the California tiger salamander that are developed as described in 5.2.4.5 above. Those other measures will address: a) effects to aquatic habitat, including retaining pools and maintaining appropriate pool hydrology to enable successful metamorphosis of larvae to occur, but which does not foster non-native aquatic predators; b) retention of small mammal burrows and other suitable estivation habitat (e.g., underground holes, cracks, or niches) in adjacent

uplands; c) maintenance of open habitat between breeding ponds and estivation sites (e.g., roads and other linear barriers can increase mortality or even prevent migrations and dispersal significantly increasing harm to and mortality of salamanders); d) siting replacement wetland habitat, whenever possible, within approximately 1.5 miles of other known breeding sites.

5.2.4.7 Red-Legged Frogs and Foothill Yellow-Legged Frogs

Red-legged frogs and foothill yellow-legged frogs occur in the creeks and wetlands in foothill areas. Red-legged frogs and foothill yellow-legged frogs do not occur on the valley floor. Therefore, the following Incidental Take Minimization Measures apply to the eastern foothills (primarily in the *Vernal Pool Zone*) and the *Southwest Zone* only where new development is proposed on parcels with creeks, rivers or wetlands, especially ponds:

A. A 300 foot setback, incorporating both riparian vegetation and uplands, shall be provided on both sides of creeks and on all sides of wetlands (for a total of 600 feet in setbacks) occupied by red-legged frogs or yellow-legged frogs identified through pre-construction surveys conducted by the JPA or documented in the *SJMSCP GIS Database*. These 300' setbacks shall be measured horizontally from the top of the bank and shall extend the entire length of the stream (or other linear wetlands) within the boundaries of the project site. These setbacks may be reduced by the TAC with the concurrence of the Permitting Agencies' representative on the TAC if the reduction: 1) does not affect habitat (e.g., the stream becomes piped and travels underground) or 2) the reduction will not result in an adverse impact to the species or reduction in the biological values of the habitat. Setbacks shall maintain existing vegetation free of disturbance and be free of new construction, new wells, storage or parking of equipment or materials, and other activities which compact or disturb soils or vegetation or which could introduce contaminants into the aquatic habitat. Setbacks shall be delineated by flagging or brightly colored temporary fencing during the construction process. Setbacks shall be indicated on final maps and include a map note referencing prohibitions within the setbacks. For entitlements which do not include a map, the condition shall be enforced through the recordation of an easement referencing prohibitions within the setback. The JPA may approve alternative methods of enforcing the provisions of the setback with the concurrence of the Permitting Agency representatives on the TAC.

B. Water quality within creeks and wetlands inhabited by red-legged frogs or foothill yellow-legged frogs shall be maintained through implementation of appropriate erosion control measures to reduce siltation and contaminated runoff from project sites (e.g., by maintaining vegetation within buffers and/or through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents).

C. Construction and other ground disturbances shall be prohibited within established setbacks. The use of insecticides, herbicides, rodenticides and pesticides within established setbacks shall occur in accordance with U.S. Environmental Protection Agency guidelines (Appendix A) addressing the use of these materials in occupied California red-legged frog habitat and, if applicable, any additional requirements as established by the San Joaquin County

Agricultural Commissioner.

D. All on-site construction personnel shall be given instruction regarding the presence of listed species and the importance of avoiding impacts to these species and their habitats.

E. Setbacks shall be marked by brightly colored fencing or flagging throughout the construction process.

F. Setbacks shall be permanently preserved as recorded easements. Easements shall be indicated on recorded maps, whenever projects involve parcel or subdivision maps.

Proposals by Project Proponents to implement either of the following Incidental Take Minimization Measures requires the review and approval of the JPA with the concurrence of the Permitting Agencies' representatives on the TAC:

G. If a proposed project intends to eliminate aquatic habitat including wetlands, ponds, springs and other standing water sources, and create a new, on-site habitat, then the newly created habitat shall be created and filled with water prior to dewatering and destroying the pre-existing habitat. Dewatering and relocation of aquatic habitats should occur outside of the breeding season for red-legged frogs (approximately January through May) and foothill yellow-legged frogs (approximately March through May) when this schedule can be accommodated without resulting in project delays.

H. If a proposed project intends to eliminate aquatic habitat including wetlands, ponds, springs and other standing water sources, and will not create a new, on-site habitat, then dewatering should occur prior to commencement of construction and other Site Disturbing Activities. Dewatering and relocation of aquatic habitats should occur outside of the breeding season for red-legged frogs (approximately January through May) and foothill yellow-legged frogs (approximately March through May) when this schedule can be accommodated without resulting in project delays.

Pursuant to Section 5.5.5, SJMSCP Preserve lands acquired to offset impacts to the red-legged frog or yellow-legged frog must have occupied habitat for the red-legged frog or yellow-legged frog of at least equal habitat value as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

5.2.4.8 Giant Garter Snake

A. Full avoidance of giant garter snake known occupied habitat is required in compliance with Section 5.5.9 (C) for the following SJMSCP Covered Activities with the potential to adversely affect the GGS and which have not been mapped: golf courses; religious assembly; communications services; funeral; internment services; public services - police, fire and similar; projects impacting channel or tule island habitat; major impact projects including landfills, hazardous waste facilities, correctional institutions and similar major impact projects; recreational trails and campgrounds, recreational outdoors sports clubs; utility services, museums and similar facilities. Known occupied habitat for

the giant garter snake is that area west of I-5 on Terminous Tract, Shin Kee Tract, White Slough Wildlife Area, and Rio Blanco Tract. New sites identified during the life of the SJMSCP as confirmed habitat sites for the giant garter snake shall be considered known occupied sites for the purposes of this section.

B. For areas with potential giant garter snake habitat, the following is required. Potential GGS habitat elements are described in SJMSCP Section 2.2.2.2 and exist in the *Primary Zone of the Delta* and the Central Zone contiguous with known occupied habitat in the White Slough area north to the San Joaquin/Sacramento County line and south to Paradise Cut; in the Central Zone east of Stockton in Duck Creek, Mormon Slough, Stockton Diverting Canal, Little John's Creek, Lone Tree Creek, and French Camp Slough (wherever habitat elements are present); and the Southern Centerl Zone and Southwest/ Central Transition Zone including the area east of J4 from the Alameda-San Joaquin County Line to Tracy and area south of Tracy and east of Interstate 580 to the east edge of Agricultural Habitat Lands east of the San Joaquin River.

1. Construction shall occur during the active period for the snake, between May 1 and October 1. Between October 2nd and April 30th, the JPA, with the concurrence of the Permitting Agencies' representatives on the TAC, shall determine if additional measures are necessary to minimize and avoid take.

2. Limit vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat to the minimal area necessary.

3. Confine the movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat to existing roadways to minimize habitat disturbance.

4. Prior to ground disturbance, all on-site construction personnel shall be given instruction regarding the presence of SJMSCP Covered Species and the importance of avoiding impacts to these species and their habitats.

5. In areas where wetlands, irrigation ditches, marsh areas or other potential giant garter snake habitats are being retained on the site:

    a. Install temporary fencing at the edge of the construction area and the adjacent wetland, marsh, or ditch;

    b. Restrict working areas, spoils and equipment storage and other project activities to areas outside of marshes, wetlands and ditches; and

    c. Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.

6. If on-site wetlands, irrigation ditches, marshes, etc. are being relocated in the vicinity: the newly created aquatic habitat shall be created and filled with water prior to dewatering and

destroying the pre-existing aquatic habitat. In addition, non-predatory fish species that exist in the aquatic habitat and which are to be relocated shall be seined and transported to the new aquatic habitat as the old site is dewatered.

7. If wetlands, irrigation ditches, marshes, etc. will not be relocated in the vicinity, then the aquatic habitat shall be dewatered at least two weeks prior to commencing construction.

8 Pre-construction surveys for the giant garter snake (conducted after completion of environmental reviews and prior to ground disturbance) shall occur within 24 hours of ground disturbance.

9. Other provisions of the *USFWS Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat* shall be implemented (excluding programmatic mitigation ratios which are superceded by the SJMSCP's mitigation ratios).

5.2.4.9 San Joaquin Whipsnake, California Horned Lizard

These species are of very limited distribution within the County, primarily isolated locations outside of anticipated development areas within the *Southwest Zone*. Therefore, if discovered on a project site and prior to ground disturbance, Incidental Take Minimization Measures shall be formulated by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.10 Pond Turtles

When nesting areas for pond turtles are identified on a project site, a buffer area of 300 feet shall be established between the nesting site (which may be immediately adjacent to wetlands or extend up to 400 feet away from wetland areas in uplands) and the wetland located near the nesting site. These buffers shall indicated by temporary fencing if construction has or will begin before nesting periods are ended (the period from egg laying to emergence of hatchlings is normally April to November).

5.2.4.11 Swainson's Hawk

The Project Proponent has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting) or removing the nest trees.

If the Project Proponent elects to retain a nest tree, and in order to encourage tree retention, the following Incidental Take Minimization Measure shall be implemented during construction activities:

If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest.

If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.12 California Black Rail

A. Prohibit construction or similar activities on channel or tule islands (I,I2), fresh emergent wetlands (W7), and arroyo willow thickets (R4), within the Primary Zone of the Delta until a preconstruction survey determines that the island is unoccupied by the California black rail.

B. In cases where project approvals may result in an increase in boating or jet skiing near known breeding sites for this species during the breeding season (e.g., proposals including new marinas), a condition of project approval shall be attached to require the location of the new marinas no closer than 200 feet from known breeding site when such sites are or have been occupied by breeding California black rails within the past three years. In addition, approaches into and out of new marinas shall be posted by the Project Proponent (as a condition of project approval) or, if otherwise designated by law, by a local, state or federal agency (e.g., the Division of Boating and Waterways) "no wake speed" within 300 feet of occupied breeding sites for the California black rail during breeding season. Information related to the breeding season for California black rails is sparse, but the breeding season for the California black rail is believed to extend from February 1st through August 30th. Therefore, requirement for "no wake speed" into and out of new marinas due to the presence of breeding California black rails is not required from September 1 through January 30th.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.13 Bank Swallow and Yellow-Billed Cuckoo

If the JPA discovers nesting bank swallows or nesting yellow-billed cuckoos during preconstruction surveys or from other sources, construction avoidance areas shall be enforced for a distance of 300 feet from the nest sites until young bank swallows or yellow-billed cuckoos have fledged and left the nesting site.

These Incidental Take n Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.14 Aleutian Canada Goose and Greater Sandhill Crane

Under normal conditions, the Aleutian Canada goose and greater sandhill crane are found foraging in fields that are flooded, newly disced, cut, or irrigated during the fall migration of waterfowl along the Pacific Flyway. These two species are highly mobile while they forage and can easily relocate to nearby foraging sites in the event of a disturbance to the foraging field. The risk of actually killing or harming (Taking) one of these species during SJMSCP Permitted Activities is therefore nearly non-existent. The threat to these species is more closely associated with removing habitat in sufficient quantities to create adverse impacts to populations of these species--an impact addressed by the SJMSCP through acquisition and enhancements of habitat (see Sections 5.4.4 and 5.4.6). Therefore, Incidental Take Minimization Measures for the Aleutian Canada goose and the greater sandhill crane are not included in the SJMSCP and this is considered to be consistent with the provisions of the Migratory Bird Treaty Act.

5.2.4.15 Burrowing Owls

The presence of ground squirrels and squirrel burrows are attractive to burrowing owls. Burrowing owls may therefore be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the Project Proponent should prevent ground squirrels from occupying the project site early in the planning process by employing one of the following practices:

A. The Project Proponent may plant new vegetation or retain existing vegetation entirely covering the site at a height of approximately 36" above the ground. Vegetation should be retained until construction begins. Vegetation will discourage both ground squirrel and owl use of the site.

B. Alternatively, if burrowing owls are not known or suspected on a project site and the area is an unlikely occupation site for red-legged frogs, San Joaquin kit fox, or tiger salamanders:

The Project Proponent may disc or plow the entire project site to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed through one of the following approved methods to prevent reoccupation of the project site. Detailed descriptions of these methods are included in Appendix A, *Protecting Endangered Species, Interim Measures for Use of Pesticides in San Joaquin County*, dated March, 2000:

1. **Anticoagulants.** Establish bait stations using the approved rodenticide anticoagulants Chlorophacinone or Diphacinone. Rodenticides shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

2. **Zinc Phosphide.** Establish bait stations with non-treated grain 5-7 calendar days in advance of rodenticide application, then apply Zinc Phosphide to bait stations. Rodenticides shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

3. **Fumigants.** Use below-ground gas cartridges or pellets and seal burrows. Approved fumigants include Aluminum Phosphide (Fumitoxin, Phostoxin) and gas cartridges sold by the local Agricultural Commissioner's office. NOTE: Crumpled newspaper covered with soil is often an effective seal for burrows when fumigants are used. Fumigants shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

4. **Traps.** For areas with minimal rodent populations, traps may be effective for eliminating rodents. If trapping activities are required, the use of , shall be consistent with all applicable laws and regulations.

If the measures described above were not attempted or were attempted but failed, and burrowing owls are known to occupy the project site, then the following measures shall be implemented:

C. During the non-breeding season (September 1 through January 31) burrowing owls occupying the project site should be evicted from the project site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct., 1995)

D. During the breeding season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided with a 75 meter protective buffer until and unless the TAC, with the concurrence of the Permitting Agencies' representatives on the TAC; or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.16 Colonial Nesting Birds (Tricolored Blackbird, Black-Crowned Night Heron, Great Blue Heron)

Acquisition of colonial nesting sites for these species is a high priority of the SJMSCP. Project Proponents shall be informed of avoidance measures which eliminate compensation requirements for disturbance of colonial nesting areas in project design, as described in Section 5.5.9. If the Project Proponent rejects acquisition and avoidance, pursuant to Section 5.5.9, then the following Incidental Take Minimization Measure shall apply:

A setback of 500 feet from colonial nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.17 Ground Nesting or Streamside/Lakeside Nesting Birds (Northern Harrier, Horned Lark, Western Grebe, Short-Eared Owl)

A setback of 500 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.18 Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Areas (Sharp-Shinned Hawk, Yellow Warbler, Loggerhead Shrike

A setback of 100 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.19 Birds Nesting Along Riparian Corridors (Cooper's Hawk, Yellow-Breasted Chat, Osprey, White-Tailed Kite)

A. For white-tailed kites, preconstruction surveys shall investigate all potential nesting trees on the project site (e.g., especially tree tops 15-59 feet above the ground in oak, willow, eucalyptus, cottonwood, or other deciduous trees), during the nesting season (February 15 to September 15) whenever white-tailed kites are noted on site or within the vicinity of the project site during the nesting season.

B. For the Cooper's hawk, yellow-breasted chat, osprey and white-tailed kite, a setback of 100 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.20 Bell's Sage Sparrow, Snowy Egret, Prairie Falcon, American White Pelican, Double-Crested Cormorant, White-Faced Ibis, Long-billed Curlew

These species either establish nests outside of anticipated development areas or are currently unknown to nest within the County. However, if a nest for one of these species is discovered on a project site, Incidental Take Minimization Measures shall be formulated prior to ground disturbance by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.21 Golden Eagle

When a site inspection indicates the presence of a nesting golden eagle, a setback of 500 feet from the nesting area shall be established and maintained during the nesting season (normally approximately February 1 - June 30) for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G) and are consistent with the provisions of the Bald and Golden Eagle protection act as described in Section 5.2.3.1(H).

5.2.4.22 Ferruginous Hawk, Mountain Plover, Merlin, Long-Billed Curlew

These species currently do not nest in the County and are not expected to nest in the County over the life of the Plan. Therefore, in the highly unlikely event that one of these species is found nesting on a project site, Incidental Take Minimization Measures shall be formulated prior to ground disturbance by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

Incidental Take Minimization Measures adopted pursuant to Section 5.9.4 shall be consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G)

5.2.4.23 Riparian Brush Rabbit

A. Occupied Habitat. Kill of individual riparian brush rabbits and Conversion of occupied habitat for the riparian brush rabbit is prohibited by the SJMSCP unless the provisions of SJMSCP Section 5.5.2.7 have been met. Full avoidance of the riparian brush rabbit is required in areas of known occupied riparian brush rabbit habitat in accordance with Section 5.5.9(I). Known occupied habitat for the riparian brush rabbit is: the vegetation types R, R2, R3, R4, R5, S, SG, D, W, W2, W3, W4, W5 and W9 (unlined) located within Caswell State Park and along the adjoining Stanislaus River; and surrounding Stewart Tract including Paradise Cut and the adjacent Union Pacific Railroad Company right-of-way on Stewart Tract, Old River adjacent to Stewart Tract, and the San Joaquin River as it bounds Stewart Tract. Additional populations of the riparian brush rabbit identified after the Effective Date of the SJMSCP Permits by the JPA or the Permitting Agencies shall become known occupied riparian brush rabbit habitat.

B. Potential Habitat. Conversion of Potential habitat for the riparian brush rabbit is prohibited by the SJMSCP unless: 1) the provisions of Paragraph C (below) apply; 2) the provisions of SJMSCP Section 5.5.2.7 have been met; or 3) a survey, conducted pursuant to the protocol established in *Survey Methods for Riparian Brush Rabbits* (by D.F. Williams and P.A. Kelly - San Joaquin Valley Endangered Species Recovery Planning Program) is undertaken and proves absence for this species. If absence is established by the survey, then the incidental take minimization measures for riparian habitat, established in SJMSCP Section 5.2.4.31 shall apply.

Potential riparian brush rabbit habitat is: the vegetation types R, R2, R3, R4, R5, S, SG, D, W, W2, W3, W4, W5 and W9 (unlined) located along the Stanislaus River downstream of Highway 99 to the junction with the San Joaquin River and riparian habitat along the San Joaquin River downstream of the mouth of the Stanislaus River north to and including Tom Paine Slough and Paradise Cut to the Southern Pacific railroad right-of-way.

C. Limited Take. Incidental Take of up to three acres of potential riparian brush rabbit habitat may occur pursuant to the SJMSCP for projects which meet all of the following criteria:

A. SJMSCP Covered Activities excluding residential, commercial or industrial development and aggregate mining.
B. Impact less than .25 acres of habitat on a per-project basis; and
C. Result in no harm, injury, or harassment of individual brush rabbits

5.2.4.24 Riparian Woodrat

A. Occupied Habitat. Kill of individual riparian woodrats and Conversion of occupied habitat for the riparian woodrat is prohibited by the SJMSCP unless the provisions of SJMSCP Section 5.5.2.7 have been met. Full avoidance of the riparian woodrat is required in areas of known occupied riparian brush rabbit habitat in accordance with Section 5.5.9(I). Occupied habitat for the riparian woodrat includes the vegetation types R, R2, R3, R4, R5, S, SG, D, W, W2, W3, W4, W5 and W9 (unlined) surrounding Caswell Park along the Stanislaus River and extending along the Stanislaus River west from Caswell Park to the confluence of the Stanislaus River with the San Joaquin River in San Joaquin County. Additional populations of the riparian woodrat identified after the Effective Date of the SJMSCP Permits by the JPA or the Permitting Agencies shall become known occupied riparian woodrat habitat.

B. Potential Habitat. Conversion of Potential habitat for the riparian woodrat is prohibited by the SJMSCP unless: 1) the provisions of Paragraph C (below) apply; 2) the provisions of SJMSCP Section 5.5.2.7 have been met; or 3) a survey, conducted pursuant to the protocol established in *Survey Methods for Riparian Brush Rabbits* (by D.F. Williams and P.A. Kelly - San Joaquin Valley Endangered Species Recovery Planning Program) is undertaken and proves absence for this species. If absence is established by the survey, then the incidental take minimization measures for riparian habitat, established in SJMSCP Section 5.2.4.31 shall apply.

Potential habitat for the riparian woodrat is the same as that for the riparian brush rabbit.

C. Limited Take. Incidental Take of up to three acres of potential riparian woodrat habitat may occur pursuant to the SJMSCP for projects which meet all of the following criteria:

A. SJMSCP Covered Activities excluding residential, commercial or industrial development and aggregate mining.
B. Impact less than .25 acres of habitat on a per-project basis; and
C. Result in no harm, injury or harassment of individual riparian woodrats

5.2.4.25 San Joaquin Kit Fox

Preconstruction surveys shall be conducted two calendar weeks to thirty calendar days prior to commencement of ground disturbance for projects located within the *Southwest Zone* or *Southwest/Central Transition Zone*. Surveys shall be conducted by qualified biologists. When surveys identify potential dens (potential dens are defined as burrows at least four inches in diameter which open up within two feet), potential den entrances shall be dusted for three calendar days to register track of any San Joaquin kit fox present. If no San Joaquin kit fox activity is identified, potential dens may be destroyed. If San Joaquin kit fox activity is identified, then dens shall be monitored 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, the den may be destroyed when the adult fox has moved or is temporarily absent. If the den is a natal den, a buffer zone of 250 feet shall be maintained around the den 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 *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* 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.

It is possible that the Permitting Agencies could discover the San Joaquin kit fox within the eastern foothills of San Joaquin County, (this potential range in the eastern foothills would most likely coincide approximately with the boundaries of the *Vernal Pool Zone*, excluding that area of the *Vernal Pool Zone* located in the northern portion of San Joaquin County). San Joaquin kit fox also may move within the *Primary Zone of the Delta* west of Old River. The TAC shall work with the USFWS to prepare an abbreviated survey protocol for these areas in the *Vernal Pool Zone* and *Primary Zone of the Delta* within one year of issuance of SJMSCP Permits pursuant to SJMSCP Sections 5.2.2.1 through 5.2.2.4.

Protocols for conducting pre-construction surveys for the San Joaquin kit fox shall be updated in accordance with the SJMSCP Adaptive Management Plan to reflect changes to the *Standardized Recommendations for Protection of the San Joaquin kit fox Prior to or During Ground Disturbance*.

5.2.4.26 American Badger, Ringtail Cat

If occupied dens are located on a project site for either of these species, then dens shall be monitored to determine if occupation is by an adult badger or ringtail only or is a natal den. If the den is occupied by an adult only the den may be destroyed when the adult has moved or is temporarily absent. If the den is a natal den, a buffer zone of 200 feet shall be maintained around the den until the JPA biologist determines that den has been vacated.

5.2.4.27 Berkeley Kangaroo Rat, San Joaquin pocket mouse

These species are located primarily in the Southwest Zone outside of anticipated development areas. However, if these species are discovered on a project site, Incidental Take Minimization Measures shall be formulated by prior to ground disturbance the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.28 Bats (All)

A. Prior to the nursery season indicated in the following table for these species, nursery sites shall be sealed.

TABLE 5.2-2
OCCUPATION SITES AND NURSERY SEASONS FOR SJMSCP COVERED BATS

Bat Species	Preferred Occupation Site	Nursery Season
Greater western mastiff bat	Cliff or rock crevice (usual), tree or snag (occasionally)	April - September
Small-footed myotis	Cave, adit, cliff, rock crevice, building	May - August
Long-eared myotis	Cave, adit, tree, snag	May - August
Fringed myotis	Cave, adit, cliff, rock crevice, building	May - August
Long-legged myotis	Cave, adit, cliff, rock crevice, tree, snag, building	May - August
Red bat	tree, snag, cave (occasionally)	May - August
Yuma myotis	Cave, adit, cliff, rock crevice, structure, cistern, bridge, tree, snag	May - August
Pale big-eared bat	Cave, adit, cliff, rock crevice, structure, cistern, bridge	May - August
Pacific western big-eared bat (aka Townsend's western big-eared bat)	Cave, adit, cliff, rock crevice, structure, cistern, bridge	April - August

B. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the project site. Alternatively, grating may be installed as

described in 5.5.9(E)(1).

C. When colonial roosting sites which are located in trees or structures must be removed, removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site unless otherwise approved pursuant to Section 5.2.3.2.

5.2.4.29 Plants

I. Complete avoidance of plant populations on site is required for the following plant species in accordance with the identified measures in Section 5.5.9(F):

Large-flowered fiddleneck, succulent owl's clover, legenere, Greene's tuctoria, diamond-petaled poppy, Sanford's arrowhead, Hospital Canyon larkspur, showy madia, Delta button celery, Slough thistle.

II If one of the following SJMSCP Covered Plant Species is identified by the JPA on a project site, the following mitigation measures are required:

A. For widely distributed plant species: Mason's lilaeopsis, California hibiscus, Suisun marsh aster, Delta tule pea, Delta mudwort:

Attempt acquisition. If the plant population is considered healthy by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, then the parcel owner shall be approached to consider selling a conservation easement including a buffer area as prescribed in Section 5.4.4 and sufficient to maintain the hydrological needs of the plants. Alternatively, the landowner may be approached to consider land dedication in-lieu of paying SJMSCP development fees. If the Project Proponent is not agreeable to acquisition , then compensation shall be as prescribed in SJMSCP Section 5.3.1.

B. For plants of moderate distribution: Bogg's lake hedge hyssop:

1. **Attempt acquisition.** If the plant population is considered healthy by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, then the parcel owner shall be approached to consider selling a conservation easement including a buffer area as prescribed in Section 5.4.4 and sufficient to maintain the hydrological needs of the plants. Alternatively, the landowner may be approached to consider land dedication in-lieu of paying SJMSCP development fees. If the Project Proponent is not agreeable to acquisition, compensation shall be as prescribed in SJMSCP Section 5.3.1.

2. **Seed Collection.** If the landowner rejects acquisition , then the JPA, with the concurrence of the Permitting Agencies' representatives on the TAC, shall undertake seed collections from the populations prior to destruction if seed collection is determined to be feasible, beneficial and/or appropriate by the TAC.

C. For narrowly distributed plant species: Hoover's calycadenia, Red Bluff dwarf rush, bristly sedge, alkali milk vetch, heartscale, brittlescale, Mt. Hamilton coreopsis, mad-dog skullcap, Wright's trichocoronis, caper-fruited tropidocarpum, and recurved larkspur:

1. **Attempt acquisition.** If the plant population is considered healthy by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC , then the parcel owner shall be approached to consider selling a conservation easement including a buffer area as prescribed in Section 5.4.4 and sufficient to maintain the hydrological and ecological (e.g., account for weed control, buffers, inclusion of pollinators) needs of the plants. Alternatively, the landowner may be approached to consider land dedication in-lieu of paying SJMSCP development fees.

2. **Consultation.** If the landowner rejects acquisition of the population, then the JPA shall, with the concurrence of the Permitting Agencies' representatives on the TAC, determine the appropriate mitigation measures (e.g., seed collection) for each plant population based upon the species type, relative health and abundance.

5.2.4.30 SJMSCP Covered Fish

Impacts to fish are addressed under the SJMSCP primarily through Incidental Take Minimization Measures; SJMSCP Permitted Activities are not expected to significantly alter habitats of SJMSCP Covered Fish Species

Incidental Take Minimization Measures for SJMSCP Covered Fish are the same as those included for protection of riparian habitats in SJMSCP Section 5.2.4.31, except that, pursuant to Section 5.7(5) for Aggregate Mining Activities, Project Proponents are required to consult with Permitting Agencies on a case-by-case basis during the SMARA permitting process to design minimization measures to reduce the effects of stranding of the SJMSCP Covered Fish Species during mining activities.

5.2.4.31 Riparian Habitats and Other Non-Vernal Pool Wetlands

For the purposes of implementing Incidental Take Minimization Measures, riparian habitats and "other non-vernal pool wetlands" shall be considered to be those habitats mapped on the *SJMSCP Vegetation Maps* as D (drainage ditch), R (Great Valley riparian forest), R2 (Great Valley Valley oak riparian forest), R3 (Great Valley cottonwood riparian forest), R4 (Arroyo willow thicket), S (Great Valley riparian scrub), S2 (Elderberry savannah), W (River or deep water channel - greater than 200 feet wide), W2 (Tributary stream - 100 to 200 feet wide), W3 (Creek - 20 to 100 feet wide), W4 (dead-end slough), W9 (Canal - if not cement lined), I (channel island), I2 (tule island and mud flat), W5 (freshwater lake or pond), W7 (freshwater emergent wetland).

The compensation requirements of the SJMSCP shall be triggered when the project design disturbs portions of the project site located within 100 feet of the outer edge of the driplines of riparian vegetation. For the purposes of accounting pursuant to the Annual Report (Section 5.9.1), Open Space Conversion acreage subject to the SJMSCP shall be calculated from the point at which a development extends into the 100 foot buffer to the centerline of the subject drainage (other than a river). For rivers, lakes, or ponds, Incidental

Take shall be calculated from the edge of the 100 foot buffer zone to the edge of the riparian vegetation as it extends into the river, lake, or pond.

For projects affecting riparian habitats:

A. Require appropriate erosion control measures (e.g., hay bales, filter fences, vegetative buffer strips or other accepted equivalents) to reduce siltation and contaminated runoff from project sites.

B. Retain emergent (rising out of water) and submergent (covered by water) vegetation.

C. Retain vegetation as practical within the constraints of the proposed development as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. Rapidly sprouting plants, such as willows, should be cut off at the ground line and root systems left in tact, when removal is necessary.

D. Locate roadways and other facilities perpendicular, rather than adjacent, to waterways to reduce the total riparian area disturbed wherever practical within the constraints of the proposed development as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

E. Locate bridge and road footings outside of high water zones and riparian habitats wherever practical within the constraints of the proposed development as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

F. Provide construction buffers of at least 100 feet throughout the construction process. Construction buffers of 300 feet (on both sides of riparian corridors, for a total of 600 feet) are required when the red-legged frog or foothill yellow-legged frog occupy the project site. These 300' setbacks shall be measured horizontally from the top of the bank and shall extend the entire length of the stream (or other linear wetlands) within the boundaries of the project site. These setbacks may be reduced by the TAC with the concurrence of the Permitting Agencies' representative on the TAC if the reduction: 1) does not affect habitat (e.g., the stream becomes piped and travels underground) or 2) the reduction will not result in an adverse impact to the species or reduction in the biological values of the habitat. This buffer area should be marked with stakes, fencing or other materials which will be visible to construction workers, including heavy equipment operators.

These buffers may be reduced on a case-by-case basis by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

5.2.5 SPECIES RELOCATION

Relocation efforts often provide uncertain results, are frequently costly, and may result in project delays. Therefore, as described in Section 5.2.3.1(F), relocation will be used only in very rare circumstances and under the conditions and procedures described in the following sections.

5.2.5.1 Relocation Before Construction/Ground Disturbance Begins

If an SJMSCP Covered Species is identified by the JPA during a preconstruction survey before construction activities begin, the JPA shall, with the concurrence of the Permitting Agencies' representatives on the TAC, , determine whether the individual plants or animals shall be relocated to Preserves or other areas to minimize Incidental Take. The responsibility for relocating SJMSCP Covered Species from a project site shall be that of qualified biologists approved by the Permitting Agencies' representatives on the TAC or biologists already holding appropriate permits and working on behalf of the JPA.

The CDFG, or qualified biologists approved by the CDFG or biologists already holding appropriate permits, may relocate a non-federally-listed SJMSCP Covered Species at any time prior to ground disturbing activities. For federally-listed SJMSCP Covered Species, the CDFG, USFWS, or qualified biologists approved by the Permitting Agencies' representatives on the TAC, may relocate a federally-listed SJMSCP Covered Species prior to ground disturbing activities pursuant to authority to perform relocation of federally-listed SJMSCP Covered Species granted pursuant to the federal SJMSCP Permits. Property owners shall be notified of relocation efforts.

Relocation efforts involving SJMSCP Covered Bird Species shall be consistent with the Migratory Bird Treaty Act.

5.2.5.2 Relocation After Construction/Ground Disturbance Begins or is Completed

If an SJMSCP Covered Species is discovered after construction activities begin, or after construction is completed, the Project Proponent, project manager, or other interested persons immediately shall notify the JPA who, in turn shall notify CDFG's and USFWS's representatives on the TAC. These Permitting Agency TAC representatives, in consultation with the JPA, shall determine if relocation is necessary or beneficial pursuant to Sections 5.2.5.4 and 5.2.5.5 and, if required, identify a qualified biologist to undertake the relocation. Authority to perform relocations of federally-listed SJMSCP Covered Species is granted pursuant to the federal SJMSCP Permits. Property owners shall be notified of relocation efforts.

Relocation efforts involving SJMSCP Covered Bird Species shall be consistent with the Migratory Bird Treaty Act.

5.2.5.3 Non-Delay of Projects for Relocation

Neither the CDFG, USFWS, nor qualified biologists approved by these agencies (including biologists approved from the JPA) shall delay the start of or any subsequent project activity for more than 48 hours (two working days), from the time the Permitting Agencies' representatives on the TAC receive notification from the JPA to relocate an SJMSCP Covered Species unless additional time is granted by the Project Proponent. The CDFG and USFWS representatives on the TAC may, at any time, waive the option to relocate SJMSCP Covered Species from a project site.

5.2.5.4 Decision to Relocate a Species or Not to Relocate a Species

The ultimate decision to relocate or not to relocate a species shall be made by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. The decision shall be based upon the best scientific knowledge available including the following considerations:

A. The biological status of the species and the biological benefits or value to the species that would occur as a result of relocation, including whether or not relocated individuals would be likely to return to the site, or

B. The numbers of the species are extremely limited, or

C. The likelihood that a relocated species will survive in a new location, or

D. The availability of alternative, suitable, habitat for the species, or

E. The relative time and cost associated with the species relocation in comparison to the biological benefits realized, or

F. The existence of well-established techniques which predict success.

5.2.5.5 Examples of Possible Circumstances Under Which Relocation or Salvaging Efforts May be Undertaken

As described in Section 5.2.3.1(F), relocation will be considered only after properly implemented Incidental Take Minimization Measures have failed to remove SJMSCP Covered Species from a project site and Take is the only viable remaining option. The following is an example of when relocation efforts may be an appropriate option to Take:

Plants. If the parcel owner rejects offers to purchase a conservation easement or dedicate land in-lieu of fee payments, and the subject plant is not a full avoidance plant, then the following may be considered:

Seed collection from a representative sampling of the plant specimens. The JPA with the concurrence of the Permitting Agencies' representatives on the TAC shall either identify appropriate locations within SJMSCP Preserves to attempt to raise plants from seeds or appropriate agencies will be contacted and the seeds shall be given to those agencies for archival, educational, or experimental (i.e., attempting to grow the species) purposes. In all cases, prior to planting seeds from and SJMSCP Covered Plant Species which have been properly collected and stored uner the auspices of the JPA, the JPA shall consult with the TAC and the Permitting Agencies on a case-by-case basis to review the current information available regarding the subject species and follow the appropriate protocols for planting the seeds in appropriate areas.

5.3 MEASURES TO MITIGATE IMPACTS

As noted above, mitigation for the loss of habitat of the SJMSCP Covered Species as a result of SJMSCP Permitted Activities takes a habitat-based approach which emphasizes the establishment, enhancement and management-in-perpetuity of Preserves composed of a single vegetation type or association of vegetation types (a habitat) upon which discrete groups of SJMSCP Covered Species rely. Preserves will normally be located outside of designated existing and planned urban boundaries predominantly on productive agricultural lands located throughout the County. The purchase of easements from landowners willing to sell urban development rights will be the primary method of acquiring Preserves. Once acquired, Preserve lands shall be enhanced by the JPA to increase the quality of habitats on Preserves and, subsequently, to encourage occupation of a Preserve site by SJMSCP Covered Species or increase the populations of existing SJMSCP Covered Species on Preserves. Enhancements on the majority of the SJMSCP Preserves shall be tailored to encourage the continued productive agricultural use of Preserve lands by landowners provided that such agricultural use is compatible with achieving continued successful reproduction, feeding, and sheltering, or are expected to be able to achieve these activities, of SJMSCP Covered Species as stated in Section 5.4.8.1(F).

To ensure that SJMSCP Permitted Activities will not result in jeopardy to SJMSCP Covered Species, the SJMSCP also establishes, as part of the mitigation component of its conservation strategy: (1) limits to the number of acres of Natural Lands which may be Converted from Open Space use (Section 5.5.1); (2) limits to the number of acres of occupied and/or potential habitat that may be converted for selected SJMSCP Covered Species including narrowly distributed plants (Section 5.5.2); (3) special conservation and mitigation requirements for the San Joaquin kit fox, Valley elderberry longhorn beetle, California red-legged frog, valley oak woodlands, and vernal pools (Sections 5.5.3 through 5.5.7); and (4) mitigation emphasizing changes in project design for linear projects which may create barriers to dispersal for SJMSCP Covered Species or other plants, fish, or wildlife (Section 5.5.8).

In addition, the SJMSCP provides an alternative mitigation approach which allows complete avoidance of SJMSCP Covered Species and habitats through the implementation of measures established in Section 5.5.9 in which compensation is not required where the provisions of Section 5.5.9 are implemented.

The following describes the methods and approaches adopted for the SJMSCP for acquiring and establishing Preserves, enhancing Preserves, and monitoring and managing Preserves in perpetuity; the limits established by the SJMSCP for specific species, Conversions of Agricultural Habitat Lands and Natural Lands; and alternative methods of mitigating impacts under the SJMSCP.

5.3.1 SJMSCP COMPENSATION REQUIREMENTS

Section 4.1 of the SJMSCP provides the compensation requirements for Open Space Conversions summarized as follows:

TABLE 5.3-1: SJMSCP COMPENSATION RATIOS

HABITAT TYPE CONVERTED FROM OPEN SPACE USE	REQUIRED COMPENSATION RATIO	DESCRIPTION
Agricultural Habitat Lands	1:1	One acre of Preserve acquired, enhanced and managed in perpetuity for each acre of habitat Converted from Open Space use.
Natural Lands - Non-Wetlands (e.g., oak woodlands)	3:1	Three acres of Preserve acquired, enhanced and managed in perpetuity for each acre of habitat Converted from Open Space use.
Natural Lands - Vernal Pools within *Vernal Pool Zone*	2:1 Preservation plus 1:1 Creation (3:1 total)	Create one acre of habitat and preserve two acres of existing habitat for each acre Converted from Open Space use--resulting in three total acres of Preserve. Preserves include both wetted surface area and upland grasslands surrounding vernal pools and protecting their watersheds. Creation component shall emphasize restoration of pre-existing vernal pools, wherever feasible.
Natural Lands - Wetlands Other than Vernal Pools	At least 1:1 Creation Plus 2:1 Preservation (3:1 total)	SJMSCP may: (1) create one acre habitat, preserve two existing acres of habitat; (2) create two acres habitat, preserve one acre existing habitat; or (3) create three acres of habitat, preserve zero acres of existing habitat. All options result in three acres of Preserve.

5.3.2 METHODS BY WHICH INDIVIDUALS PROVIDE MITIGATION PURSUANT TO THE SJMSCP

Individuals seeking coverage under the SJMSCP may undertake one or a combination of two or more of the following three options to provide compensation pursuant to the SJMSCP:

A. Pay the appropriate fee as indicated in Section 7.4.1; or
B. Dedicate, as conservation easements or fee title, or in-lieu dedications (as specified in Sections 5.3.2.2 and 5.3.2.3, herein); or
C. Purchase approved mitigation bank credits as specified in Section 5.3.2.4.
D. Propose an alternative mitigation plan, consistent with the goals of the SJMSCP and equivalent in biological value to options A, B or C, above, subject to approval by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

5.3.2.1 Fees

As described in Section 7.4.1, individuals opting for coverage under the SJMSCP may pay a fee. The fee

structure under the SJMSCP is:

A. $750 per acre for Conversion of Multi-Purpose Open Space Lands,

B. $1,500 per acre for Conversion of Agricultural Habitat Lands and Natural Lands (except for vernal pools); and,

C. $30,000 per acre for the wetted surface area of vernal pools and $5,000 per acre for the upland grasslands surrounding vernal pools. The SJMSCP assumes a 12% wetted surface area for vernal pool grasslands. This translates into an overall average cost per acre for vernal pool grasslands of $8,000 per acre.

5.3.2.2 In-Lieu Land Dedications

Private individuals receiving Incidental Take coverage pursuant to the SJMSCP may, in-lieu of fee payments, offer suitable land for dedication. Dedications shall be approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. In-lieu lands shall meet minimum parcel sizes designated in the SJMSCP Preserve design descriptions or, if smaller, should be adjacent to an existing Preserve which, in combination with in-lieu lands, meets Preserve size minimums. In-lieu lands shall include an endowment payment (equal to the management endowment and administration costs of land acquisitions as prescribed in Sections 7.2.3 and 7.2.4) to ensure the management of the dedicated land in perpetuity. Dedicated land may be lands on-site or off-site from the project location owned by the Project Proponent. Conservation easements (or fee title) for owner-dedicated lands, referencing the JPA or another suitable agency or organization as easement or fee title holder, shall be recorded with the office of the County Recorder. Easements shall be consistent with the requirements of California Civil Code Section 815.3 which specifies those who are qualified to hold conservation easements.

5.3.2.3 Timing of Fee Payments, In-Lieu Dedications or Mitigation Banking

Under the normal permitting process implemented by local government jurisdictions in San Joaquin County, ground disturbance (including grading) may occur prior to the local government jurisdiction's issuance of a Building Permit. For example, once a *tentative* subdivision map to create new residential lots is approved by a local government agency (e.g., the City of Tracy's City Council or the San Joaquin County Board of Supervisors) with conditions, the Project Proponent must fulfill many of the project conditions (e.g., constructing new roads or installing water or sewer lines) before gaining approval of a *final* subdivision map. Once the final subdivision map is completed, new residential lots may be sold to the general public. Once a newly created subdivision lot is purchased, the new owner of the lot normally applies for a Building Permit to construct a new home on the newly created subdivision lot.

However, different development projects may undergo variations in this permitting process (e.g., Project Proponents may receive only Building Permits for small projects which address both building and grading activities, but Project Proponents are not required to secure Grading Permits due to the relatively small amounts of dirt being moved by the project). The majority of development projects in San Joaquin County require Building Permits during at least one phase of the development process. Many of San Joaquin County's largest projects also require Grading Permits. Therefore, given this variation in the types of permits which may be issued at varying times during the development process, the following provisions shall be

implemented 1) to address the variations in the types of permits required, and timing of the acquisition of those permits, for the various development projects in San Joaquin County, 2) to provide a uniform approach amongst the local government agencies for timing the collection of fees or requiring purchases of mitigation banking credits, 3) to provide maximum flexibility for developers to finance their projects without creating adverse impacts to SJMSCP Covered Species, and 4) to ensure that compensation will occur pursuant to the SJMSCP by using familiar permitting procedures already used by local government agencies:

For so long as the 350-acre jump-start (Section 8.6) remains in place, the timing of compensation pursuant to the SJMSCP shall be as follows:

A. Collection of Fees/Purchase of Mitigation Banking Credits for Projects Less Than or Equal to 350 Acres in Size (projects equivalent in size or smaller than the jump-start): collection of fees or purchase of banking credits will occur prior to or at the time of issuance of Building Permits so long as Site Disturbance without compensation (i.e., grading or vegetation removal has occurred with or without permits, but Building Permits have not yet been issued) does not exceed 500 acres total at any time during the term of the SJMSCP for SJMSCP Permitted Activities undertaken by project proponents opting for coverage pursuant to the SJMSCP. When Site Disturbances without compensation pursuant to this provision reaches 500 acres total, then the JPA and Permittees shall require the fee collections or purchase of banking credits for projects less than or equal to 350 acres in size to occur pursuant to the same schedule as required for projects exceeding 350 acres as described in paragraph B.

B. Collection of Fees/Purchase of Mitigation Banking Credits for Projects Exceeding 350 Acres: collection of fees for land acquisition or purchase of banking credits will occur either:

1. Prior to issuance of a Grading Permit (or prior to Ground Disturbance if no Grading Permit is required) ; or,

2. The Project Proponent may bond for payment of the applicable SJMSCP fees prior to the issuance of a Grading Permit (or prior to the commencement of Ground Disturbance if no Grading Permit is required). Bonds posted pursuant to this provision shall be released, to the extent possible, after full project buildout and after all appropriate fees have been paid with respect to each building permit associated with the project. Provisions for releasing portions of the bond as buildout progresses may be established on a case-by-case basis upon request of the Project Proponent Only bonds issued by a bond surety admitted in California by the California Department of Insurance will be accepted unless otherwise approved by the JPA with the concurrence of the Permitting Agencies.

C. Collection of Fees/Purchase of Mitigation Banking Credits for Conversion of Vernal Pool Grasslands to Orchards and Vineyards shall occur prior to ground disturbance.

D. Land Dedications in Lieu of Fee Payments or in Lieu of Mitigation Banking Regardless of Project Size: Shall occur prior to ground disturbing activities (i.e., prior to the issuance of a Grading or Building Permit, whichever occurs first) unless an extension is requested, in

writing to the JPA, by the Project Proponent and granted to a date certain by the TAC, with the concurrence of the Permitting Agencies' TAC representative, based upon the following findings:

1) The time extension will not jeopardize the proper functioning of SJMSCP, and

2) The time extension will not adversely affect any SJMSCP Covered Species.

The TAC, with the concurrence of the Permitting Agencies' TAC representative, may impose conditions on the time extension as necessary to provide assurances to the JPA that the Project Proponent shall provide compensation pursuant to the SJMSCP consistent with the requirements of the SJMSCP.

If the 350-acre jump-start ceases to exist, then the provisions of paragraph B shall apply for all SJMSCP Permitted Activities, regardless of size and regardless of the compensation method selected (i.e., fees, land dedications in-lieu of fee payments, or purchase of mitigation banking credits).

5.3.2.4 Mitigation Banking

The SJMSCP anticipates using two categories of mitigation banks:

A. **SJMSCP Mitigation Banks.** The SJMSCP anticipates enhancing and/or restoring vernal pool lands in excess of those required for compensation under the SJMSCP. This excess may be sold as mitigation or compensation "credits" to individuals not covered by the SJMSCP and in need of vernal pool mitigation lands. The SJMSCP may consider establishing other types of mitigation banks during the life of the Plan, as deemed necessary.

B. **Private Mitigation Banks.** A private property owner may establish a mitigation bank on all or a portion of his or her property for one or more SJMSCP Covered Species. A Project Proponent needing that particular habitat type for mitigation for a project elsewhere may then pay the property owner or "bank operator" to permanently manage the enhanced property for SJMSCP Covered Species. Private mitigation banks shall be consistent with the SJMSCP Preserve selection criteria (Section 5.4.4) and shall be approved by appropriate state and federal agencies pursuant to applicable state and federal guidelines for mitigation banks and other applicable policies, laws and regulations. Credits purchased from private mitigation banks must be for habitats which already are existing as protected lands within the mitigation bank Preserves prior to the purchase of credits (i.e shall not be purchased from mitigation banks which intend to create protected lands in the future).

Land banks used to offset impacts to wetlands must comply with Federal Register Notice: November 28, 1995, Vol. 60, No. 228, Federal Guidance for the Establishment, Use and Operation of Mitigation Banks, and other applicable polices, laws, and regulations. All mitigation banks, whether SJMSCP banks or private mitigation banks, shall be reviewed and approved by the Permitting Agencies prior to use. Aerial photographs indicating the condition of habitat lands, prior to undertaking habitat enhancements for banking, shall be used when establishing baseline conditions for mitigation banks unless otherwise approved by the Permitting

Agencies.

5.3.3 METHODS BY WHICH THE JPA PROVIDES MITIGATION PURSUANT TO THE SJMSCP

The JPA shall use monies collected for the SJMSCP, as described in Section 7.4, for acquisition of Preserve lands, enhancement of Preserve lands, monitoring and management of Preserve lands in perpetuity, and administration of the SJMSCP. The following describes the criteria, methods and process for selecting, designing, managing and monitoring Preserve lands.

The SJMSCP's JPA shall normally acquire Preserve lands in one of four ways:

A. Acquisition of conservation easements from willing sellers;

B. Outright purchase of land (fee title purchase) from willing sellers;

C. Acceptance of a land dedication in-lieu of fee payments as described in Section 5.3.2.2; or,

D. Acceptance of land dedicated as a gift or charitable donation.

The proportion of lands acquired as conservation easements versus those acquired in fee title is flexible pursuant to the SJMSCP. However, since a primary goal of the SJMSCP is to preserve productive agricultural use that is compatible with the SJMSCP's biological goals as stated in SJMSCP Section 5.4.8.1(F), most of the SJMSCP Preserve lands will be acquired through the purchase of easements in which landowners retain ownership of the land and continue to farm the land. It is envisioned that the approximate ratio of conservation easements to fee title lands under the SJMSCP, at the end of 50 years, will be 90% conservation easements to 10% fee title ownership of Preserve lands.

5.3.3.1 Conservation Easements

Most SJMSCP Preserve lands shall be protected and managed through the purchase of conservation easements. Conservation easements shall be negotiated with and tailored to each individual property owner and to each parcel under consideration to meet both the needs of the landowner and the biological goals of the SJMSCP Covered Species as stated in SJMSCP Section 5.4.8.1(F). Conservation easements shall be purchased from willing sellers only. Easement language shall be reviewed and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC prior to finalizing easement acquisition transactions. Once standardized easement language has been approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, review and approval by the TAC, including the Permitting Agencies and the Permitting Agencies' representatives on the TAC, is no longer required except when deviations from pre-approved easement provisions are proposed. Permitting Agencies' representatives on the TAC shall have 60 calendar days to approve or deny deviations from pre-approved easement provisions commencing from the date of receipt of a written request for approval from the Joint Powers Authority.

Appendix H contains one pre-approved (i.e., template) easement and four sample easements. Landowners and the JPA may use the template easement without further review from the Permitting Agencies. Sample

easements contained in Appendix H provide flexibility for landowners and the JPA and reflect concepts that may be considered in preparing individual easements pursuant to the SJMSCP which differ from the SJMSCP's pre-approved easement. When deviating from the template easement format, landowners and the JPA, and TAC will work together to formulate easement language suitable to the needs of the SJMSCP program and the landowner. Additional template easement formats may be added to the SJMSCP subject to the approval of the JPA, with the concurrence of the Permitting Agencies' representatives on the TAC, based upon alternative easements developed with landowners throughout the life of the Plan. Approval of new easement language require written approval from the Permitting Agencies' representatives on the TAC (approval of meeting minutes by a Permitting Agency TAC representative for a meeting attended by that representative shall be deemed to be written approval).

Easements shall be recorded with the San Joaquin County Recorder's Office and should, at a minimum, address:

A. Preservation and enhancement of wildlife values within the easement area.

B. Maintenance of the agricultural or other beneficial Open Space use of the easement area and identification of uses compatible with the SJMSCP, which acknowledges the need to allow flexible and profitable agricultural enterprise.

C. The procedures and circumstances for terminating and replacing easements consistent with the provisions of Section 5.3.3.6.

D. Provide neighboring land protections for land/landowners in the vicinity of SJMSCP Preserves consistent with the neighboring land protection provisions summarized in Section 5.3.3.4.

E. Address the maintenance of water rights by landowners on rangelands or other agricultural lands acquired for Preserves while providing easement holders with the ability to use water on Preserves. The quality and quantity of water granted to easement holders should be sufficient to: (a) maintain the hydrology of existing wetlands and riparian areas targeted for preservation, and, (b) should be sufficient to maintain newly created and/or enhanced wetlands and riparian areas on the Preserves.

F. Establish which enhancement and/or management activities shall be undertaken and/or maintained by the landowner and which shall be provided and/or maintained by the Joint Powers Authority, or other grantee holding the easement.

G. Remedies for noncompliance with easement provisions.

H. Specify the entity that will hold the conservation easement. Landowners shall indicate their preferences for easement dedications. The SJMSCP anticipates that, in addition to the JPA, local, state and federal public and private entities and non-profits shall be available to accept easement dedications. Easements shall be consistent with the requirements of California Civil Code Section 815.3 which specifies those who are qualified to hold conservation easements.

I. Specify the agency responsible for enforcing the conditions of the conservation easement (e.g., the JPA and/or Permitting Agencies)

J. Address remedies for illegal trash dumping by third parties (i.e., which is not the fault of either the landowner or easement holder) and remedies against other violators of the terms of the easement.

K. Require the Preserve landowner to adhere to the terms of the Preserve Management Plan, reference the existence of the Preserve Management Plan and describe where to obtain copies of the Preserve Management Plan.

L. Identify encumbrances, liens, or other items of title that might interfere with the integrity of the easement.

M. Maintenance of permanent water within ditches (e.g., rice farming) where such preservation provides biological values necessary for the Preserve, as described in Section 5.4.8.5(B).

N. When applicable, as described in Section 5.4.8.5(C)(3), limitations on the construction of trails and road crossings through Oak Woodland Preserves smaller than 250 acres in size.

O. Accessibility to the parcel by emergency personnel as established in Section 5.9.4.9.

5.3.3.2 Fee Title

The JPA shall acquire some Preserve lands in fee title(i.e., through outright purchase). Lands shall be acquired through the purchase of fee title from willing sellers only. Lands purchased in fee title shall normally be those which require a greater level of enhancement than those acquired through conservation easements (e.g., the acquisition of vernal pool grasslands for the creation of vernal pools which may significantly alter land and, therefore, require a change in regular agricultural production methods). Lands held in fee title as SJMSCP Preserves shall be protected as Preserve lands through the use of appropriate covenants. Lands acquired in fee title may be leased-back to farmers to maintain productive agricultural use, where agricultural use is compatible with the Preserve design goals as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. Alternatively, the JPA may purchase lands in fee title, place easements on those lands and re-sell these lands, with easements. Easements placed on lands using this method allows the JPA to regain a portion of monies spent on acquisition to make additional land acquisitions--a component of the SJMSCP funding plan used by major lands trusts and described in more detail in Section 7.4.2.5.

5.3.3.3 In-lieu Land Dedications and Acceptance of Gifts or Donations

The JPA may accept lands dedicated by individuals in lieu of fee payments as described above in Section 5.3.2.2. The JPA also may accept gifts or donations of land for Preserves. When the JPA receives lands as gifts or donations, the JPA will normally earmark monies set aside for land acquisition which would otherwise have been spent on the acquisition of the gifted lands for enhancement activities and for investment for long-term management of the gifted lands. Alternatively, if not otherwise prohibited by the terms of the gift, the JPA may sell gifted lands to generate monies for the acquisition of higher priority Preserve lands.

5.3.3.4 Neighboring Land Protections

The following provisions apply only within the context of the overall conservation strategy of the SJMSCP and should not be viewed independently of the overall SJMSCP.

When SJMSCP Preserves are established and managed for the SJMSCP Covered Species pursuant to the SJMSCP, either through purchase of conservation easements, fee title acquisition, or other means, landowners near or adjacent to Preserves may be concerned about the potential impacts to their own land use activities. For example, a landowner may be concerned that federally or state listed SJMSCP Covered Species (or that unlisted SJMSCP Covered Species which may become listed during the 50-year term of the Plan) inhabiting the SJMSCP Preserve lands may colonize or use their lands and that the landowner's routine and ongoing agricultural activities or mining activities meeting the requirements of Section (A)(2)(F) below could be restricted as a result. To address these concerns, the SJMSCP offers neighboring land protections for all SJMSCP Covered Species (both listed and unlisted), as discussed below.

Except as provided for in (A)(2) below, routine and ongoing agricultural activities on Agricultural Lands and lands identified for aggregate mining use by local general plans and meeting the requirements established in Section (A)(2)(F) below, within one-half mile of the boundary of any lands established by the JPA as Preserves under the SJMSCP will be covered for Incidental Take of SJMSCP Covered Species (listed and unlisted) that come to inhabit such lands after the Preserves are established. Moreover, Agricultural Lands and lands identified for aggregate mining use by local general plans and meeting the requirements established in Section (A)(2)(F) within ten miles of the boundary of any lands established by the JPA as Preserves under the SJMSCP will be covered for Incidental Take of foraging Swainson's hawks. Details addressing the extension of neighboring land protections are described below.

A. Elements

1. Lands Covered by Neighboring Land Protections. At the election of the neighboring landowner, Agricultural Lands and lands identified for aggregate mining use by local general plans and meeting the requirements established in Section (A)(2)(F) within one-half mile of the boundary of any lands established as SJMSCP Preserves under the SJMSCP, either through purchase of a conservation easement, purchase of fee title, or other means, will be covered for Incidental Take of SJMSCP Covered Species under the SJMSCP's associated Section 10(a)(1)(B) and Section 2081(b) permits, for any such SJMSCP Covered Species after establishment of the SJMSCP Preserves. Additionally, those with Agricultural Lands and lands identified for aggregate mining use by local general plans and meeting the requirements established in Section (A)(2)(F) within 10 miles of the boundary of any lands established as SJMSCP Preserves and that are managed for Swainson's hawks shall be covered for the Incidental Take of foraging Swainson's hawks. Exemptions to this coverage are listed below.

2. Exceptions. Exceptions to coverage for neighboring land protections discussed below may be modified (i.e., removed) by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC if the neighboring landowner voluntarily undertakes biological surveys approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC and such surveys indicate absence of SJMSCP Covered Species. The JPA will undertake, at its own expense,

surveys of neighboring lands to establish the absence of large-flowered fiddleneck, diamond petaled California poppy, showy madia, Hospital Canyon larkspur in the *Southwest Zone;* Greene's tuctoria, legenere and succulent owl's clover in the *Vernal Pool Zone;* Delta button celery, Sanford's arrowhead, slough thistle in the Central and Central/Southwest Transition Zones as necessary to extend neighboring land protections, if requested and approved by the landowner.

Except as otherwise provided for in the preceding paragraph, the following are excluded from neighboring land protections:

A. Individuals or populations of SJMSCP Covered Species present on neighboring lands prior to the establishment of SJMSCP Preserves and the natural habitat features (e.g., nest trees) which support known individuals or populations of SJMSCP Covered Species.

B. SJMSCP Covered Fish Species (See Table 2.2.2). Because fish species occupy specific streams and rivers and do not limit themselves to distinct boundaries within streams and rivers, revegetation of an existing streamside to create an SJMSCP Preserve benefitting SJMSCP Covered Fish will not encourage SJMSCP Covered Fish to newly occupy neighboring lands--instead, revegetation for the benefit of SJMSCP Covered Fish simply enhances their existing occupied habitat. In addition, the SJMSCP will establish only nine acres of Preserves which could support SJMSCP Covered Fish--all of which will be part of or immediately adjacent to existing streams and rivers already inhabited by those SJMSCP Covered Fish--again, with no potential to create new impacts to neighboring lands because SJMSCP Covered Fish Species already exist throughout the waterways which constitute the neighboring lands.

C. Lands containing G, G2, BL, BCN, or O/G habitats as mapped on the *SJMSCP Vegetation Maps* **and** which are located southwest of I-580 within the *Southwest Zone* shall be considered to be occupied by the San Joaquin kit fox (see areas located southwest of I-580 and labeled "core conservation area" or "buffer area" in Appendix G). This assumption is based upon the biological analysis of species distributions as presented in the *Biological Analysis: San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP)* prepared for the San Joaquin Council of Governments by Toyon Environmental Consultants, Inc., August 15, 1996. That study considered all known mapped locations of the San Joaquin kit fox available as of the date of publication, the *Recovery Plan for Upland Species of the San Joaquin Valley, California*[15] and consultations with representatives from the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

D. Vernal pools since the presence of vernal pools outside of SJMSCP Preserves cannot be considered to be related to or caused by the presence of vernal pools on SJMSCP Preserves. SJMSCP Covered Vertebrate Species which inhabit non-vernal pool habitats on neighboring lands (e.g., California tiger salamander and western spadefoot toad) are covered by

---

15 *Recovery Plan for Upland Species of the San Joaquin Valley, California*, U.S. Department of the Interior, Fish and Wildlife Service, Region 1, September 30, 1998

neighboring land protections; SJMSCP Covered Plant Species are covered unless specifically exempted by paragraph E below. SJMSCP Covered Vernal Pool Crustacean Species (e.g., vernal pool fairy shrimp, vernal pool tadpole shrimp, Conservancy fairy shrimp, longhorn fairy shrimp) are assumed to occupy vernal pool habitat on neighboring lands and are exempted from neighboring land protections unless surveys, conducted pursuant to current U.S. Fish and Wildlife Service protocols and paid for by the JPA, are conducted and establish that these species are absent from the vernal pools on neighboring lands.

E. Coverage for large-flowered fiddleneck, diamond-petaled California poppy, showy madia, Hospital Canyon larkspur in the *Southwest Zone;* Greene's tuctoria, legenere and succulent owl's clover in the *Vernal Pool Zone;* Delta button celery, Sanford's arrowhead, slough thistle in the *Central* and *Central/Southwest Transition Zones* when these plants are present on an SJMSCP Preserve prior to the extension of neighboring land protections. The JPA will undertake, at its own expense, surveys of neighboring lands to establish the absence of these SJMSCP Covered Plant Species as necessary to extend neighboring land protections, if requested and approved by the landowner.

F. Lands identified for aggregate mining use by local general plans which have not received a final approval (i.e., issuance of a conditional use permit or similar entitlement by a local jurisdiction) to commence aggregate mining as of the SJMSCP's Effective Date are exempt from Section 5.3.3.4 and are subject to the requirements of the SJMSCP, including compensation requirements, as established in Section 5.7 of the SJMSCP. Lands identified for aggregate mining use by local general plans which are in active use as of the SJMSCP's Effective Date qualify to receive neighboring land protections to protect ongoing aggregate mining activities provided baseline biological studies have been completed as provided below in Section(3)(B).

G. Special provisions exist for the extension of neighboring land protections for the following uses: wholesale nurseries, agricultural processing, farm labor camps, small animal raising, animal feeding and sales, or trucking facilities. Lands upon which these uses are existing as of the date of a Preserve acquisition pursuant to the SJMSCP are covered by neighboring land protections. However, Conversion of a land use from an existing routine and ongoing agricultural activity on neighboring land *after* establishment of an SJMSCP Preserve to one of these uses, suspends neighboring land protections. Similarly, expansion of one of these existing uses onto lands not previously used for one of these purposes *after* establishment of an SJMSCP Preserve also suspends neighboring land protections on that portion of the land upon which expansion has occurred. Neighboring land protections shall be re-established for these uses after mitigation measures to offset identified impacts (including impacts to biological resources) are completed in conjunction with the acquisition of a discretionary entitlement as currently required by the San Joaquin County Code and pursuant to the notification procedures established below in paragraph 4 and subject to all other exceptions in Section 5.3.3.4(a)(2).

H. Special provisions exist for the extension of neighboring land protections to orchards and vineyards and other crops. Lands upon which orchards and/or vineyards are existing as of the date of a Preserve acquisition pursuant to the SJMSCP are covered by neighboring land

protections. However, Conversion of a land use from an existing routine and ongoing agricultural activity on neighboring land *after* establishment of an SJMSCP Preserve to an orchard or a vineyard or other crop which results in the Conversion of vernal pool grassland or Other Waters of the United States, suspends neighboring land protections. Similarly, expansion of orchards and/or vineyards and other crops onto lands not previously used for orchards and/or vineyards or other crops *after* establishment of an SJMSCP Preserve which results in the Conversion of vernal pool grasslands or Other Waters of the United States also suspends neighboring land protections on that portion of the land upon which expansion has occurred. Neighboring land protections shall be re-established for orchards and vineyards and other crops which Convert vernal pool grasslands or Other Waters of the United States after mitigation measures to offset identified impacts (including impacts to biological resources) are completed in conjunction with the acquisition of a Section 404 permit and/or streambed alteration permit and pursuant to the notification procedures established below in paragraph 4 and subject to all other exceptions in Section 5.3.3.4(a)(2). Conversion of Agricultural Lands to orchards and/or vineyards or other crops on neighboring lands which do *not* result in the Conversion of vernal pool grasslands or Other Waters of the United States and either existing during the establishment or occurring after the establishment of SJMSCP Preserves, are covered by neighboring land protections.

I. Known occupied habitat for the giant garter snake, riparian brush rabbit and riparian woodrat as defined in Section 5.2.4.23, 5.2.4.24, and 5.2.4.8.

J. The extension of neighboring land protections does not confer special authorization allowing the Conversion of Natural Lands on neighboring lands. Similarly, the extension of neighboring land protections to neighboring lands does not restrict the Conversion of Natural Lands on neighboring lands which was permitted prior to the extension neighboring land protections and is consistent with local, state and federal regulations.

3. Establishing Presence of SJMSCP Covered Species on Neighboring Lands Prior to Preserve Establishment.

A. Agricultural Lands. Presence of SJMSCP Covered Species on Neighboring Lands shall be established by the JPA in conjunction with establishing a new SJMSCP Preserve. The JPA, in consultation with the TAC, shall identify those portions of neighboring lands which are excluded from neighboring land protections pursuant to the preceding provisions based on the *SJMSCP GIS Database* and windshield surveys or other suitable means not requiring access to neighboring lands unless the landowner expressly grants access for survey purposes.

B. Aggregate Lands. Pre-existing baseline surveys of the project site are required for aggregate land to establish the presence or absence of SJMSCP Covered Species located on the parcel prior to the existence of SJMSCP Preserves. Pre-existing baseline surveys of the project site prepared by landowners will be reviewed by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC to determine if existing baseline surveys of the site provide sufficient information for extending neighboring land protections to lands identified for aggregate mining use by local general plans and meeting the

requirements established in Section (A)(2)(F). If pre-existing baseline surveys of the site are unavailable or were found to be deficient (e.g., due to age, protocols used, timing of study, coverage), then the presence of SJMSCP Covered Species on lands identified for aggregate mining use by local general plans and meeting the requirements established in Section (A)(2)(F) shall be established by the landowner seeking neighboring land protections through the preparation of a baseline biological survey of the site approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. The surveys shall be supplemented by the *SJMSCP GIS Database*.

4. Notification and Acceptance of Protections. To ensure that adequate records of those property owners protected by these neighboring land protections are maintained, that landowners are in agreement with the terms of coverage, and that the owners of such protected properties are notified of the rights and obligations of these provisions, the following shall occur:

Prior to the approval by the JPA of new SJMSCP Preserve acquisitions, the JPA shall send a letter by certified mail, return receipt requested, to each neighboring landowner located within 1/2 mile of the proposed SJMSCP Preserve (or within 10 miles of a proposed SJMSCP Preserve to be managed for Swainson's hawks). The letter will explain the SJMSCP and the coverage under the Incidental Take Permits being offered to the landowner with respect to Agricultural Lands and lands identified for aggregate mining use by local general plans and meeting the requirements established in Section (A)(2)(F) within one-half mile of the boundary of an SJMSCP Preserve (or 10 miles of an SJMSCP Preserve managed for Swainson's hawks, for the Incidental Take of foraging Swainson's hawks). For lands identified for aggregate mining use by local general plans and meeting the requirements established in Section (A)(2)(F), instructions for preparing baseline biological surveys shall be included. For Agricultural Lands, the letter will identify any individuals or populations of SJMSCP Covered Species or areas within the neighboring lands which would not be covered under the Incidental Take permits pursuant to provisions in paragraph 2, above, and attach a detailed map showing all areas included and any areas excluded from coverage. Additionally, the letter will request that the landowner provide a purchaser or lessee of the property notice of the neighboring land protections so that a purchaser or lessee can obtain Incidental Take coverage as described herein. The letter will be accompanied by a "Certificate of Inclusion" to be signed by the landowner and returned to the JPA (in a self-addressed, stamped envelope provided by the JPA to the landowner) if the landowner elects coverage under the JPA's Incidental Take Permits. A sample letter and Certificate of Inclusion are included in Appendix W of this Plan. If the landowner does not return the Certificate of Inclusion, the JPA will follow-up with the landowner until the JPA determines that the landowner accepts or declines the neighboring land protections. Certificates of Inclusion for lands identified for aggregate mining use by local general plans and meeting the requirements established in Section (A)(2)(F) shall be accepted by the JPA after landowners prepare or submit acceptable baseline biological surveys in accordance with Provision 3B, above. Pursuant to exception 2(G) Conversion of land use from an existing agricultural practice to one or more of the uses listed in Section 2(G), suspends neighboring land protections. The following land use activities require a discretionary entitlement pursuant to the San Joaquin County Code: wholesale nurseries, agricultural processing, farm labor camps, small animal raising, animal feeding and sales, or trucking facilities. When such a Conversion occurs, the local jurisdiction shall notify the JPA through an Advisory Agency letter during the environmental review process for the discretionary entitlement. In response, the JPA shall follow the same process described in this Section for notifying

(including the preparation of an exhibit map) and certifying landowner participation in the neighboring land protections after mitigation for the discretionary entitlement has been completed for the wholesale nursery, agricultural processing use, farm labor camp, small animal raising use, animal feeding and sales use, or trucking facility. For those landowners already participating in the neighboring land protections program who undertake a Conversion of their existing land use to wholesale nurseries, agricultural processing, farm labor camps, small animal raising, animal feeding and sales, or trucking facilities , the JPA shall provide the same notification except that, in addition, the notification will explain any revisions to the existing neighboring land protections, include a revised the exhibit map for the neighboring land protections (if necessary) and include a revised Certificate of Inclusion for the neighboring landowner's signature.

Pursuant to exception 2(H) Conversion of Vernal Pool Grasslands or Other Waters of the United States to orchards and/or vineyards or other crops after the establishment of SJMSCP Preserves suspends neighboring land protections. When such a Conversion occurs, and a Section 404 Permit is required, the JPA shall keep in contact with the landowner and the agency issuing the Section 404 Permit to determine when the Section 404 Permit has been issued. In response to verification of issuance of the Section 404 Permit, the JPA shall follow the same process described in this Section for notifying (including the preparation of an exhibit map) and certifying landowner participation in the neighboring land protections after mitigation for the Section 404 Permit is completed. For those landowners already participating in the neighboring land protections program who undertake a Conversion of their existing land use to an orchard and/or vineyard or other crop which results in the Conversion of Vernal Pool Grasslands or Other Waters of the United States, the JPA shall provide the same notification except that, in addition, the notification will explain any revisions to the existing neighboring land protections, include a revised the exhibit map for the neighboring land protections (if necessary) and include a revised Certificate of Inclusion for the neighboring landowner's signature.

5. Record Keeping. The JPA shall maintain a record of all letters, return receipts and Certificates of Inclusion sent to neighboring landowners and all signed Certificates of Inclusion and return receipts returned by the landowners, and shall provide a map in each Annual Report (Section 5.9.1) depicting which lands are covered by neighboring land protections and which lands declined protection. The JPA shall retain all baseline biological surveys prepared by landowners seeking neighboring land protections for lands identified for aggregate mining use by local general plans and meeting the requirements established in Section (A)(2)(F).

6. Compliance with Local, State and Federal Regulations. Incidental Take authorized by these neighboring land provisions and the SJMSCP's associated state and federal permits is limited to Incidental Take that occurs on Agricultural Lands and lands identified for aggregate mining use by local general plans and meeting the requirements established in Section (A)(2)(F). Participating landowners retain their responsibility for compliance with other applicable federal, state, or local regulations.

7. Violations and Enforcement. If the JPA becomes aware of a violation or potential violation of the neighboring land protection provisions, the JPA shall determine whether there is a potential violation and, if appropriate, send a notice of potential non-compliance to the landowner and forward a copy of the notice to the U.S. Fish and Wildlife Service and the California Department of Fish and Game detailing the potential violation and including supporting documentation, if available. The notice shall

be in the form of a letter informing the landowner of the potential violation and identifying the steps necessary to remedy the potential violation. The letter shall also state that, if the landowner does not remedy the potential violation, he or she will no longer be protected by the terms of the neighboring land provisions and may be subject to enforcement actions from the U.S. Fish and Wildlife Service pursuant to Section 9 of the Endangered Species Act (ESA) and from the California Department of Fish and Game pursuant to Section 2080 of the California Endangered Species Act (CESA). Nothing in this paragraph restricts or otherwise limits independent investigation by the USFWS of suspected or alleged unauthorized violations of the ESA.

8. Revisions. Neighboring land protection provisions may be revised through the SJMSCP's Minor Revision process (see Section 8.8.3), as necessary, as new options are made available (e.g., alternative options may become available through adoption and/or implementation of new legislation or alternative methods as may be proven effective in other plans).

9. Extending Neighboring Land Protections After Expiration of the SJMSCP Permits. The JPA is responsible for establishing a long-term program to extend neighboring land protections past the 50-year term of the SJMSCP Permits. It is the intent of the JPA that neighboring land protections shall exist for so long as SJMSCP Preserves exist (i.e., in perpetuity).

In establishing this program, the JPA shall consider: 1) extending the SJMSCP Permits as provided in Section 8.3; 2) existing programs including California's SB231 (Fish and Game Code Section 2086, et seq.) addressing the accidental take of species in the course of agricultural activities, 3) pursuing legislation at the state and federal levels to provide neighboring land protections past the expiration of the SJMSCP Permits; and/or 4) other options as may be identified by the JPA, TAC, or other stakeholders. The option(s) selected by the JPA shall provide a permanent solution for addressing the extension of neighboring land protections past the expiration of the SJMSCP Permits.

The JPA shall commence pursing legislation and all other available options no later than 6 months after the SJMSCP's Effective Date. To ensure the successful completion of this program, the following is required:

I. No fee title acquisitions may be undertaken by the JPA until a mechanism for providing neighboring land protections past the expiration of SJMSCP Permits is in place so long as the JPA remains in compliance with all the elements of the SJMSCP , including funding and maintaining the Plan's overall conservation strategy except for the following circumstances: 1) the acceptance of gifted lands, 2) for reasons of biological necessity (defined as circumstances involving listed species of low distribution which require unique habitats) as determined by the JPA with the concurrence of the Permitting Agency representatives on the TAC (e.g., to acquire the last remaining riparian brush rabbit habitat); and 3) the acquisition of Preserve lands which do not border qualifying neighboring lands (e.g., are entirely surrounded by other public lands). Consistent with SJMSCP Section 7.5.2.4, should any funding shortfall occur as a result of this provision, the JPA shall recognize its responsibility for providing sufficient funding as necessary to meet its obligations pursuant to the SJMSCP and will use its authorities to correct funding shortfalls.

II. The Technical Advisory Subcommittee (See Section 5.4.7.2 for composition of this

Subcommittee) shall evaluate, annually, whether the JPA has made sufficient progress in extending neighboring land protections past the expiration of the SJMSCP Permits as provided in this Section.

If the TAC Subcommittee determines that sufficient progress has been made by the JPA in extending neighboring land protections past the expiration of the SJMSCP Permits, then no further action is necessary until the next annual TAC Subcommittee meeting held pursuant to this section.

If the TAC Subcommittee determines that the JPA has failed to make sufficient progress in extending neighboring land protections past the expiration of the SJMSCP Permits the TAC Subcommittee shall forward its findings to the JPA.

If the JPA concurs with the findings of the TAC Subcommittee, then the JPA shall suspend acquisition of Preserves for a period determined by the TAC Subcommittee, but not to exceed 24 months, so long as the JPA remains in compliance with its requirements for Preserve acquisitions pursuant to Section 5.4.1.2. The JPA may resume Preserve acquisition activities any time during the suspension period after receiving a recommendation from the TAC Subcommittee and a finding by the JPA that the JPA has made/is making sufficient progress towards establishing neighboring land protections past the expiration of the SJMSCP Permits.

If, at the end of the Preserve acquisition suspension period established by the TAC Subcommittee, the TAC Subcommittee again finds that 1) insufficient progress has been made by the JPA towards extending neighboring land protections past the expiration of the SJMSCP Permits and 2) that there is no likelihood that the JPA will be able to make progress towards extending neighboring land protections past the expiration of the SJMSCP Permits; then the TAC subcommittee shall recommend to the JPA that the JPA complete acquisition of Preserves as necessary to fulfill its current obligations pursuant to the SJMSCP and thereafter suspend the SJMSCP program until and unless neighboring land protections can be secured past the expiration of the SJMSCP Permits.

In response to the recommendations of the above TAC Subcommittee, the JPA shall hold a properly-noticed public hearing to consider the recommendations of the TAC Subcommittee within 45 days of receiving the recommendations of the TAC Subcommittee. Notifications for the public hearing shall be distributed to those entities identified in Section 5.3.3.5(A)(2-4). If the JPA decides that termination of the SJMSCP Program is necessary, procedures for termination shall be carried out in compliance with Section 14.1 of the Implementation Agreement.

III. The TAC Subcommittee shall be responsible for reviewing the sufficiency and permanence of the solution(s) established in the preceding paragraphs. The recommendations of the TAC Subcommittee shall be forwarded to the JPA for their consideration. Prior to making a determination that a solution has been established for providing neighboring land protections, the JPA shall hold a properly-noticed public hearing. Notifications for the public hearing shall, at a minimum, be distributed to those entities identified in Section 5.3.3.5(A)(2-4).

IV. If:

- **!** The SJMSCP Permits terminate before a solution for providing neighboring land protections past the expiration of the SJMSCP Permits has been found and

- **!** An adverse disruption of routine and ongoing agricultural activities occurs on neighboring land to the detriment of the neighboring landowner as a result of an SJMSCP Preserve and due to the lack of neighboring land protections,

Then the JPA shall be responsible for relocating the SJMSCP Covered Species creating the impact on the neighboring land subject to the approval of the Permitting Agencies. This provision does not apply to neighboring lands which are currently protected by, or have declined participation in, an existing and ongoing neighboring land protection program as established pursuant to the SJMSCP.

10. Monitoring. Monitoring of the impacts associated with Neighboring Land Protections by the JPA, including provisions for adjusting the distribution and composition of mitigation Preserves provided to offset impacts associated with Neighboring Land Protections (see Section B, below) are established in SJMSCP Section 5.9.3.7.

B. Mitigation Provided by JPA for the Extension of Neighboring Land Protections. The extension of neighboring land protections could result in Incidental Take or accidental loss of individuals of certain SJMSCP Covered Species on neighboring lands due to isolated deficiencies in the *SJMSCP GIS Database*, inability to enter neighboring lands prior to extending neighboring land protections, and due to the potentially wide range of some species. Based on these considerations, the potential for Incidental Take or accidental loss of individuals of SJMSCP Covered Species resulting from the extension of neighboring land protections would likely be limited to the following SJMSCP Covered Species in the following locations:

- **!** Valley elderberry longhorn beetle in the *Primary Zone of the Delta*;

- **!** Giant garter snake in the *Primary Zone of the Delta*; and

- **!** Vernal pool vertebrates located primarily in the *Vernal Pool Zone* and in the *Southwest Zone* – in particular, the California tiger salamander;

- **!** California horned lark in the *Vernal Pool Index Zone*;

- **!** Northern harrier throughout the County;

- **!** Pond turtle throughout the County; and

- **!** Red-legged frogs in the *Southwest* and *Vernal Pool Index Zones*.

1. Mitigation - 600 Acres of Neighboring Land Preserves. Because some limited Take to or accidental loss of individuals of identifiable SJMSCP Covered Species may occur as a result

of extending neighboring land protections, the JPA shall provide the following mitigation intended to offset potential impacts to the Valley elderberry longhorn beetle, giant garter snake, California horned lark, northern harrier, red-legged frogs, pond turtle, vernal pool vertebrates and other SJMSCP Covered Species:

A. In addition to, and as part of, the Vernal Pool Preserves established pursuant to the SJMSCP to offset impacts from SJMSCP Permitted Activities listed in Section 8.2.1, incorporate 250 more acres of Vernal Pool Preserve. This additional Preserve acreage shall be established within the *Vernal Pool Zone* and shall be composed of existing vernal pools including enhancements which benefit the tiger salamander pursuant to the Preserve criteria established in Sections 5.4.4.3(B), 5.4.6.4(2-9) and 5.4.8.4(A) and targeting occupied habitat for the northern harrier and California horned lark as indicated in the *SJMSCP GIS Database*;

B. In addition to, and as part of, Preserves established pursuant to the SJMSCP to offset impacts from SJMSCP Permitted Activities listed in Section 8.2.1, incorporate 25 more acres of Valley elderberry longhorn beetle (VELB) habitat in the *Southwest Zone*, *Central Zone* or *Primary Zone of the Delta* pursuant to the criteria established in current USFWS VELB guidelines for planting elderberry and associated under story and the guidelines established in SJMSCP Sections 5.4.4.1(A)(A1)(5-8 and 10), 5.4.4.1(A)(A2)(3,5,6,&7), 5.4.4.2(C)(1,5 & 6), 5.4.4.4(A1)(8-10), 5.4.4.4(B)(7-9), 5.4.6.2(A)(4), 5.4.6.3(A)(2-4), 5.4.6.3(C)(2 & 3), 5.4.6.5(A)(2,7,10,11,13,14,18), 5.4.6.5(B)(3 & 6), 5.4.8.2(A), 5.4.8.3(C)(1-3,5,6), 5.4.8.5(A)(2-5, 10), and 5.4.8.5(B)(1,2,4,6);

C. In addition to, and as part of, Preserves established pursuant to Section 5.4.4.4(B) to offset impacts from SJMSCP Permitted Activities listed in Section 8.2.1, incorporate 150 more acres of giant garter snake Preserve. This additional Preserve acreage shall be established within the *Primary Zone of the Delta* or within the *Central Zone* near the *Primary Zone of the Delta* pursuant to the Preserve criteria established in Sections 5.4.4.4(B), 5.4.6.5(B) and 5.4.8.5(B);

D. In addition to, and as part of, Preserves established pursuant to Section 5.4.4.2(C) and 5.4.4.4(C) and to offset impacts from SJMSCP Permitted Activities listed in Section 8.2.1, incorporate 40 more acres of Preserve benefitting the pond turtle and red-legged frog. This additional Preserve acreage shall be established within the *Central Zone*, *Southwest Zone* or near the *Primary Zone of the Delta* pursuant to the Preserve criteria established in Sections 5.4.4.2(C), 5.4.4.4(C), 5.4.6.3(C), 5.4.6.5(C), 5.4.8.3(C), and 5.4.8.5(C); and

E. In addition to the 465 acres of Neighboring Land Preserves to be established above, allocate an additional 135 acres of Preserves. This contingency acreage shall be used for other species which may be identified over the life of the Plan as requiring mitigation to offset impacts associated with the extension of neighboring land protections. Preserve design for this contingency and targeted species shall be established through the SJMSCP's Adaptive Management Program by the JPA with

the concurrence of the Permitting Agencies' representatives on the TAC.

F. Preserves established to offset impacts associated with neighboring land protections shall be acquired, enhanced, managed and administered by the JPA and shall be funded pursuant to the SJMSCP Funding Plan included in Table 7.4-1 and as described in Section 7.4. Costs of acquiring, enhancing, managing and administering SJMSCP Neighboring Land Preserves have been calculated and are included in total cost estimates for the SJMSCP (see Table 7.2.5-2).

2. Schedule for Establishing Neighboring Land Preserves. Compensation acreages described above to offset potential impacts occurring from the provision of Neighboring Land Protections shall be established in conjunction with, and at approximately the same rate as, the establishment of SJMSCP Preserves provided to offset impacts from SJMSCP Permitted Activities listed in Section 8.2.1.

Except as otherwise provided in this paragraph, and so long as the provision of 600 acres of Neighboring Land mitigation lands are deemed sufficient to offset impacts to SJMSCP Covered Species by the Permitting Agencies, one additional acre of SJMSCP Preserve shall be created for every 167 acres of SJMSCP Preserve established. If the SJMSCP Monitoring Plan establishes that impacts to SJMSCP Covered Species on neighboring lands are less than anticipated pursuant to the monitoring process established in Section 5.9.3.7, the JPA, with the concurrence of the Permitting Agencies' representatives on the TAC may refine this compensation ratio. Pursuant to this provision, the JPA may refine the compensation ratio to no less than one acre of compensation for every 200 acres. If the SJMSCP Monitoring Plan establishes that impacts to SJMSCP Covered Species on neighboring lands are more than anticipated pursuant to the monitoring process established in Section 5.9.3.7, then a Major Amendment will be required as described below in paragraph 3.

In addition, the distribution and composition of the Preserves established to offset Neighboring Land Protections may be revised by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC if the monitoring program established in Section 5.9.3.7 finds that impacts projected in Section C, below, are more or less than projected for a particular SJMSCP Covered Species (i.e., If monitoring finds that more Neighboring Lands are occupied or potentially occupied by VELB than are occupied or potentially occupied by Northern harriers, then more of the 600 acres of Neighboring Land Preserves may be established to benefit VELB and less acres would be acquired and enhanced to benefit Northern harriers).

Should the SJMSCP terminate prior to its 50-year term, Neighboring Land Preserves shall be established in proportion to the SJMSCP Preserves required at the date of Plan termination.

3. Major Plan Amendment Contingency. A Major Plan Amendment (Section 8.8.5) shall be required for the SJMSCP to extend Neighboring Land Protections to new parcels not already covered by Neighboring Land Protections should the SJMSCP Biological Monitoring Plan

identify the need for more than 600 acres of Neighboring Land Preserves to offset impacts resulting from neighboring land protections pursuant to the process established in Section 5.9.3.7.

C. Background

1. Establishing the Half-Mile Distance for Neighboring Land Protections

Landowner protections for the Incidental Take of SJMSCP Covered Species for a distance of one-half mile (2,640') from SJMSCP Preserves is based on buffers established to protect SJMSCP Covered Species from impacts of nearby land use activities (i.e., on neighboring lands) pursuant to the SJMSCP Biological Analysis and other plant, fish and wildlife management plans. Logically, these buffers, determined to be sufficient to protect SJMSCP Covered Species from impacts on neighboring lands should, conversely, protect neighboring lands from impacts associated with SJMSCP Covered Species.

Designated protection buffers for those SJMSCP Covered Species addressed in functioning plant, fish and/or wildlife management plans are:

SJMSCP Biological Analysis/SJMSCP Section 5.4.4

Roosting Mastiff bat	.2 mile (1,000')
California Red-legged Frog	.1 mile (600')
Southwest Zone grassland plant species	.1 mile (500')

Tuolumne County Wildlife Handbook - 1987[16]

All distances are maximum distances from active nests during nesting

Golden Eagle	.5 mile
Prairie falcon	.5 mile
Osprey	.5 mile
Rookeries (Great blue heron, Great egret)	.25 mile
Cooper's hawk	.25 mile
Sharp-shinned hawk	.25 mile
Northern harrier	.25 mile
Black-shouldered kite	.25 mile
Burrowing owl	.1 mile (600')
Yellow-breasted chat	.08 mile (200' both sides of riparian areas)
Double-crested cormorant	.06 mile (300')

[16] Tuolumne County Wildlife Project, 1987; Prepared by Holton Associates -- Stephen L. Granholm, Ph.D. for the Tuolumne County Community Development Department; Adopted November 2, 1987 Tuolumne County Board of Supervisors Resolution #303-87.

The preceding represents a range of designated protection buffers ranging between .06 mile and .5 mile.

The largest protection buffer established in plant, fish, or wildlife management plans, .5 mile, was designated as the protection radius for neighboring land protections for the following reasons:

A. The protection of productive Agricultural Lands--both for the preservation of plants, fish and wildlife and San Joaquin County's economy--is an essential element of the SJMSCP. The adoption of the maximum .5 mile neighboring land protection radius will ensure the protection of agricultural uses within the County and may provide an incentive to landowners to maintain some existing natural lands within isolated portions of these Agricultural Lands in their natural state. In turn, this protection of agricultural uses in the County has, and will continue to, ensure the protection of both Open Spaces in San Joaquin County and the protection of SJMSCP Covered Species which rely on agricultural Open Spaces.

B. Of the established buffers, the largest buffers are assigned to birds, especially raptors. Of the 97 SJMSCP Covered Species 32%, more than any other species class, are birds. The most abundant SJMSCP Covered Species are, in fact, some of the raptor species which are estimated to occupy more than 500,000 acres of land in San Joaquin County--most of it Agricultural Land.[17] With this distribution, it is likely that at least one SJMSCP Covered Bird Species will occur on the majority of SJMSCP Preserves. Therefore, the adoption of the .5 mile radius for neighboring land protections is an accurate reflection both of the types of SJMSCP Covered Species expected to occur on SJMSCP Preserves and, therefore, the distance necessary to protect neighboring lands from potential impacts of SJMSCP Covered Species on SJMSCP Preserves.

2. Establishing the Ten-Mile Distance for Incidental Take of Foraging Swainson's Hawks Neighboring Land Protections

Landowner protections for the Incidental Take of foraging Swainson's hawk, for a distance of 10 miles from the boundaries of SJMSCP Preserves, is based on the following:

- Radio telemetry studies undertaken by the California Department of Fish and Game to "investigate the habitats, movements, and habitat-use relationships of the Swainson's hawk in the Central Valley" show that the Swainson's hawk forages up to 18 miles from its nest site (Estep, 1989).[18]

- The California Department of Fish and Game, relying on studies by Estep (see preceding

---

17 SJMSCP Biological Analysis, Table 8-4.

18 Estep, J.A. 1989. Biology, movements and habitat relationships of the Swainson's hawk in the Central Valley of California, 1986-87. California Department of Fish and Game, Nongame Bird and Mammal Section Report. 53 pp. See pages 20-23 for telemetry findings.

footnote) and Babcock[19], have established guidelines for identifying and assessing impacts and developing mitigation to offset the impacts of development on the Swainson's hawk pursuant to the California Environmental Quality Act.[20] As stated on page 1 of these guidelines:

> *"This report also includes 'model' mitigation measures which have been judged consistent with polices, standards and legal mandates of the Legislature and Fish and Game Commission."*
>
> *"Implementation of mitigation measures consistent with this report are intended to help achieve the conservation goals for the Swainson's hawk and should complement multi-species habitat conservation planning efforts currently underway."*

- The California Department of Fish and Game guidelines establish a 10-mile foraging radius management zone extending from Swainson's hawk nests based upon the following, as stated on page 2 of the guidelines:

> *"The ten mile radius standard is the flight distance between active (and successful) nest sites and suitable foraging habitats as documented in telemetry studies (Estep 1989, Babcock 1993). Based on the ten mile foraging radius, new development projects which adversely modify nesting and/or foraging habitat should mitigate the project's impacts to the species. The ten mile foraging radius recognizes a need to strike a balance between the biological needs of reproducing pairs (including eggs and nestlings) and the economic benefit of development(s) consistent with Fish and Game Code Section 2053."*

In response to these guidelines, the California Department of Fish and Game requires mitigation for private development projects for impacts to Swainson's hawk foraging habitats located within 10 miles of active (defined in the study as those nests used during one or more of the last 5 years) Swainson's hawk nests. Based upon the California Department of Fish and Game's studies and practice, the SJMSCP planners conclude that the Swainson's hawk regularly and successfully use foraging habitat located within 10 miles of active Swainson's hawk nests. Therefore, it can be anticipated that Swainson's hawks which are attracted to and establish nests within SJMSCP Preserves, can be expected to forage a distance of up to 10 miles from SJMSCP Preserves which are managed for the Swainson's hawk. Therefore, neighboring land protections for Incidental Take

---

19 Babcock, K.W. 1993. Home range and habitat analysis of Swainson's hawks in West Sacramento. Michael Brandman Associates report prepared for the Southport Property Owner's Group, City of West Sacramento, CA. 21 pp.

20 California Department of Fish and Game, Staff report regarding mitigation for impacts to Swainson's hawks (*Buteo swainsoni*) in the Central Valley of California, distributed to division chiefs and regional managers of the California Department of Fish and Game by Boyd Gibbons, November 8, 1994. 14 pps.

of foraging Swainson's hawks extend 10 miles from the boundaries of SJMSCP Preserves that are managed for the Swainson's hawk.

3. Evaluating Potential Impacts Associated with Neighboring Land Protections and Establishing Mitigation

TABLE 5.3-2
ESTIMATE OF MAXIMUM POTENTIAL ACREAGE PROVIDED
NEIGHBORING LAND PROTECTIONS
WITH A POTENTIAL FOR TAKE

Acres	Description
734,500	Total acres of Agricultural Lands in San Joaquin County = 721,500 acres Total acres mineral resource lands = 13,000 acres (10,000 maximum to be used in 50 years) Total lands with potential to receive neighboring land protections = 734,500 acres Source: *SJMSCP GIS Database* (i.e., mapped from aerial photos)
-110,754	At least two-thirds of the Primary Zone of the Delta located within San Joaquin County will not contain SJMSCP Preserves due to potential for levee breaks and flooding of Preserves (Section 5.4.4.) Therefore, neighboring land protections will not extend to lands in approximately two-thirds of the Delta due to the absence of Preserves. The Primary Zone of the Delta is 487,625 acres with 50,000 acres of waterways. 38% of the Primary Zone (185,298 acres) is in San Joaquin County. 185,298 acres, less 38% of the 50,000 acres of waterways (19,000 acres) equals 166,298 acres of lands in the Delta in San Joaquin County. At least two-third of the 166,298 acre of Delta in San Joaquin County, or 110,754 acres, excludes Preserves and is not subject to neighboring land protections. Source: *Land Use Plan and Resource Management Plan for the Primary Zone of the Delta*, Delta Protection Commission, February 23, 1995.
-147,107	Acreage of orchards and vineyards in San Joaquin County. This monoculture and associated clean farming practices will not support SJMSCP Covered Species. Therefore, take of SJMSCP Covered Species is not anticipated in orchards and vineyards.
-30,000	SJMSCP Preserves will not be established adjacent to urban fringes (approx. 1/2 mile radius from the urban boundaries established pursuant to local general plans) due to the high prices of these lands and because species on such Preserves could be adversely impacted by neighboring urban land uses. Therefore, these lands will not be subject to neighboring land use protections.
-100,841	Acreage of SJMSCP Preserves. Not subject to neighboring land protections.
345,798	Potential maximum acreage of land receiving neighboring land protections with a potential for take of SJMSCP Covered Species.

A maximum of 345,798 acres of land in San Joaquin County could receive neighboring land protections (regardless of the ultimate configuration of SJMSCP Preserves) also support activities which have a potential for take of SJMSCP Covered Species. These lands subject to neighboring land protections are primarily Agricultural Lands used for row and field crops and grasslands used for dryland grazing. Due to monoculture (the cultivation of semi-permanent crops such as orchards and vineyards) and associated clean farming practices (the use of pesticides and rodenticides, and the removal of habitat features, to exclude insects and plants or wildlife), an additional 147,107 acres of Agricultural Lands used for orchards and vineyards are eligible for neighboring land protections, but are not expected to support SJMSCP Covered Species.

To evaluate the potential level of Incidental Take occurring on up to 345,798 acres of neighboring lands, SJMSCP Planners first evaluated the nature of impacts occurring on these neighboring lands. Planners concluded that the scope and character of take on neighboring lands resulting from agricultural activities (e.g., planting and harvesting of row and field crops and cattle grazing) is distinctly different from Incidental Take occurring on property as a result of SJMSCP Permitted Activities. Specifically, Take occurring as a result of SJMSCP Permitted Activities (i.e., primarily urban development) generally erases most or all habitat values with minimal or no Open Space remaining.

In contrast, agricultural activities on neighboring lands encourages habitation by, and preserves Open Spaces for, many of the SJMSCP Covered Species. The majority of SJMSCP Covered Species in San Joaquin County occupy and depend on Agricultural Lands and the agricultural activities occurring on those lands.

For example, the Swainson's hawk relies heavily on certain row and field crops (e.g., alfalfa, hay, tomatoes, beets) which encourage insects and rodents and provide the primary food source for this SJMSCP Covered Species during nesting. Later, discing these fields scatters insects and injures rodents to provide additional food for the Swainson's hawk which is frequently found following tractors as seasonal crops are plowed back into the soil. Northern harriers and white-tailed kites are also found foraging along with the Swainson's hawk. Later, wheat and similar crops are flooded to avoid burning and to assist in returning organic matter to soils. Migrating waterfowl along the Pacific Flyway and resident waterfowl, including the Aleutian Canada goose, white-faced ibis, greater sandhill crane, and snowy egret, flock to these flooded field by the hundreds and sometimes thousands to rest and refuel. Irrigation of row and field crops, accomplished through a system of permanent man-made ditches, provides habitat for the giant garter snake. Northern harrier, merlin, ferruginous hawks and prairie falcon are often found foraging on open grasslands used for grazing cattle. California horned lark, loggerhead shrike, burrowing owl, golden eagle, San Joaquin kit fox, San Joaquin whipsnake, California horned lizard and approximately seven SJMSCP Covered Plants also occupy these lands side-by-side with grazing cattle. The long-billed curlew has also been seen to frequent these lands as well as row and field crops. The preservation of dryland grazing lands in San Joaquin County also preserves Open Space occupied by vernal pools--especially in eastern San Joaquin County. The maintenance of these vernal pools as Open Space as a result of agricultural use, rather than the Conversion of these Open Spaces to urban uses, preserves habitat for the California tiger salamander, spadefoot toad, succulent owl's clover, Bogg's Lake hedge hyssop, bristly sedge, vernal pool fairy shrimp and multiple other SJMSCP Covered Species.

In short, unlike Permitted Activities, which adversely affect plants, fish, or wildlife, the use and management of Agricultural Lands within San Joaquin County complements the plant, fish and wildlife conservation

strategy in the SJMSCP. 345,798 of the 492,905 acres of neighboring lands which could potentially qualify for neighboring land protections would also qualify as SJMSCP Preserve lands with minor changes to existing agricultural practices (e.g., primarily the addition of enhancements such as added fencing around vernal pools, planting additional vegetation within riparian corridors and establishing hedgerows).

Because the use and management of Agricultural Lands is largely beneficial to Covered Species, the potential for take on Agricultural Lands neighboring SJMSCP Preserves is evaluated differently than take resulting from Permitted Activities. Take resulting from Permitted Activities and the Conversion of Open Space habitats to non-Open Space use are measured in the SJMSCP in terms of acres of Converted habitat. Conversely, take potentially resulting from agricultural activities occurring on neighboring lands, is measured by identifying and evaluating the specific activities that are likely to be undertaken on neighboring lands and by assessing and quantifying the impacts of those activities on SJMSCP Covered Species. To accomplish this, SJMSCP Planners first evaluated the nature of activities which are undertaken on neighboring lands which might result in take of SJMSCP Covered Species, then identified those SJMSCP Covered Species which might be subject to Incidental Take as a result of these activities. Then, the potential for neighboring land protections to minimize and mitigate Incidental Take of SJMSCP Covered Species on neighboring lands was compared with the potential negative impacts to determine the nature of the overall effect of neighboring land protections on SJMSCP Covered Species. Finally, where appropriate, mitigation to compensate for identified impacts was established.

Despite the overall benefits of most agricultural practices to SJMSCP Covered Species in San Joaquin County, SJMSCP Planners carefully evaluated existing agricultural practices associated with row and field crop agriculture and dryland grazing to determine how or if Incidental Take of SJMSCP Covered Species could occur and, if so, from what specific activities. Planners concluded that the following agricultural practices--all of which currently occur on neighboring lands in San Joaquin County--could result in Incidental Take of SJMSCP Covered Species:

- **!** Vegetation removal. This activity may eliminate potential or occupied habitat for SJMSCP Covered Species;
- **!** Vegetation trampling by cattle. This activity may degrade potential or occupied habitat for SJMSCP Covered Species;
- **!** Discing and plowing, operations of vehicles and machinery. This activity may disturb potential or occupied habitat for SJMSCP Covered Species and may kill or injure individuals;
- **!** Conversion of vernal pool grasslands. This activity is normally undertaken during land preparation for orchards and vineyards and may remove potential or occupied habitat for SJMSCP Covered Species; and
- **!** Conversion to intensive agricultural uses. This activity normally Converts row and field crop-type uses to intensive uses requiring permanent removal of vegetation (e.g., dairies, nurseries, feed lots, processing plants) which may remove potential or occupied habitat for SJMSCP Covered Species.
- **!** Maintenance of stock ponds and livestock water pipelines. This activity may temporarily eliminate potential or occupied habitat and kill or injure individuals.

Next, SJMSCP Planners evaluated the habits and distribution of each of the SJMSCP Covered Species to determine which SJMSCP Covered Species are vulnerable to Incidental Take on neighboring lands due to these identified activities. Planners determined that:

! Invertebrates. The SJMSCP Covered fairy and tadpole shrimp are confined to their vernal pools and wetland habitats. Distribution of these species in San Joaquin County is accomplished primarily by waterfowl moving between vernal pools. Therefore, Incidental Take of these species requires the destruction, or fill, of vernal pools on neighboring lands. However, destruction or fill of vernal pools is excepted from neighboring land protections and, therefore, Incidental Take of these species resulting from the extension of neighboring land protections is not anticipated. Similarly, the curved-foot diving beetle is confined to its wetland habitat and Incidental Take of this species would require the destruction, or fill, of wetlands on neighboring lands. Again, destruction or fill of jurisdictional wetlands are excepted from neighboring land protections and, therefore, Incidental Take of this species resulting from the extension of neighboring land protections is not anticipated.

The Ciervo aegilian scarab beetle occupies sand dune habitat. No such habitat exists on lands which might qualify for neighboring land protections. Therefore Incidental Take of this species is not anticipated as a result of extending neighboring land protections.

There are no known occurrences of either the moestan or molestan blister beetles in San Joaquin County. Therefore, the potential take of these species on neighboring lands is not anticipated.

The distribution of the Valley elderberry longhorn beetle is well-documented along the San Joaquin County's rivers. While pre-existing (i.e., on neighboring lands prior to the establishment of SJMSCP Preserves) individuals and populations of this species along County rivers are excepted from neighboring land protections, data establishing distribution of this species in the Primary Zone of the Delta is sparse. Therefore, the potential exists for some take of this species in the Primary Zone of the Delta on neighboring lands should vegetation removal occur on neighboring lands as part of ongoing agricultural practices.

! Fish. Fish are excepted from neighboring land protections, therefore Incidental Take of fish resulting from the extension of neighboring land protections is not anticipated.

! Plants SJMSCP Covered Plant Species occurring in the *Vernal Pool Zone* (e.g., succulent owl's clover, Boggs Lake hedge-hyssop, legenere, Hoover's calycadenia, bristly sedge and Red Bluff dwarf rush) are closely associated with the boundary between the wetted surface area and the upland grasslands associated with vernal pools. Like the fairy and tadpole shrimp, these species are largely confined to their vernal pools and wetland habitats. Therefore, Incidental Take of these species requires the destruction, or fill, of vernal pools on neighboring lands. As noted, destruction and/or fill of vernal pools is excepted from neighboring land protections and, therefore, Incidental Take of these species resulting from the extension of neighboring land protections is not anticipated. Because of their extreme rarity, however, the SJMSCP neighboring land protections except Greene's tuctoria (currently unknown in the County), legenere, and succulent owl's clover from protections if these species are found on SJMSCP Preserves lands near neighboring lands prior to the extension of neighboring land protections. The JPA will undertake, at its own expense, surveys of neighboring lands to establish the absence of these species as necessary to extend neighboring land protections, if requested and approved by the landowner.

SJMSCP Covered Plant Species occurring in the *Central Zone* are the slough thistle and the Delta button celery. Cattle-grazing does not occur in this zone which is primarily characterized by the planting and harvesting of row and field crops. These two species are normally found along riparian corridors located outside of boundaries used for the planting and harvesting of row and field crops. While take of these species on neighboring lands is not anticipated, because of their extreme rarity, , the SJMSCP neighboring land protections except these two species from protections if these species are found on SJMSCP Preserves lands near neighboring lands prior to the extension of neighboring land protections. The JPA will undertake, at its own expense, surveys of neighboring lands to establish the absence of these species as necessary to extend neighboring land protections, if requested and approved by the landowner.

SJMSCP Covered Plant species occurring in the *Primary Zone of the Delta* (e.g., Suisun marsh aster, California hibiscus, Delta tule pea, Mason's lilaeopsis, Delta mudwort and Sanford's arrowhead) are well-documented in the *SJMSCP GIS Database* with 599 occurrence records gathered through extensive state and federally-funded studies of the Delta in recent years. Pre-existing (i.e., on neighboring lands prior to the establishment of SJMSCP Preserves) individuals and populations of these species are excepted from neighboring land protections. Because of the extensive knowledge of their distribution, Incidental Take of Suisun marsh aster, California hibiscus, Delta tule pea, Mason's lilaeopsis, Delta mudwort and Sanford's arrowhead on neighboring lands is not anticipated. While take of Sanford's arrowhead on neighboring lands is not anticipated, because of its extreme rarity, the SJMSCP neighboring land protections except this species from protections if these species are found on SJMSCP Preserves lands near neighboring lands prior to the extension of neighboring land protections. The JPA will undertake, at its own expense, surveys of neighboring lands to establish the absence of this species as necessary to extend neighboring land protections, if requested and approved by the landowner.

SJMSCP Covered Plant Species occurring in the *Southwest Zone* (e.g., large-flowered fiddleneck, hospital canyon larkspur, showy madia, recurved larkspur, alkali milk-vetch, brittlescale, Mt. Hamilton coreopsis, diamond-petaled California poppy, mad-dog skullcap, Wright's trichochoronis, heartscale, brittlescale and caper-fruited tropidocarpum) are primarily associated with grasslands where the primary agricultural activity is cattle-grazing. There are no known occurrences of alkali milk vetch, heartscale, brittlescale, Mt. Hamilton coreopsis, recurved larkspur, showy madia, mad-dog skull cap and wright's trichochoronis and only one occurrence of hospital canyon larkspur (which would be included within Preserve boundaries) in the County. Therefore, no Incidental Take of these species on neighboring lands is anticipated. All known locations of diamond-petaled poppy occur on federally-owned lands (Lawrence Livermore Lab Site #300) outside of the jurisdiction of the SJMSCP. The remaining plant species have continued to persist in relative harmony with cattle grazing, therefore, take of these species is not anticipated on neighboring lands. Because of their extreme rarity, however, the SJMSCP neighboring land protections except large-flowered fiddleneck, , diamond-petaled poppy, showy madia, Hospital Canyon Larkspur from protections if these species are found on SJMSCP Preserves lands near neighboring lands prior to the establishment of SJMSCP Preserves. The JPA will undertake, at its own expense, surveys of neighboring lands to establish the absence of these species as necessary

to extend neighboring land protections, if requested and approved by the landowner.

! Mammals The distribution of the San Joaquin kit fox is well-documented in the *SJMSCP GIS Database* within the *Southwest Zone*. However, this species can travel quickly over many miles and could wander from SJMSCP Preserves through neighboring lands as it travels the corridor between its northernmost and southernmost population centers located outside of San Joaquin County. Because cattle-grazing is the primary agricultural activity on these neighboring lands and the kit fox currently co-exists successfully with cattle in the *Southwest Zone*, Incidental Take of the San Joaquin kit fox due to cattle-grazing activities in this zone is not anticipated. However, given the limited numbers of San Joaquin kit fox, the SJMSCP errs on the side of caution and excepts grasslands in the *Southwest Zone* located along the San Joaquin kit fox corridor from neighboring land protections.

The red bat, small-footed myotis, long-eared myotis, fringed myotis, long-legged myotis, Yuma myotis, greater western mastiff bat, pale big-eared bat and Pacific western big-eared bat are also highly mobile and can easily fly away to safety when faced with plows, discs, cows or vegetation-disturbing activities undertaken on neighboring lands. Colonial roosting sites and nurseries for these species are located out of harm's way (i.e., are not located on the ground) where they might be susceptible to destruction from plows and discs or cattle during agricultural activities occurring on neighboring lands. Therefore, Incidental Take of the SJMSCP Covered Bat Species on neighboring lands is not anticipated.

Badgers are confined to the *Southwest Zone* where they currently co-exist with cattle-grazing activities with no known adverse effect. Therefore, Incidental Take of the badger on neighboring lands is not anticipated. Finally, the Berkeley kangaroo rat also occupies the *Southwest Zone* grasslands side-by-side with cattle. The single known occurrence of take of this species occurred as a result of a road kill. Therefore, Incidental Take of this species on neighboring cattle-grazing lands is not anticipated.

Ringtail cats primarily inhabit riparian areas and brushy or wooded areas. Row and field crops are generally grown outside of these areas. Although some limited cattle grazing might occur in grasslands associated with wooded areas, cattle are not known to pose a threat to this highly mobile species. The agricultural activity most likely to impact this species is the clearing of vegetation for an intensive agricultural use such as establishing a nursery. Such activities (i.e., Conversions of lands to nurseries) are excepted from neighboring land protections pursuant to the definition of routine and ongoing agricultural activities (see Chapter 10). Therefore, Incidental Take of this species is not anticipated.

The known occupied habitat for the riparian brush rabbit is Caswell State Park near Ripon and near Stewart Tract. The riparian woodrat is known from Caswell Park and a second location on the Stanislaus River. Should the JPA acquire Preserve lands for either of these species, it would likely include those lands occupied by the riparian woodrat or riparian brush rabbit . These two species require a relatively narrow list of habitat types that are not well-distributed in the county. It is likely that the two species already would either already occupy neighboring lands or would be unlikely to occupy the neighboring lands due to a lack of preferred habitat on adjacent lands. Therefore, Take of these species is not anticipated.

! Birds The majority of SJMSCP Covered Bird Species are highly mobile and can easily escape plows and discs and relocate to Preserves or other nearby lands in the face of discing, plowing, cattle, or vegetation-disturbing activities undertaken on neighboring lands. This mobility protects most of the SJMSCP Covered Bird Species except for those SJMSCP Covered Bird Species which are ground nesters. These species include burrowing owls (which nest in ground cavities), California horned larks and northern harriers (both of which are always or sometimes ground nesters). Burrowing owls currently nest successfully in the presence of cattle as demonstrated in the eastern grasslands of Joaquin County. However, plowing necessary to plant row crops normally eliminates many potential burrowing owls nesting cavities within those portions of neighboring lands which would be subject to plowing or discing, therefore Incidental Take of this species is not anticipated.

Northern harriers and California horned larks also may establish nests on the ground. Unlike burrowing owls, however, northern harriers and horned larks might establish nests within row and field crops or above-ground within the midst of grazing cattle. Hence, nests for this species could be destroyed by normal discing and plowing practices or by cattle grazing. Therefore, some loss of individuals of these two species is anticipated on neighboring lands as a result of agricultural practices on neighboring lands. This loss of individuals is very limited and currently occurs on agricultural lands as a result of existing agricultural practices. It is important to note that this loss of individuals occurs accidently and will continue to occur accidently on neighboring lands with or without the provision of neighboring land protections. However, with neighboring land protections, compensation to offset this accidental loss of individuals will be provided.

Remaining SJMSCP Covered Bird Species fall into three general categories: 1) Those which do not nest in San Joaquin County (e.g., Aleutian Canada goose, snowy egret); 2) Those located in Delta where neighboring lands are open waterways which are not subject to neighboring land protections (e.g., California black rail); or 3) SJMSCP Covered Bird Species have well-documented nesting locations within the *SJMSCP GIS Database* (e.g., Swainson's hawk, egret and heron rookeries). Since pre-existing (i.e., on neighboring lands prior to the establishment of SJMSCP Preserves) individuals and populations of this species are excepted from neighboring land protections, Incidental Take of those species with well-documented nest locations is not anticipated.

! Reptiles. As with the Berkeley Kangaroo rat, the San Joaquin whipsnake and California horned lizard also occupy the *Southwest Zone* grasslands side-by-side with cattle without identified impacts. Therefore, Incidental Take of these species on neighboring cattle-grazing lands is not anticipated.

Giant garter snakes primarily inhabit ditches within flooded fields. The snake may leave ditches and enter row and field crops and may be killed or injured during discing and plowing operations. However, the known occupation site for these species are quite small and the extension of neighboring land protections within the known occupation site is prohibited. Therefore, Incidental Take of this species is possible on neighboring lands, however, that Take is anticipated to be confined to potential habitat for the species.

Pond turtles may leave riparian habitats and venture into upland grasslands, especially for egg-laying. Therefore, some take of this species due to trampling by cattle is possible on neighboring lands.

- Amphibians. The California tiger salamander may range into uplands up to 3,000 feet from wetland habitats and may exist throughout the County. Given the limited mobility of this species to escape moving vehicles or equipment, or cattle, and the vulnerability of eggs and larvae to dewatering of aquatic habitat, there is a potential for take of this species on neighboring lands.

  The spadefoot toad also may be susceptible to trampling cattle as it ventures outside of vernal pool habitats into upland grasslands. However, because there are only two known occupation sites for this species, both of which are anticipated to become part of large SJMSCP Preserves (300 acres) with significant buffers, it is unlikely that neighboring lands will ever host this species. Therefore, Incidental Take of this species not anticipated on neighboring lands.

  Like the spadefoot, take of yellow-legged frogs due to trampling by cattle is possible, but the yellow-legged frog exists in only three known locations in the County. Again, it is anticipated that these locations will become part of 320-acre Preserves established for the San Joaquin kit fox within the Southwest Zone. Therefore, the likelihood of these species venturing onto neighboring lands is so minimal as to be nearly non-existent and take of this species on neighboring lands is not anticipated.

  Finally, red-legged frogs are also of limited distribution in the County and potentially subject to trampling by cattle on neighboring lands. However, unlike the yellow-legged frog and spadefoot, these species may occur on linear Preserves that, while provided with minimum 600-foot buffers, lack the extensive hundred-acre buffers that protect yellow-legs and spadefoots. Therefore, some Incidental Take of this species, known to travel up to 1,000 feet from wetlands, is possible on neighboring lands.

In summary, planners found the potential for limited Incidental Take or accidental loss of individuals of the following SJMSCP Covered Species on neighboring lands primarily due to trampling by cattle with some accidental loss of individuals resulting from operation of vehicles and machinery : California tiger salamander, red-legged frog, valley elderberry longhorn beetle, giant garter snake (potential habitat), pond turtle, northern harrier, and the California horned lark. An evaluation of the potential levels of Incidental Take or accidental loss of individuals which might occur to these species finds (all estimates are for the life of the SJMSCP unless otherwise specified):

- Valley elderberry longhorn beetle (VELB). Take of this species on neighboring lands is anticipated only in the Primary Zone of the Delta. However, SJMSCP Preserves will not be established on at least two-thirds of lands in the Primary Zone of the Delta. In addition, activities which could potentially impact this species (e.g., removal of riparian vegetation for planting row and field crops) are unnecessary for many agricultural practices undertaken on lands in the Delta since such activities may undermine levees and create the threat of flooding. Some limited removal of elderberry shrubs could occur along ditches, canals, and

levees for flood control, however, these are normally removed long before the elderberry shrubs achieve the 1" at ground level preferred by the Valley elderberry longhorn beetle–therefore, only limited Take is anticipated due to such activities. Given the limitations of Preserve activities in the Delta and that few elderberries would require removal to allow for planting and harvesting of row and field crops, it is estimated that perhaps 75 elderberry shrubs could be removed on neighboring lands and, given the rarity of the valley elderberry longhorn beetle and its preference for mature elderberries, it is estimated that one-third of these shrubs (25 shrubs) removed in the Primary Zone of the Delta may host the VELB.

- Tiger salamander. It is believed that the California tiger salamander may be one of the most widely distributed of the SJMSCP Covered Species in San Joaquin County. Its reliance on rodent burrows, however, make it less likely to occur on at least some farms which adopt clean farming practices which eliminates many rodents and, therefore, available burrows for this species within row and field crops, thereby reducing its potential for take within row and field crops. However, while Conversion of the wetland habitats of this species are excepted from neighboring land protections, within dryland grazing areas, this species still may be trampled by cattle grazing in and around vernal pools, be struck on roads by vehicles, killed or injured by operation of equipment during plowing or discing, or be killed by dewatering of stock ponds when eggs or larvae are present. This take may be reduced somewhat because the tiger salamander is likely to move outside of its wetland areas and into unprotected uplands mostly during the cooler night hours when both farmers and cattle may be less active. Given these considerations, it is estimated that 30-50 individuals of this species may be subject to Incidental Take on neighboring lands.

- Northern harrier. Based on reports of nest destruction received from time to time by the local Audubon Society, it is anticipated that between one and two nests are destroyed each year within the County accidentally due to existing agricultural practices. This same level of loss of nests is, therefore, anticipated to occur on neighboring lands.

- California horned lark. The horned lark favors nesting areas which have minimal or no grass. This is not the preferred location for cattle which favor "greener" pastures. This potentially contributes to protecting horned lark nests from trampling by cattle. Similarly, the horned lark is unlikely to favor planted crop lands with extensive vegetation. Instead, the species is more likely to find a barren area to scrape out a nesting site somewhat removed from the field's planting area. Given these limiting factors and the relatively limited distribution of this species in comparison to the northern harrier, it is estimated that no more than one dozen nests could be partially or wholly disturbed accidentally by cattle as a result of activities on neighboring lands.

- Red-legged frog. Analysis of the impacts to this species are based on on-going studies of the red-legged frog. These studies indicate that the species will venture into upland grasslands adjacent to wetland habitats up to 1,000 feet. The SJMSCP requires buffers of 600 feet consistent with the distances that the majority of red-legged frogs travel from wetlands areas (longer distances increase jeopardy of desiccation and other risks). Therefore, red-legged frogs face the potential to be trampled by grazing cattle for a distance of 400 feet around the perimeter of SJMSCP Preserves (the difference between the

minimum buffer requirement for SJMSCP Preserves and the maximum known distance that these species can travel from occupation sites). Given the limited distribution of this species (eight occupied sites in the County) and that cattle are not widely prevalent in San Joaquin County, it is estimated that up to one dozen individuals of the species may both 1) travel more than 600 feet from their wetland habitats and outside of SJMSCP Preserves and 2) face trampling within the relatively narrow 400-foot boundary between Preserves and neighboring lands occupied by scattered cattle dispersed over hundreds of acres on neighboring lands.

- Pond turtle. The same evaluation pertaining to red-legged frogs also pertains to the pond turtle. However, this species is much more widely distributed than the red legged frog with nearly 37 occupation sites and 171 individual occurrences found in the *SJMSCP GIS Database*. In addition, trampling of these species by cattle, while it might be considered "harassment" of the individual, does not presume that this species will be killed or even injured. Due to its protective shell, many pond turtles which may be subject to trampling from cattle are likely to survive by drawing themselves into their shell. The trampling of the turtle's eggs by cattle, however, is more likely to result in take of this species. While an unlikely occurrence given the relatively few cattle in San Joaquin County, it is estimated that up to six turtle nests may be damaged by trampling.

- Giant garter snake. Given the limited distribution of this species in the County (only eight occupied sites) and prohibition of Take on known occupied habitat for the species when the species is present on neighboring lands prior to establishment of an SJMSCP Preserve, the requirements of the SJMSCP Preserve strategy to acquire occupied giant garter snake sites and the snake's relatively good mobility, injury to this species would have to occur as a result of a coincidence between the snake leaving an occupied ditch at the same time as the farmer is plowing a nearby field, or due to ground disturbance while snakes are hibernating during their inactive period. Given the rarity of this species, it is anticipated that Take of this species on neighboring lands will be limited to Take of potential habitat for the species with some limited kill of individuals.

Finally, SJMSCP Planners evaluated the potential benefits to SJMSCP Covered Species of extending neighboring land protections. In contrast to the preceding impacts, neighboring land protections are anticipated to result in improved habitat for all SJMSCP Covered Species due to the following:

- Neighboring land protections will encourage neighboring land enhancements for SJMSCP Covered Species. Many local landowners do not plant trees within riparian corridors or plant hedgerows, and are reluctant to forego the use of rodenticides and pesticides and to adopt similar plant, fish and wildlife-friendly practices that would provide habitat and food for SJMSCP Covered Species because they fear that attracting these species to their land will invite prosecution under the state and federal endangered species acts. These fears of prosecution and the economic hardship that would result if agricultural practices were prohibited reduce the use of plant, fish and wildlife-friendly practices by landowners who would otherwise like to attract and sustain plants, fish and wildlife on their land. With assurances against prosecution, it is anticipated that an increased number of local landowners will pursue these activities and enhance properties for SJMSCP Covered Species. SJMSCP Planners already have been approached by a local farmer to provide neighboring land

protections for the primary purpose of allowing the farmer to enhance riparian vegetation on neighboring lands.

- Neighboring land protections remove perceived disincentives for maintaining existing habitats and foregoing destructive agricultural practices on neighboring lands. In addition to encouraging the creation or enhancement of plant, fish and wildlife habitat by landowners who wish to manage their land actively for plants, fish and wildlife, the landowner protection provisions will also assure other landowners that there is no need to remove or exclude plant, fish and wildlife habitat. Many landowners in San Joaquin County perceive the need to remove existing habitat (e.g., oak trees within fields, riparian vegetation, vernal pools) for SJMSCP Covered Species out of fear that the habitat will attract these species and create legal obstacles to the continuing operations of their farms pursuant to the state and federal endangered species acts. While these landowners may not wish to manage their lands actively to attract and sustain plants, fish and wildlife, they are likely to allow habitat within their land to remain and thrive if the perceived disincentive for doing so is removed.

In short, it is anticipated that neighboring land protections will remove the fear of prosecution for landowners, will encourage both active and passive management of neighboring lands for SJMSCP Covered Species and will result in a potential **increase** in habitat values on neighboring lands throughout the County.

Although the effects of agricultural practices on neighboring lands are balanced strongly in favor of protecting and encouraging the survival of SJMSCP Covered Species as a group, certain practices occurring on neighboring lands could result in Incidental Take or accidental loss of limited numbers of California tiger salamander, red-legged frog, valley elderberry longhorn beetle, giant garter snake (potential habitat), pond turtle, northern harrier, and the California horned lark. To offset the potential impacts to these species on neighboring lands, the SJMSCP requires the establishment of 600 acres of Preserves. This 600 acre total is adopted based on the minimum Preserve sizes established by the SJMSCP's Biological Analysis of species needs as necessary to support a population of those SJMSCP Covered Species which may be impacted by activities occurring on neighboring lands as follows:

- Valley elderberry longhorn beetle - 25 Acres. The SJMSCP requires the establishment of 25 Preserve acres to offset potential impacts to this species on neighboring lands. Section 5.4.4.1(A) establishes the Preserve size for riparian habitats in the Delta as 20 acres. With take estimated to be approximately 25 occupied elderberry shrubs, this total is increased slightly to 25 acres to provide compensation at the ratio of one acre of Preserve for every VELB-occupied elderberry shrub removed on neighboring lands.

- California tiger salamander, California horned lark, northern harrier - 250 Acres. Consistent with the habitat approach of the SJMSCP, the SJMSCP requires the establishment of 250 Preserve acres to offset potential impacts to these species on neighboring lands. Section 5.4.4.3(B) establishes the minimum Preserve acreage necessary to support a population mix including these species to be 250 acres.

- Giant garter snake and pond turtle - 150 Acres. Consistent with the habitat approach of the SJMSCP, the SJMSCP requires the establishment of 150 Preserve acres to offset potential impacts to these species on neighboring lands. Section 5.4.4.4(B) establishes the minimum

Preserve acreage necessary to support a population of this species mix to be 145 acres (2-3 miles with 400 foot buffer). The Preserve size of three miles was used in establishing this mitigation and the 145-acres is rounded up to require 150 acres of Preserve to offset potential impacts to these species occurring on neighboring lands.

- Red-legged frog and pond turtle - 40 Acres. The SJMSCP requires the establishment of 40 Preserve acres to offset potential impacts to this species on neighboring lands. Section 5.4.4.2(C) establishes the minimum Preserve acreage necessary to support a population this species to be 18 acres (.25 mile with a 600 foot buffer) and, pursuant to Section 5.4.4.4(C), up to 40 acres. Given the rarity of this species, the larger Preserve size of 40 acres is used to offset potential impacts to this species occurring on neighboring lands.

The required Preserve acreages for the preceding totals 465 acres. An additional 135 acres is included in the Plan to allow for increasing these compensation requirements if the monitoring plan established pursuant to Section 5.9.3.7 determines that impacts on neighboring lands are exceeding estimates or are having unanticipated effects on SJMSCP Covered Species.

D. Revisions to Neighboring Land Protection Provisions

The following changes to neighboring land protection provisions shall be accomplished through the minor amendment process described in Section 8.8.4 and require a public hearing:

Changes to Neighboring Land Protections with the potential to increase restrictions on routine and ongoing agricultural activities on neighboring lands or to reduce the level of protections afforded to neighboring lands pursuant to Section 5.3.3.4 as that Section is adopted on the Effective Date and excluding those changes listed in Section 8.8.3 (23-26). Plan amendments undertaken pursuant to this paragraph shall be approved or denied only after the JPA: 1) notifies the Permittee Cities allowing 30 days for the Permittee Cities to provide input; 2) notifies San Joaquin County (whether or not that entity is a Permittee) and allows 30 days for San Joaquin County to provide input; and 3) after the JPA holds a properly notice public hearing prior to taking a final action. Public hearing notices pursuant to this section shall be made at least 30 days in advance of the public hearing.

The following changes to neighboring land protection provisions shall be accomplished through the minor revisions process as established in Section 8.8.3.

- Modifying neighboring land protection exceptions (to extend neighboring land protection coverage to a neighboring land) based on biological survey data pursuant to Section 5.3.3.4,

- Establishing the contents/protocols for biological surveys undertaken to remove exceptions pursuant to neighboring land protections pursuant to Section 5.3.3.4 (to extend neighboring land protection coverage to a neighboring land),

- Establishing the need and Preserve design criteria for the 135 acres allocated for neighboring land protection Preserve lands pursuant to Section 5.3.3.4,

- Adjusting compensation ratios for neighboring land preserves from 1:167 (1 acre for every

167 acres of Preserves established) to not less than 1:200,

Neighboring land protection provisions, except as otherwise provided in paragraph (B)(3) above and within this Section, may be revised through the Adaptive Management Plan, as necessary and to the extent feasible, as new options are made available (e.g., alternative options may become available through adoption and/or implementation of new legislation or alternative methods as may be proven effective in other plans).

5.3.3.5 Notification of Non-Preserve Landowners/Interested Persons of New Preserve Acquisitions

A. In conjunction with JPA hearings to consider approval of new Preserve acquisitions, and in addition to the notification requirements described in Section 5.3.3.4(B) for neighboring land protections, the JPA shall:

1. Provide written notice to all landowners located within one-half (1/2) mile and extending to include an additional distance encompassing the next two parcels located outside of the 1/2 mile radius surrounding the proposed new SJMSCP Preserve site (i.e., all landowners with all or portions of parcels located within 1/2 mile of the proposed Preserve shall receive written notice **and** all parcels adjacent to the noticed parcels located within 1/2 mile shall receive notice **and** all parcels adjacent to the parcels adjacent to the 1/2 mile radius also shall receive written notification) of the proposed Preserve to be considered for acquisition at upcoming hearings; and

2. A notice shall be sent to the San Joaquin Farm Bureau, local jurisdictions and interested stakeholders as described in Section 5.4.1.4; and

3. Publish a public notice in a countywide circulation newspaper.

B. Notices shall include:

1. The Assessor's Parcel Numbers to be considered for addition to the SJMSCP Preserve System;

2. A general description of the parcel location sufficient for the general public to recognize the location of the proposed Preserve (normally an address or cross streets to be included);

3. The date, time and location of the hearing;

4. An address and deadline for submitting written comments for those unable to attend the hearing;

5. An address and phone number for obtaining additional information;

6. Bold lettering stating that parcel owners are responsible for providing notice to lessees of lands which may be affected by the JPA's decision.

C. Timing of Notifications shall be consistent with Sections 5.4.1.3 and 5.4.1.4.

5.3.3.6 Termination and Replacement of Easements by Preserve Landowners

The Preserve landowner may request that the JPA consider termination and replacement of a conservation easement on land within the SJMSCP Preserve system except for lands held by the California Department of Fish and Game which may be prevented by California law from undertaking such land exchanges. The JPA may approve a landowner's request for termination and replacement of an easement, subject to concurrence of the Permitting Agencies' representatives on the TAC, if:

1. The landowner provides a replacement easement of equivalent or better habitat value to the easement which is being terminated. The JPA shall determine, subject to the concurrence of the Permitting Agencies' representatives on the TAC, whether or not a replacement easement provides an equivalent or better habitat value to that of the easement being replaced; and

2. The replacement easement is obtained and recorded and a Preserve Management Plan is developed as discussed in SJMSCP Section 5.4.7.1, prior to termination of the existing easement.

The Permitting Agencies' representative on the TAC shall respond to the JPA's request for concurrence within 60 calendar days, to the maximum extent feasible, providing that the JPA submits sufficient documentation upon which the Permitting Agencies' representative on the TAC may base his or her decision.

Upon receiving concurrence from the Permitting Agencies' representatives on the TAC, the JPA may proceed with termination and replacement of an easement.

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: City of Stockton Ammonia Facilities Project

Lead Agency: City of Stockton Municipal Utilities Department | Contact Person: Michael Callahan

Mailing Address: 2500 Navy Drive | Phone: (209) 937-8994

City: Stockton | Zip: 95206 | County: San Joaquin

Project Location: County: San Joaquin | City/Nearest Community: Stockton

Cross Streets: White Forge Drive and Pinetown St. | Zip Code: 95212

Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W Total Acres: ____

Assessor's Parcel No.: ____ Section: ____ Twp.: ____ Range: ____ Base: ____

Within 2 Miles: State Hwy #: 99, 5, 4,12 | Waterways: Calaveras River, Sacramento-San Joaquin Delta

Airports: N/A | Railways: UPRR | Schools: Stockton & Lodi Unified

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☒ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ____ Other: ____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other: ____

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☒ Other: Water Utility

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational: ____
☐ Recreational: ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☒ Other: Water Facility Upgrades

Project Issues Discussed in Document:

☒ Aesthetic/Visual
☒ Agricultural Land
☒ Air Quality
☒ Archeological/Historical
☒ Biological Resources
☐ Coastal Zone
☒ Drainage/Absorption
☐ Economic/Jobs
☐ Fiscal
☒ Flood Plain/Flooding
☐ Forest Land/Fire Hazard
☒ Geologic/Seismic
☒ Minerals
☒ Noise
☒ Population/Housing Balance
☒ Public Services/Facilities
☒ Recreation/Parks
☒ Schools/Universities
☒ Septic Systems
☒ Sewer Capacity
☒ Soil Erosion/Compaction/Grading
☒ Solid Waste
☒ Toxic/Hazardous
☒ Traffic/Circulation
☒ Vegetation
☒ Water Quality
☒ Water Supply/Groundwater
☒ Wetland/Riparian
☒ Growth Inducement
☒ Land Use
☒ Cumulative Effects
☐ Other: ____

Present Land Use/Zoning/General Plan Designation:

Low Density Residential, Commercial, Public Facilities, General Industrial

Project Description: *(please use a separate page if necessary)*

Please refer to the Project Description section of the IS/MND.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

X	Air Resources Board	X	Office of Historic Preservation
	Boating & Waterways, Department of		Office of Public School Construction
X	California Emergency Management Agency	X	Parks & Recreation, Department of
	California Highway Patrol		Pesticide Regulation, Department of
X	Caltrans District # 10	X	Public Utilities Commission
	Caltrans Division of Aeronautics	X	Regional WQCB # 5
	Caltrans Planning	X	Resources Agency
X	Central Valley Flood Protection Board		Resources Recycling and Recovery, Department of
	Coachella Valley Mtns. Conservancy		S.F. Bay Conservation & Development Comm.
	Coastal Commission		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
	Colorado River Board		San Joaquin River Conservancy
X	Conservation, Department of		Santa Monica Mtns. Conservancy
	Corrections, Department of		State Lands Commission
X	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of	X	SWRCB: Water Quality
	Energy Commission		SWRCB: Water Rights
X	Fish & Game Region # 2		Tahoe Regional Planning Agency
	Food & Agriculture, Department of	X	Toxic Substances Control, Department of
X	Forestry and Fire Protection, Department of	X	Water Resources, Department of
X	General Services, Department of		
X	Health Services, Department of		Other:
X	Housing & Community Development		Other:
X	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date 1/11/2013 Ending Date 2/11/2013

Lead Agency (Complete if applicable):

Consulting Firm: Environmental Science Associates
Address: 2600 Capitol Ave
City/State/Zip: Sacramento/CA/95816
Contact: Robert Eckard
Phone: 916-231-1258

Applicant: City of Stockton
Address: 2500 Navy Drive
City/State/Zip: Stockton, CA 95206
Phone: 209-937-8994

Signature of Lead Agency Representative: _____ **Date:** _____

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.