

ADDENDUM - MITIGATED NEGATIVE DECLARATION

Livingston 1, 2, 3 TCP Removal
Treatment System Project
SCH #2018091025

July 2022

PREPARED FOR:

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Appendix A – Updated Biological Resources Report

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SECTION ONE – INTRODUCTION

This environmental document is an Addendum to the City of Livingston's *1, 2, 3 TCP Removal Treatment System Project* (Approved Project) Mitigated Negative Declaration (IS/MND), adopted on October 16, 2018 (State Clearinghouse #2018091025), by the City of Livingston. After filing the Notice of Determination, minor changes were made to the Project which included adding additional water wells, additional TCP treatment facilities and additional connecting pipelines. See Section Two – Project Description for the full description of the additional Project components. These additional components of the Project were not included in the original IS/MND and are being evaluated herein. As demonstrated in this Addendum, there are no additional impacts and the IS/MND continues to serve as the appropriate document addressing the environmental impacts of these changes, pursuant to California Environmental Quality Act (CEQA).

1.1 Addendum Purpose

When a proposed project is changed or there are changes in environmental setting, a determination must be made by the Lead Agency as to whether an Addendum or Subsequent EIR or MND is prepared. CEQA Guidelines Sections 15162 and 15164 sets forth criteria to assess which environmental document is appropriate. The criteria for determining whether an Addendum or Subsequent MND is prepared are outlined below. If the criteria below are true, then an Addendum is the appropriate document:

- No new significant impacts will result from the project or from new mitigation measures.
- No substantial increase in the severity of environment impact will occur.
- No new feasible alternatives or mitigation measures that would reduce impacts previously found not to be feasible have, in fact been found to be feasible.

Based upon the information provided in Section Three of this document, inclusion of the pipeline will not result in new significant impacts or substantially increase the severity of impacts previously identified in the IS/MND, and there are no previously infeasible alternatives that are now feasible. None of the other factors set forth in Section 15162(a)(3) are present.

As such, an Addendum is appropriate, and this Addendum has been prepared to address the environmental effects of the Project modifications.

1.2 Environmental Analysis and Conclusions

This Addendum addresses the environmental effects associated only with modifications to the Approved Project that have occurred since adoption of the original IS/MND. The conclusions of the analysis in this Addendum remain consistent with those made in the original IS/MND. No new significant impacts will result, and no substantial increase in severity of impacts will result from those previously identified in the IS/MND.

1.3 Incorporation by Reference

In compliance with CEQA Guidelines Section 15150, this Addendum has incorporated by reference the *Livingston 1, 2, 3, TCP Removal Treatment System Project IS/MND*, adopted by the City of Livingston on October 16, 2018 (State Clearinghouse #2018091025). Information from this document incorporated by reference into this Addendum have been briefly summarized in the appropriate section(s) which follow, and the relationship between the incorporated part of the referenced document and this Addendum has been described.

1.4 Addendum Process

As described in Section 1.1, an addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred.¹ An addendum need not be circulated for public review but can be included in or attached to the Final EIR or Mitigated Negative Declaration.² The decision-making body shall consider the addendum with the final EIR or adopted negative declaration prior to making a decision on the project.³ Once adopted, the Addendum, along with the original EIR or Negative Declaration, is placed in the Administrative Record, and the CEQA process is complete.

A copy of the Addendum will be transmitted to the State Clearinghouse.

¹ CEQA Guidelines, Section 15164(a)

² CEQA Guidelines, Section 15164(c)

³ CEQA Guidelines Section 15164(d)

SECTION TWO – PROJECT DESCRIPTION

2.1 Location and Setting

The City of Livingston (City) is located in Merced County in the San Joaquin Valley. Merced County is bordered by Mariposa County to the east, portions of Madera, Fresno and San Benito Counties to the south, portions of San Benito and Santa Clara counties to the west, and Stanislaus County and portions of Santa Clara and Tuolumne counties to the North.

The original Project Description contained the following location information:

The Project occurs in two separate areas of the City. A centralized treatment site, new storage tank and booster pump station, and Wells 8 and Well 9 are north of State Route 99 in the northern portion of the City. This Project area extends along North Main Street from Swan Street in the north to Crowell Street at the south in Sections 24 and 25 of Township 6 South, Range 11 East as shown on the U.S. Geological Survey (USGS) 1961 Cressey 7.5-minute quadrangle. Well 13, Well 17, and the proposed centralized treatment facility are south of State Route 99. This Project area extends generally west to east and then south from Joseph Gallo Park, east to Arakelian Park, and south along the Arena Canal to Sun Valley Avenue in Sections 26 and 35 of Township 6 South, Range 11 East as shown on the USGS 1961 Cressey and Arena 7.5-minute quadrangles (Figure 1).

Figure 1 – Original/Approved Project Footprint



Description of Additional Project Areas

Minor changes were made to the original Approved Project which consist of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines. The additional Project components are as follows:

- New water well (Well 19) and a centralized TCP treatment site on approximately 7.8 acres located 330 feet west of Davis Street and 100 feet north of Campbell Boulevard, adjacent to the Southern Pacific Railroad and Foster Farms (Figure 2).
- New TCP treatment site at Arakelian Park (approximately 1.3 acres); a new pipeline installation (approximately one mile of pipeline) from existing Well 12 and existing Well 17 to the new TCP treatment site at Arakelian Park; and a new pipeline (approximately 2,400 linear feet of pipeline) along Mont Cliff Avenue between existing Well 13 at Joseph Gallo Park and the proposed TCP treatment site at Arakelian Park. Arakelian Park is located south of Mont Cliff Way and northeast of the Arena Canal (Figure 3).
- New water well (Well 18) on approximately 0.33 acres northwest of the intersection of Davis Street and White Avenue (Figure 4).
- Existing TCP treatment facility at existing Well 8 will be expanded by approximately 1.5 acres and a new pipeline will be installed from Wells 9 and 18 to the TCP treatment site at Well 8 (Figure 4).

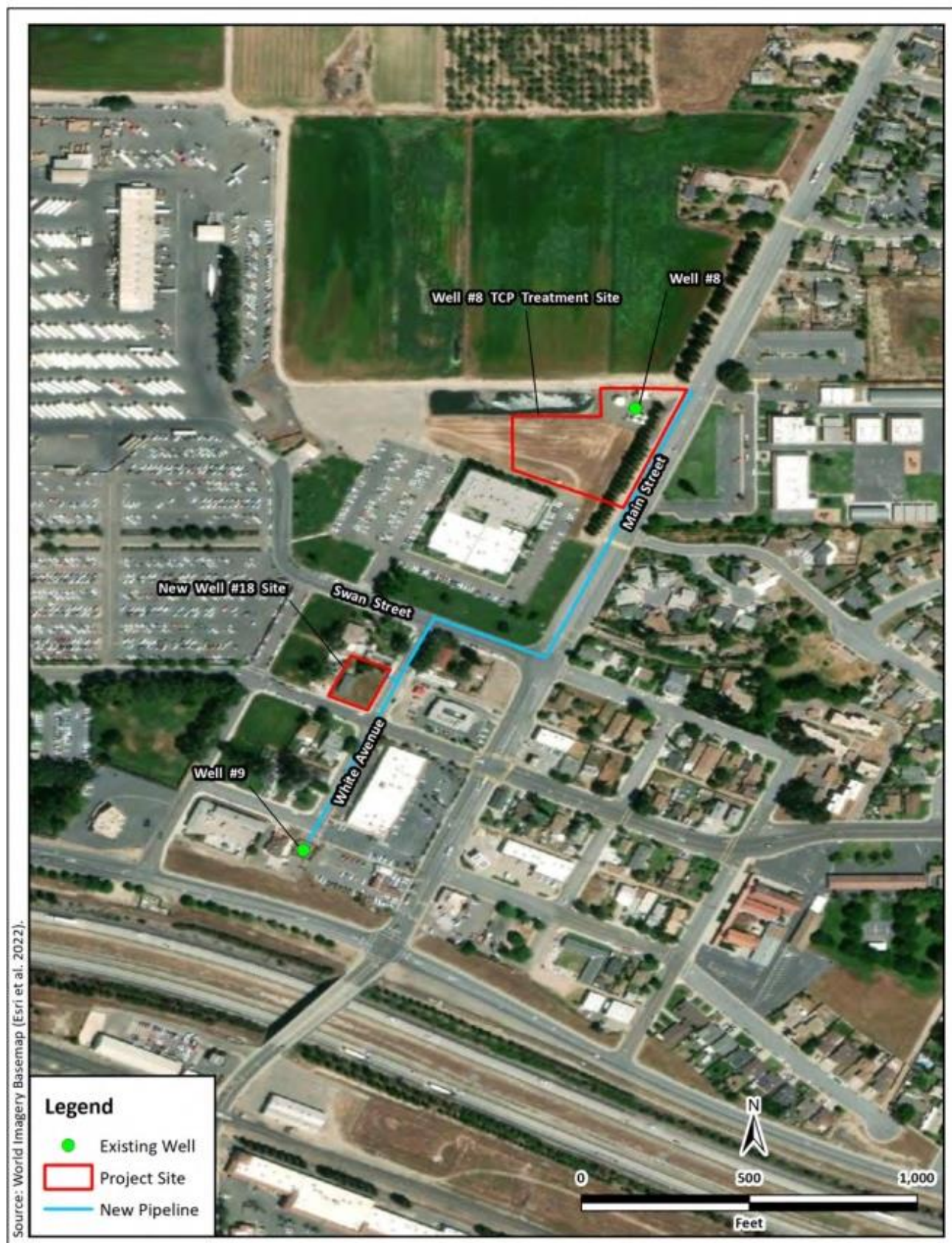
Figure 2 – New Well 19 and TCP Treatment Site



Figure 3 – New TCP Treatment Site at Arakelian Park and Associated Pipelines



Figure 4 – New Well 18 and Expanded TCP Treatment Site at Well 8



2.2 Project Description

Original IS/MND Project Description

The following is the Project Description that was included in the original IS/MND:

“The City plans to make several improvements to increase the City’s water system capacity and improve centralized proposed trichloropropane (TCP) treatment. Specifically, the Project will consist of installing new pipeline between existing Wells 8, 9, 13, and 17 and the proposed centralized treatment facilities; new treatment trains to the existing TCP centralized treatment facility; and a new treated water storage tank and booster pump station. Specifically, the Project will include:

- Installation of approximately 2,400 linear feet of 10-inch pipeline between Well 13 and the proposed centralized treatment facility;
- Installation of approximately 2,300 linear feet of 12-inch pipeline between Well 17 and the proposed centralized treatment facility;
- Installation of approximately 1,600 linear feet of 12-inch pipeline between Well 9 and the proposed centralized treatment facility;
- Improvements at the centralized treatment facility to include several treatment trains to the existing TCP treatment system, including two trains to Well 8, which is at the proposed centralized treatment site; and
- Construction of a 1.5-million-gallon storage tank and a 6,000-gallons-per-minute booster pump station at Well 8 to increase the City’s water system capacity to meet peak hour demand.”

Updates to the Original IS/MND Project Description

As described earlier, minor changes were made to the original Approved Project which consist of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines. The City proposes to install a treatment system to remove the pesticide impurity 1,2,3-Trichloropropane (TCP) from its water supply. TCP is a chlorinated hydrocarbon with high chemical stability. It has been used as a cleaning and degreasing solvent and also is associated with pesticide products. TCP causes cancer in laboratory animals (US EPA, 2009). It is reasonably anticipated to be a human carcinogen (NTP, 2014), and probably carcinogenic to humans, based on sufficient evidence of carcinogenicity in experimental animals (IARC, 1995). In 1992, TCP was added to the list of chemicals known to the state to cause cancer, pursuant to California's Safe Drinking Water and Toxic Enforcement Act (Proposition 65).

In 2017, the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) established a drinking water Maximum Contaminant Level (MCL) for TCP of 0.005µg/l. The MCL is at the same concentration as the analytical reporting limit.

The City will obtain financing from the Drinking Water State Revolving Fund (DWSRF). The DWSRF is administered by the State Water Resources Control Board and partially funded by a capitalization grant from the United States Environmental Protection Agency (EPA).

The additional Project components subject to evaluation in this Addendum are as follows:

- New water well (Well 19) and a centralized TCP treatment site on approximately 7.8 acres located 330 feet west of Davis Street and 100 feet north of Campbell Boulevard, adjacent to the Southern Pacific Railroad and Foster Farms (Figure 2).
- New TCP treatment site at Arakelian Park (approximately 1.3 acres); a new pipeline installation (approximately one mile of pipeline) from existing Well 12 and existing Well 17 to the new TCP treatment site at Arakelian Park; and a new pipeline (approximately 2,400 linear feet of pipeline) along Mont Cliff Avenue between existing Well 13 at Joseph Gallo Park and the proposed TCP treatment site at Arakelian Park. Arakelian Park is located south of Monte Cliff Way and northeast of the Arena Canal (Figure 3).
- New water well (Well 18) on approximately 0.33 acres northwest of the intersection of Davis Street and White Avenue (Figure 4).
- Existing TCP treatment facility at existing Well 8 will be expanded by approximately 1.5 acres and a new pipeline will be installed from Wells 9 and 18 to the TCP treatment site at Well 8 (Figure 4).

SECTION THREE – CEQA CHECKLIST

The purpose of the checklist is to evaluate the categories in terms of any changed condition (e.g., changed circumstances, project changes, or new information of substantial importance) that may result in a changed environment result (e.g., a new significant impact or substantial increase in the severity of a previously identified significant effect)⁴.

The questions posed in the checklist come from Appendix G of the CEQA Guidelines. A “no” answer does not necessarily mean that there are no potential impacts relative to the environmental category, but that there is no change in the condition or status of the impact since it was analyzed and addressed with mitigation measures in the IS/MND prepared for the project. These environmental categories might be answered with a “no” in the checklist, since the proposed project does not introduce changes that would result in modification to the conclusion of the adopted IS/MND.

3.1 Checklist Evaluation Categories

Conclusion in Prior IS/MND – This column provides a cross reference to the section of the IS/MND where the conclusion may be found relative to the environmental issue listed under each topic.

Do Proposed Changes Involve New Impacts? – Pursuant to CEQA Guidelines Section 15162(a)(1), this column indicates whether the changes represented by the revised project will result in new significant environmental impacts not previously identified or mitigated by the IS/MND, or whether the changes will result in a substantial increase in the severity of a previously identified significant impact.

New Circumstances Involving New Impacts? – Pursuant to CEQA Guidelines Section 15162(a)(2), this column indicates where there have been substantial changes with respect to the circumstances under which the project is undertaken that will require major revisions to the IS/MND, due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

New Information Requiring Analysis or Verification? – Pursuant to CEQA Guidelines Section 15162(a)(3)(a-d), this column indicates whether new information of substantial importance, which was

⁴ CEQA Guidelines Section 15162

not known and could not have been known with the exercise of reasonable diligence at the time the previous MND was certified as complete.

Adopted IS/MND Mitigation Measures – Pursuant to CEQA Guidelines Section 15162(a)(3), this column indicates whether the IS/MND provides mitigation measures to address effects in the related impact category.

3.2 Environmental Analysis

As explained in Section One, this comparative analysis has been undertaken pursuant to the provisions of CEQA Sections 15162 and 15164 to provide the City with the factual basis for determining whether any changes in the project, any changes in circumstances, or any new information since the IS/MND was adopted require additional environmental review or preparation of a Subsequent MND or EIR to the IS/MND previously prepared.

As described in Section Two, changes were made to the Approved Project description. Because of this, new analysis for impacts within the Project area is provided in this Section of the Addendum and are listed below:

I. AESTHETICS

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Have a substantial adverse effect on a scenic vista?	No impact.	No. There are no identified scenic vistas in the area.	No. There are no identified scenic vistas in the area.	No. There are no identified scenic vistas in the area.	None.
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No impact.	No. There are no scenic resources in the project area.	No. There are no scenic resources in the project area.	No. There are no scenic resources in the project area.	None.
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	Less Than Significant Impact.	No. The project would not substantially degrade site existing visual character.	No. The project would not substantially degrade site existing visual character.	No. The project would not substantially degrade site existing visual character.	None.
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less Than Significant Impact.	No. The project would not create a source of substantial light or glare.	No. The project would not create a source of substantial light or glare.	No. The project would not create a source of substantial light or glare.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have no impacts or less than significant impacts associated with impact areas I (a), (b), (c) or (d). This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional pipelines will be installed underground and will not be visible once constructed. The main visual impacts will occur from the new water wells (Wells 18 and 19), the new TCP treatment facility at Arakelian Park, and from the expanded TCP treatment facility at Well 8. These above ground structures will be noticeable from adjacent roadways and from some residents in the Project vicinity. These structures will be similar to other wells and treatment facilities in the City and will not impose structures that are out of scale or out of character with the urbanized areas. In addition, the above-ground structures will be surrounded by fencing or wall structures to shield the facilities from surrounding viewsheds.

The City of Livingston and Merced County General Plans do not identify any scenic vistas within the Project area; however, the Sierra Nevada Mountains to the east could be considered scenic. A scenic vista is generally considered a view of an area that has remarkable scenery or a resource that is indigenous to the area. The Project will not impede any views of the mountains, as the Project components aren't tall enough to impede views from existing residential developments.

Currently the sources of light in the project area are from streetlights, the vehicles traveling along surrounding roads, and security lights at the existing Wells # 8, 9, 13 and 17. No lighting will be associated with pipeline installation. The proposed new wells and TCP treatment facilities may include a minimal amount of additional security lighting; however, any additional lighting would not be expected to appreciably change any existing glare or lighting conditions because the visibility of the site from residential areas and public spaces and roadways is limited. This lighting will be directed downward and will not result in light "spillage" onto adjacent properties. Accordingly, the proposed Project would not create substantial new sources of light or glare.

Construction activities will occur as necessary for approximately 12 months and will be visible from the adjacent roadsides; however, the construction activities will be temporary in nature and will not affect a scenic vista, as none exist in the Project area. Therefore, the Project will continue to have less than significant impacts on aesthetics.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

II. AGRICULTURAL RESOURCES

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
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?	No Impact.	No. The project will not remove any land from agricultural production.	No. The project will continue to not remove any land from agricultural production.	No. The proposed project remains the same concerning agricultural resources.	None.
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact.	No. The project will not remove any land from agricultural production.	No. The project will not remove any land from agricultural production.	No. The proposed project remains the same concerning agricultural resources.	None.
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))?	No Impact.	No. The project will not remove any land from agricultural production.	No. The project will not remove any land from agricultural production.	No. The proposed project remains the same concerning agricultural resources.	None.
d. Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact.	No. There is no forest land on site.	No. There is no forest land on site.	No. The proposed project remains the same concerning	None.

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
				agricultural resources.	
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?	No Impact.	No. The project will not remove any land from agricultural production	No. The project will not remove any land from agricultural production	No. The proposed project remains the same concerning agricultural resources.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have no impact to agricultural or forest resources. This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The proposed Project additions will not cause the removal of any land from agricultural production, as the land is urbanized and not designated or used for agricultural or forestry purposes. Therefore, the Project will continue to have no impacts to agricultural or forest lands.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

III. AIR QUALITY

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Conflict with or obstruct implementation of the applicable air quality plan?	Less Than Significant Impact.	No. The project would not create new significant increases in air emissions that would conflict or obstruct implementation of an available air quality plan.	No. The project would not create new significant increases in air emissions that would conflict or obstruct implementation of an available air quality plan.	No. The project would not create new significant increases in air emissions that would conflict or obstruct implementation of an available air quality plan.	None.
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Less Than Significant Impact	No. The project would not introduce any new impacts related to air quality standards or violations not previously disclosed.	No. The project would not introduce any new impacts related to air quality standards or violations not previously disclosed.	No. The project would not introduce any new impacts related to air quality standards or violations not previously disclosed.	None.
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)?	Less Than Significant Impact.	No. The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.	No. The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.	No. The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.	None.

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
d. Expose sensitive receptors to substantial pollutant concentrations?	Less Than Significant Impact.	No. The project would not expose sensitive receptors to substantial pollutant concentrations.	No. The project would not expose sensitive receptors to substantial pollutant concentrations.	No. The project would not expose sensitive receptors to substantial pollutant concentrations.	None.
e. Create objectionable odors affecting a substantial number of people?	Less Than Significant Impact.	No. The project does not involve any land uses that would create additional objectionable odors.	No. The project does not involve any land uses that would create additional objectionable odors.	No. The project does not involve any land uses that would create additional objectionable odors.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have a less than significant impact on air quality. This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional Project components will not increase the severity of air quality impacts or result in an increase in emissions, as the pipeline itself does not emit emissions and operation of the additional water wells and TCP treatment facilities will not result in air emissions that exceed any Air District thresholds. The Air District rules and regulations identified in the IS/MND pertaining the original project description also apply to the additional areas.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

IV. BIOLOGICAL RESOURCES

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
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?	Less Than Significant Impact With Mitigation.	No. An updated Biological survey/report was prepared for the additional project components. The results indicated that there would be no additional impacts to protected species but mitigation measures from the original CEQA document shall also be applicable to the new project components.	No. An updated Biological survey/report was prepared for the additional project components. The results indicated that there would be no additional impacts to protected species but mitigation measures from the original CEQA document shall also be applicable to the new project components.	No. An updated Biological survey/report was prepared for the additional project components. The results indicated that there would be no additional impacts to protected species but mitigation measures from the original CEQA document shall also be applicable to the new project components.	BIO – 1
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?	No Impact.	No. The sites do not contain any biologically unique or riparian habitat.	No. The sites do not contain any biologically unique or riparian habitat.	No. The sites do not contain any biologically unique or riparian habitat.	None.
c. Have a substantial adverse effect on federally protected wetlands as defined by	No Impact.	No. The sites do not contain any wetlands or federally	No. The sites do not contain any wetlands or federally	No. The sites do not contain any wetlands or federally	None.

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
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?		protected waters.	protected waters.	protected waters.	
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?	Less Than Significant Impact With Mitigation.	No. The project will not interfere with any fish or wildlife movement or corridors. However, mitigation measures that protect nesting birds will be implemented.	No. The project will not interfere with any fish or wildlife movement or corridors. However, mitigation measures that protect nesting birds will be implemented.	No. The project will not interfere with any fish or wildlife movement or corridors. However, mitigation measures that protect nesting birds will be implemented.	BIO - 2
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact.	No. There are no applicable ordinances that impact the Project.	No. There are no applicable ordinances that impact the Project.	No. There are no applicable ordinances that impact the Project.	None.
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?	No Impact.	No. The City has not adopted any biological conservation plans.	No. The additional area was within the original survey area of the Project.	No. The City has not adopted any biological conservation plans.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have no impact associated with impact areas IV (b), (c), (e), or (f) and a less than significant impact, with mitigation, associated with impact areas IV (a) and (d). This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

Because of the additional Project components, an updated Biological Survey and Report (Appendix A of this Addendum) was prepared to address potential biological impacts associated with these additional sites.

The new Project sites support developed and ruderal land covers. The Well 19 TCP treatment site consisted of two percolation basins linked with a floodgate. The percolation basins were densely vegetated with nonnative grasses and forbs. Satellite imagery suggests the percolation basins have been periodically disked (Google 2022). The percolation basins were bounded by dirt access roads atop earthen berms. Industrial development was present north and east of the Well 19 TCP treatment site. Railroad tracks and ruderal grassland were present to the south and west.

The Arakelian Park TCP treatment site is bordered by Arena Canal to the south and west and surrounded by residential and urban development. Well 13 is on a paved lot at Joseph Gallo Park. The pipeline connecting Well 13 and the Arakelian Park TCP treatment site runs through a residential area along paved Mont Cliff Way. Well 17 is also on a paved lot. A ruderal field is immediately east of Well 17; residential development was present to the north, south, and west. Well 12 is on a paved lot adjacent to a school and a baseball field. Ruderal, disturbed land cover was present to the south and west. The pipelines connecting Well 12 and Well 17 to the Arakelian Park TCP treatment site run through paved streets surrounded by residential development.

The Well 8 TCP treatment site consists of a gravel lot and an undeveloped field with ruderal vegetation. Surrounding land cover included a grain field to the north, an evaporation pond to the west, and commercial development to the south and east. The new Well 18 site consists of a ruderal parcel surrounded by residential neighborhoods. Well 9 is on a paved lot surrounded by commercial development. The pipeline between Well 9, Well 18, and the Well 8 TCP treatment site runs along paved roads and is surrounded by commercial and residential development.

Colibri conducted additional biological surveys in June 2022. Based on the updated survey and report, there would be no additional impacts to biological resources. However, the mitigation measures included in the original IS/MND are also applicable to the additional area.

FINAL IS/MND MITIGATION MEASURES

BIO – 1 Protect nesting Swainson’s hawks

1. If work will occur during the Swainson’s hawk nesting season (15 March – 15 August), a qualified biologist shall conduct a survey for active Swainson’s hawk nests within 0.5 miles of the Project site no more than 14 days prior to the start of construction. If an active nest is found within 0.5 miles and the activity would disrupt nesting, a buffer or limited operating period should be implemented in consultation with the CDFW.

BIO – 2 Protect Nesting Birds

1. To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August. If it is not possible to schedule construction between September and January, preconstruction surveys for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during Project implementation. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas for nests. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

V. CULTURAL RESOURCES

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	Less Than Significant Impact With Mitigation.	No. An updated Cultural Resources Report was prepared to evaluate potential cultural resources that may be impacted by the additional Project components. As described in the Report, the additional area will not create any new impacts. No known historic, archaeological, or paleontological resources exist on site.	No. An updated Cultural Resources Report was prepared to evaluate potential cultural resources that may be impacted by the additional Project components. As described in the Report, the additional area will not create any new impacts. No known historic, archaeological, or paleontological resources exist on site.	No. An updated Cultural Resources Report was prepared to evaluate potential cultural resources that may be impacted by the additional Project components. As described in the Report, the additional area will not create any new impacts. No known historic, archaeological, or paleontological resources exist on site.	CUL - 1
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Less Than Significant Impact With Mitigation.	No. An updated Cultural Resources Report was prepared to evaluate potential cultural resources that may be impacted by	No. An updated Cultural Resources Report was prepared to evaluate potential cultural resources that may be impacted by	No. An updated Cultural Resources Report was prepared to evaluate potential cultural resources that may be impacted by the	CUL - 1

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
		the additional Project components. As described in the Report, the additional area will not create any new impacts. No known historic, archaeological, or paleontological resources exist on site.	the additional Project components. As described in the Report, the additional area will not create any new impacts. No known historic, archaeological, or paleontological resources exist on site.	additional Project components. As described in the Report, the additional area will not create any new impacts. No known historic, archaeological, or paleontological resources exist on site.	
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less Than Significant Impact With Mitigation.	No. The additional area will not create any new impacts. No known historic, archaeological, or paleontological resources exist on site.	No. The additional area was within the original records search area of the Project and the area is highly disturbed with no visible cultural resources.	No. The additional area was within the original records search area of the Project and the area is highly disturbed with no visible cultural resources.	CUL - 1
d. Disturb any human remains, including those interred outside of formal cemeteries?	Less Than Significant Impact.	No. The additional area will not create any new impacts. No known human remains exist on site.	No. The additional area will not create any new impacts. No known human remains exist on site.	No. The additional area will not create any new impacts. No known human remains exist on site.	CUL-1

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have a less than significant impact (with mitigation) on cultural resources. This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

A Cultural Resources Survey and Report (Appendix C of the original IS/MND) was conducted by Applied Earthworks (AE). AE conducted background research, completed a records search, reviewed the findings of the Native American Heritage Commission's Sacred Lands File search and reached out to local Native American tribal representatives, conducted a cultural resource survey within the Project Area of Potential Effects (APE), documented cultural resources present, evaluated two resources that would be directly impacted by the Project for eligibility to the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR), and prepared the technical inventory and evaluation reports. Based on the results of these efforts, it was determined that there were no cultural resources at the Project site.

Because of the additional Project components, an updated Cultural Resources Survey and Report (Appendix B of this Addendum) was prepared to address potential cultural impacts associated with these additional sites. Based on the updated survey and report, there would be no additional impacts to cultural resources. However, the mitigation measure included in the original IS/MND is also applicable to the additional areas.

FINAL IS/MND MITIGATION MEASURES

- CUL – 1** In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire Project area, all work in the vicinity of the find should be halted until a qualified archaeologist can assess the discovery and take appropriate actions as necessary.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

VI. Energy

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Not evaluated.	No. The project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	No. The project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	No. The project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	None.
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Not evaluated.	No. The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	No. The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	No. The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	None.

DISCUSSION

This topic was not included in the original IS/MND, as the 2018 version of the CEQA Guidelines did not require this evaluation. Therefore, the entire Project is being evaluated herein under this category.

The proposed Project involves the construction and operation of a TCP removal system as described in Chapter Two – Project Description. During construction, the Project would consume energy in two general forms: (1) the fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed

materials such as lumber and glass. Title 24 Building Energy Efficiency Standards would provide guidance on construction techniques for the wastewater pond to maximize energy conservation and it is expected that contractors and the City have a strong financial incentive to use recycled materials and products originating from nearby sources in order to reduce materials costs. As such, it is anticipated that materials used in construction and construction vehicle fuel energy would not involve the wasteful, inefficient, or unnecessary consumption of energy.

There would be minimal operational energy consumed by the water wells and TCP treatment facilities as these are passive activities. Operational energy will primarily be consumed during each vehicle trip associated with the proposed use; however, the Project site requires very little operator oversight and few trips are expected.

As discussed in Impact XVII – Transportation/Traffic, the proposed Project would not generate significant on-going additional vehicle trips. However, during construction there will be a temporary increase in vehicular trips to the Project site. The length of these trips and the individual vehicle fuel efficiencies are not known; therefore, the resulting energy consumption cannot be accurately calculated. Adopted federal vehicle fuel standards have continually improved since their original adoption in 1975 and assists in avoiding the inefficient, wasteful, and unnecessary use of energy by vehicles.

As discussed previously, the proposed Project would be required to implement and be consistent with existing energy design standards at the local and state level, such as Title 24. The Project would also be subject to energy conservation requirements in the California Energy Code and CALGreen for the new plant house. Adherence to state code requirements would ensure that the Project would not result in wasteful and inefficient use of non-renewable resources due to building operation. Therefore, any impacts are *less than significant*.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

Any impacts resulting from energy use are less than significant.

VII. GEOLOGY AND SOILS

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
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.	Less Than Significant Impact.	No. The project would not be exposed to fault rupture.	No. The project would not be exposed to fault rupture.	No. The project would not be exposed to fault rupture.	None.
ii. Strong seismic ground shaking?	Less Than Significant Impact.	No. The project would not increase exposure to risks associated with strong seismic ground shaking.	No. The project would not increase exposure to risks associated with strong seismic ground shaking.	No. The project would not increase exposure to risks associated with strong seismic ground shaking.	None.
iii. Seismic-related ground failure, including liquefaction?	Less Than Significant Impact.	No. The project would not increase exposure to seismic-related ground	No. The project would not increase exposure to seismic-related ground	No. The project would not increase exposure to seismic-related	None.

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
		failure including liquefaction.	failure including liquefaction.	ground failure including liquefaction.	
iv. Landslides?	Less Than Significant Impact.	No. The project would not increase exposure to landslides.	No. The project would not increase exposure to landslides.	No. The project would not increase exposure to landslides.	None.
b. Result in substantial soil erosion or the loss of topsoil?	Less Than Significant Impact.	No. The project would not result in soil erosion or the loss of topsoil.	No. The project would not result in soil erosion or the loss of topsoil.	No. The project would not result in soil erosion or the loss of topsoil.	None.
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?	Less Than Significant Impact.	No. The project would not increase exposure to risks associated with unstable geologic units or soils.	No. The project would not increase exposure to risks associated with unstable geologic units or soils.	No. The project would not increase exposure to risks associated with unstable geologic units or soils.	None.
d. Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?	Less Than Significant Impact.	No. The project would not increase exposure to risks associated with expansive soil.	No. The project would not increase exposure to risks associated with expansive soil.	No. The project would not increase exposure to risks associated with expansive soil.	None.
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not	No Impact.	No. The project would not implement septic tanks or alternative wastewater disposal systems.	No. The project would not implement septic tanks or alternative wastewater disposal systems.	No. The project would not implement septic tanks or alternative wastewater	None.

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
available for the disposal of waste water?				disposal systems.	
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less Than Significant Impact.	No. The project would not impact paleontological resources.	No. The project would not impact paleontological resources.	No. The project would not impact paleontological resources.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have a less than significant impact associated with impact areas VII (a), (b), (c), (d) and (f), and no impact on impact area VII (e). This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The original IS/MND identified that no active faults underlay the Project site and no substantial erosion or loss of topsoil will occur. Since no known surface expression of active faults is believed to cross the sites, fault rupture is not anticipated. The site is also not located on unstable soil. The same conclusions would apply to the proposed additional wells, TCP treatment facilities, and pipelines. The project does not include the use of septic tanks or other alternative wastewater disposal systems. No new impacts would occur.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

VIII. GREENHOUSE GAS EMISSIONS

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less Than Significant Impact.	No. The project would not generate a significant amount of greenhouse gas emissions.	No. The project would not generate a significant amount of greenhouse gas emissions.	No. The project would not generate a significant amount of greenhouse gas emissions.	None.
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less Than Significant Impact.	No. The project would not conflict with an applicable GHG reduction plan.	No. The project would not conflict with an applicable GHG reduction plan.	No. The project would not conflict with an applicable GHG reduction plan.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have a less than significant impact associated with impact areas VIII (a) and (b). This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional Project components will not substantially increase the severity of greenhouse gas emissions or conflict with any applicable plans or policies pertaining to greenhouse gases, as these Project components would not result in the Project exceeding established greenhouse gas emission thresholds. The Air District rules and regulations identified in the IS/MND pertaining the original project description also apply to the additional areas.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

Any impacts resulting from greenhouse gas emissions remain less than significant.

IX. HAZARDS AND HAZARDOUS MATERIALS

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less Than Significant Impact.	No. The project would not create new or increased impact involving hazardous materials.	No. The project would not create new or increased impact involving hazardous materials.	No. The project would not create new or increased impact involving hazardous materials.	None.
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?	Less Than Significant Impact.	No. The project would not create additional significant hazard to the public or environmental through reasonably foreseeable upset and accident conditions.	No. The project would not create additional significant hazard to the public or environmental through reasonably foreseeable upset and accident conditions.	No. The project would not create additional significant hazard to the public or environmental through reasonably foreseeable upset and accident conditions.	None.
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less Than Significant Impact.	No. There continues to be no school within one-quarter mile of the site.	No. There continues to be no school within one-quarter mile of the site.	No. There continues to be no school within one-quarter mile of the site.	None.
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?	No Impact.	No. The project is not designated as a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	No. The project is not designated as a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	No. The project is not designated as a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	None.
e. For a project located within an airport land	No Impact.	No. The project site is not within	No. The project site is not within	No. The project site is not within	None.

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
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?		two miles of a public or private airport.	two miles of a public or private airport.	two miles of a public or private airport.	
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact.	No. The project would not impair emergency evacuation or response.	No. The project would not impair emergency evacuation or response.	No. The project would not impair emergency evacuation or response.	None.
g. Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.	No Impact.	No. The project would not expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.	No. The project would not expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.	No. The project would not expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have no impact associated with impact areas IX (d), (e), or (g), and a less than significant impact associated with impact areas IX (a), (b), (c) and (f). This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional Project components will not increase any impacts associated with hazards and hazardous materials, as the additional components are related to the original Project and will not substantially increase the severity of hazard/hazardous materials impacts. The applicable rules and regulations identified in the original IS/MND regarding hazardous materials also apply to the additional areas.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

X. HYDROLOGY AND WATER QUALITY

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Less than Significant Impact.	No. The project would not violate water quality standards or waste discharge requirements.	No. The project would not violate water quality standards or waste discharge requirements.	No. The project would not violate water quality standards or waste discharge requirements.	None.
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Less than Significant Impact.	No. The project would not substantially deplete groundwater resources or impair groundwater recharge.	No. The project would not substantially deplete groundwater resources or impair groundwater recharge.	No. The project would not substantially deplete groundwater resources or impair groundwater recharge.	None.
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:					
i. Result in substantial erosion or siltation on or off site;	Less than Significant Impact.	No. The project would not result in substantial erosion or siltation on or off site.	No. The project would not result in substantial erosion or siltation on or off site.	No. The project would not result in substantial erosion or siltation on or off site.	None.
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;	Less than Significant Impact.	No. The Project would not substantially increase the rate or amount of surface runoff in a manner which	No. The Project would not substantially increase the rate or amount of surface runoff in a manner which	No. The Project would not substantially increase the rate or amount of surface runoff in a manner which	

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
		would result in flooding on or offsite.	would result in flooding on or offsite.	would result in flooding on or offsite.	
iii. 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; or	Less than Significant Impact.	No. The Project would not 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.	No. The Project would not 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.	No. The Project would not 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.	None.
iv. Impede or redirect flood flows?	Less than Significant Impact.	No. The Project would not impede or redirect flood flows.	No. The Project would not impede or redirect flood flows.	No. The Project would not impede or redirect flood flows.	None.
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No Impact.	No. The project would not risk release of pollutants due to project inundation.	No. The project would not risk release of pollutants due to project inundation.	No. The project would not risk release of pollutants due to project inundation.	None.
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No Impact.	No. The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No. The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No. The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have no impact associated with impact areas X (d) or (e) and a less than significant impact associated with impact areas X (a), (b), and (c). This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional Project components are intended to reduce the City's TCP levels and otherwise do not significantly increase impacts to hydrology and water quality beyond what was previously analyzed in the original IS/MND. The applicable rules and regulations identified in the original IS/MND regarding hydrology and water quality also apply to the additional areas. Therefore the impact remains less than significant.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

XI. LAND USE AND PLANNING

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Physically divide an established community?	No Impact.	No. The project would not divide an established community.	No. The project would not divide an established community.	No. The project would not divide an established community.	None.
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No Impact.	No. The project is consistent with the allowable land use.	No. The project is consistent with the allowable land use.	No. The project is consistent with the allowable land use.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have no impact on land use and planning. This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional Project components do not result in any changes to land use designations, divide an established community, or otherwise conflict with any plans or policies.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

XII. MINERAL RESOURCES

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
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?	No Impact.	No. The project would not result in the loss of known mineral resources.	No. The project would not result in the loss of known mineral resources.	No. The project would not result in the loss of known mineral resources.	None.
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?	No Impact.	No. The project would not result in the loss of known mineral resources.	No. The project would not result in the loss of known mineral resources.	No. The project would not result in the loss of known mineral resources.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have no impact on mineral resources. This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

There are no known mineral resources of importance to the region and the project site is not designated under the City’s General Plan as an important mineral resource recovery site. The additional Project components do not result in any additional impacts to mineral resources.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

XIII. NOISE

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Less Than Significant Impact.	No. The project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	No. The project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	No. The project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	None.
b. Generation of excessive groundborne vibration or groundborne noise levels?	Less Than Significant Impact.	No. The project would not generate excessive groundborne vibration or groundborne noise levels.	No. The project would not generate excessive groundborne vibration or groundborne noise levels.	No. The project would not generate excessive groundborne vibration or groundborne noise levels.	None.
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact.	No. There are no public or private airports or airstrips in the area.	No. There are no public or private airports or airstrips in the area.	No. There are no public or private airports or airstrips in the area.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have no impact associated with impact area XIII (c) and a less than significant impact associated with impact areas XIII (a) and (b). This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The proposed Project components will be installed in some areas where there is residential development and other sensitive receptors in the area (such as Arakelian Park). The electric motors for the TCP treatment vessels and for the water wells will be enclosed. Once these facilities are constructed, noise levels generated during normal operation would not exceed applicable noise standards established in the City of Livingston or Merced County Municipal Code. The proposed pipelines themselves to not emit on-going noise once constructed.

Neither the City of Livingston Municipal Code nor the Merced County Municipal Code identifies a short-term, construction-noise-level threshold. The distinction between short-term construction noise impacts and long-term operational noise impacts is a typical one in both CEQA documents and local noise ordinances, which generally recognize the reality that short-term noise from construction is inevitable and cannot be mitigated beyond a certain level. Thus, local agencies frequently tolerate short-term noise at levels that they would not accept for permanent noise sources. A more severe approach would be impractical and might preclude the kind of construction activities that are to be expected from time to time in urban environments. Most residents of urban areas recognize this reality and expect to hear construction activities on occasion. As the construction period will be brief and periodic, and construction hours would be limited to those established in the City's Municipal Code, any impacts would be less than significant.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

XIV. POPULATION AND HOUSING

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
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)?	No Impact.	No. The project would not induce substantial growth in the project area.	No. The project would not induce substantial growth in the project area.	No. The project would not induce substantial growth in the project area.	None.
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	No Impact.	No. The project will not displace existing housing.	No. The project will not displace existing housing.	No. The project will not displace existing housing.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have no impact associated with impact area XIV (a) and (b). This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional Project components do not increase any impacts to population and housing as there is no housing or commercial components to the Project.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

XV. PUBLIC SERVICES

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
Fire protection?	No Impact.	No. The project would not result in a need for new or expanded fire protection facilities.	No. The project would not result in a need for new or expanded fire protection facilities.	No. The project would not result in a need for new or expanded fire protection facilities.	None.
Police protection?	No Impact.	No. The project would not result in a need for new or expanded police protection facilities.	No. The project would not result in a need for new or expanded police protection facilities.	No. The project would not result in a need for new or expanded police protection facilities.	None.
Schools?	No Impact.	No. The project would not result in a need for new or	No. The project would not result in a need for new or	No. The project would not result in a need for new or	None.

		expanded school facilities.	expanded school facilities.	expanded school facilities.	
Parks?	No Impact.	No. The project would not result in a need for new or expanded park facilities.	No. The project would not result in a need for new or expanded park facilities.	No. The project would not result in a need for new or expanded park facilities.	None.
Other public facilities?	No Impact.	No. The project would not result in a need for new or expanded other facilities.	No. The project would not result in a need for new or expanded other facilities.	No. The project would not result in a need for new or expanded other facilities.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have a less than significant impact on public services. This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional Project components do not increase the need for public services, as there is no additional residential or commercial component of the Project and the Project is not considered growth inducing. Therefore, the proposed Project will not require additional public services. Therefore the impact remains less than significant.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

XVI. RECREATION

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No Impact.	No. The project would not result in the increased use of an existing park.	No. The project would not result in the increased use of an existing park.	No. The project would not result in the increased use of an existing park.	None.
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact.	No. The project would not result in a need for new or expanded park facilities.	No. The project would not result in a need for new or expanded park facilities.	No. The project would not result in a need for new or expanded park facilities.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have no impact on recreation. This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional Project components will not result in increased use of recreational facilities and the Project does not include recreational facilities. Therefore, the impact remains less than significant.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

XVII. TRANSPORTATION/TRAFFIC

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No Impact.	No. The project would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	No. The project would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	No. The project would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	None.
b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	No Impact.	No. The project would not conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).	No. The project would not conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).	No. The project would not conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).	None
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No Impact.	No. The project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	No. The project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	No. The project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	None.
d. Result in inadequate emergency access?	No Impact.	No. The project would not result in	No. The project would not result in	No. The project would not result in	None.

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
		inadequate emergency access.	inadequate emergency access.	inadequate emergency access.	

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have a less than significant impact on transportation. This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional Project components would not cause a substantial increase in traffic, reduce the existing level of service, or create any additional congestion at any intersections. The proposed Project would require periodic maintenance, approximately two trips per day. As such, level of service standards would not be exceeded and the proposed Project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. Therefore, the impact remains less than significant.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

XVIII. TRIBAL CULTURAL RESOURCES

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
h. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	Not evaluated.	No. The project is not listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	No. The project is not listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	No. The project is not listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	None.
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence,	Not evaluated.	No. The project is not a resource determined by the lead	No. The project is not a resource determined by the lead	No. The project is not a resource determined by the lead	None.

to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	
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DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have a less than significant impact on Tribal Cultural Resources. This Addendum evaluates the impact of adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The City of Livingston conducted the required tribal consultations for the Approved Project's CEQA document in 2018. However, because of the additional Project components being evaluated, the City conducted additional tribal consultation outreach in April of 2022. The City's cultural consultant (Applied Earthworks) contacted the Native American Heritage Commission (NAHC) who responded with a letter stating that the Sacred Lands File search for the Project did not indicate the presence of resources in the immediate vicinity of the APE. The NAHC also supplied a list of individuals to be contacted for information regarding locations of sacred or special sites of cultural and spiritual significance in the Project area. Consultation request letters were sent out to the tribes on April 11, 2022. As of July 2022, there have been no formal requests by any tribe for further consultation regarding the Project (See Appendix B of this Addendum for more information pertaining to tribal outreach efforts).

Therefore, the City has complied with the provisions of Public Resources Code Section 21080.3.2. Any impacts to tribal resources would be less than significant.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged

XIX. UTILITIES AND SERVICE SYSTEMS

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less Than Significant Impact.	No. The project itself is a water facility and would not require or result in the relocation or construction of new or expanded wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	No. The project itself is a water facility and would not require or result in the relocation or construction of new or expanded wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	No. The project itself is a water facility and would not require or result in the relocation or construction of new or expanded wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	None.
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	Less Than Significant Impact.	No. The Project will have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	No. The Project will have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	No. The Project will have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	None.
c. Result in a determination by the wastewater treatment provider which serves or may serve the project	Less Than Significant Impact.	No. The project would not result in a determination by the wastewater treatment provider which serves or	No. The project would not result in a determination by the wastewater treatment provider which serves or	No. The project would not result in a determination by the wastewater treatment	None.

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?		may serve the project that it does not has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	may serve the project that it does not has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	provider which serves or may serve the project that it does not has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less Than Significant Impact.	No. The project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	No. The project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	No. The project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	None.
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less Than Significant Impact.	No. The Project will comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	No. The Project will comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	No. The Project will comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	None.

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have a less than significant impact associated with this topic. This Addendum evaluates the impact of

adding additional water wells, additional TCP treatment facilities and additional connecting pipelines as described in Section Two – Project Description.

The additional Project components are intended to reduce the City's TCP levels and otherwise do not increase impacts to utilities or service systems. Therefore the impact remains less than significant.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

XX. WILDFIRE

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	Not evaluated.	No. The project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	No. The project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	No. The project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	None.
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Not evaluated.	No. The project would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	No. The project would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	No. The project would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	None
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or	Not evaluated.	No. The project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or	No. The project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or	No. The project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or	None.

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
ongoing impacts to the environment?		other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	Not evaluated.	No. The project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	No. The project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	No. The project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	None.

DISCUSSION

This topic was not included in the original IS/MND, as the 2018 version of the CEQA Guidelines did not require this evaluation. Therefore, the entire Project is being evaluated herein under this category.

The proposed Project involves the construction and operation of a TCP removal system as described in Chapter Two – Project Description. The proposed Project is located in areas that have been developed with intense urban uses and there are no areas within or adjacent to the Project Area that have a significant wildfire risk. The Project will include underground pipelines and minor above-ground improvements associated with the new wells and TCP treatment facilities. There is no increased risk or on-going risk of wildfire beyond existing conditions associated with the Project. As such, any wildfire risk to the project structures or people would be less than significant.

FINAL IS/MND MITIGATION MEASURES

None.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
<i>Would the project:</i>					
a. Does the project 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?	Less Than Significant Impact With Mitigation.	No. The project would not 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.	No. The project would not 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.	No. The project would not 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.	BIO – 1 BIO – 2 CUL – 1
b. Does the project 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	Less Than Significant Impact.	No. The project would not have cumulatively considerable impacts.	No. The project would not have cumulatively considerable impacts.	No. The project would not have cumulatively considerable impacts.	None.

Environmental Issue Area	Adopted IS/MND Conclusion	Do Proposed Changes Involve New Impacts?	New Circumstances Involving New Impacts?	New Information Requiring Analysis or Verification?	Adopted IS/MND Mitigation Measures
with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?					
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	Less Than Significant Impact With Mitigation.	No. The project would not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.	No. The project would not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.	No. The project would not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.	BIO – 1 BIO – 2 CUL – 1

DISCUSSION

The previously adopted Mitigated Negative Declaration determined that the proposed Project would have a less than significant impact regarding mandatory findings of significance. The additional Project components do not increase any impacts regarding mandatory findings of significance, as no additional impacts were identified.

FINAL IS/MND MITIGATION MEASURES

None.

CONCLUSION

The conclusions from the IS/MND remain unchanged.

Appendices

Appendix A

Updated Biological Resources Report

BIOLOGICAL RESOURCE EVALUATION

JUNE 2022

1,2,3-TCP REMOVAL TREATMENT SYSTEMS PROJECT
LIVINGSTON, MERCED COUNTY, CALIFORNIA



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Executive Summary

The City of Livingston proposes to construct centralized 1,2,3-trichloropropane (TCP) treatment systems at three locations in Livingston in Merced County, California (Project). The Project will involve installing 10-inch and 12-inch water pipeline, constructing two new centralized TCP treatment systems and associated well sites, and expanding one existing TCP treatment system. The purpose of this project is to remove TCP from the water supply. TCP, an impurity in certain pesticides, is present in the groundwater.

The City will obtain financing for the project from the Drinking Water State Revolving Fund (DWSRF). The DWSRF is a state and federal partnership that helps ensure safe drinking water. It is administered by the State of California and partially funded by the United States Environmental Protection Agency (EPA). Therefore, the project must not only meet environmental documentation and review requirements under the California Environmental Quality Act (CEQA) but must meet federal cross-cutting requirements as well.

To evaluate whether the project may affect biological resources under CEQA and federal cross-cutting purview, we (1) obtained official lists from the United States Fish and Wildlife Service and the California Department of Fish and Wildlife of special-status species and designated and proposed critical habitat, (2) reviewed other relevant background information such as satellite imagery and topographic maps, and (3) conducted a field reconnaissance survey of the Project site.

This biological resource evaluation summarizes existing biological conditions on the Project site, the potential for special-status species and regulated habitats to occur on or near the Project site, the potential impacts of the proposed project on biological resources and regulated habitats, and measures to reduce those potential impacts to a less-than-significant level under CEQA.

We concluded the project will not affect regulated habitats but could affect one special-status species, the state-listed as threatened Swainson's hawk (*Buteo swainsoni*), and nesting migratory birds, but effects can be reduced to less-than-significant levels with mitigation.

Abbreviations

Abbreviation	Definition
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGF	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
DWSRF	Drinking Water State Revolving Fund
EPA	Environmental Protection Agency
EFH	Essential Fish Habitat
FE	Federally listed as Endangered
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FP	State Fully Protected
FT	Federally listed as Threatened
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Association
NRCS	Natural Resources Conservation Science
SE	State listed as Endangered
SSSC	State Species of Special Concern
ST	State listed as Threatened
SWRCB	State Water Resources Control Board
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Introduction

1.1 Background

The City of Livingston (City) proposes to install pipeline and treatment systems to remove the pesticide impurity 1,2,3-trichloropropane (TCP) from its water supply. The City will obtain financing for this water system improvement project (Project) from the Drinking Water State Revolving Fund (DWSRF). The DWSRF is administered by the State Water Resources Control Board (SWRCB) and partially funded by a capitalization grant from the United States Environmental Protection Agency (EPA). Due to this federal nexus, issuing funds from the DWSRF constitutes a federal action, one that requires that the EPA determine whether the proposed action may affect federally protected resources. The Project must therefore comply with requirements of both the California Environmental Quality Act (CEQA) and certain federal environmental laws and regulations.

The purpose of this biological resource evaluation is to assess whether the Project will affect state- or federally protected resources pursuant to CEQA and federal cross-cutting regulatory guidelines. Such resources include species of plants or animals listed or proposed for listing under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA), as well as those covered under the Migratory Bird Treaty Act (MBTA), the California Native Plant Protection Act, and various other sections of the California Fish and Game Code. Biological resources considered here also include designated or proposed critical habitat recognized under the FESA. This biological resource evaluation also addresses Project-related impacts to regulated habitats, which are those under the jurisdiction of the United States Army Corps of Engineers (USACE), SWRCB, or California Department of Fish and Wildlife (CDFW), as well as those addressed under the Wild and Scenic Rivers Act, Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and Executive Order 11988 pertaining to floodplain management.

1.2 Project Description

The Project will involve (1) constructing a new Well #19 and centralized TCP treatment system on an approximately 7.8-acre site west of Foster Farms; (2) constructing a new centralized 1.3-acre TCP treatment site at Arakelian Park; (3) installing approximately 1.3 miles of pipeline connecting the new TCP treatment system at Arakelian Park to existing Well #12, Well #13, and Well #17; (4) constructing a new Well #18 on an approximately 0.33-acre site in north-central Livingston; (5) expanding the existing Well #8 TCP treatment system to approximately 1.5 acres; and (6) installing approximately 0.37 miles of pipeline to connect Well #9 and Well #18 with the expanded Well #8 TCP treatment system.

1.3 Project Location

The Project will include work at three locations in Livingston, Merced County, California (Figures 1–4). In northwest Livingston, the new Well #19 and TCP treatment site will be 330 feet west of Davis Street and 100 feet north of Campbell Boulevard adjacent to the Southern Pacific Railroad and Foster Farms (Figure 2).

In southwest Livingston, the new TCP treatment system will be constructed in the western quadrant of Arakelian Park south of Mont Cliff Way and northeast of Arena Canal. About 2400 linear feet of pipeline will be installed along Mont Cliff Way between Well #13 at Joseph Gallo Park and the proposed TCP treatment site at Arakelian Park. An additional 4600 linear feet of pipeline will be installed along Sun Valley Avenue, Lincoln Avenue, Peach Avenue, and Emerald Avenue connecting Well #12 and Well #17 with the proposed TCP treatment system at Arakelian Park (Figure 3).

In north central Livingston, a new Well #18 will be constructed on a 0.33-acre parcel northwest of the intersection of Davis Street and White Avenue. The existing Well #8 TCP treatment site, located west of Main Street and approximately 500 feet north of Swan Street, will be expanded to the south and west. About 1900 linear feet of pipeline will be installed along White Avenue, Swan Street, and North Main Street connecting Well #9 and Well #18 with the expanded Well #8 TCP treatment site (Figure 4).

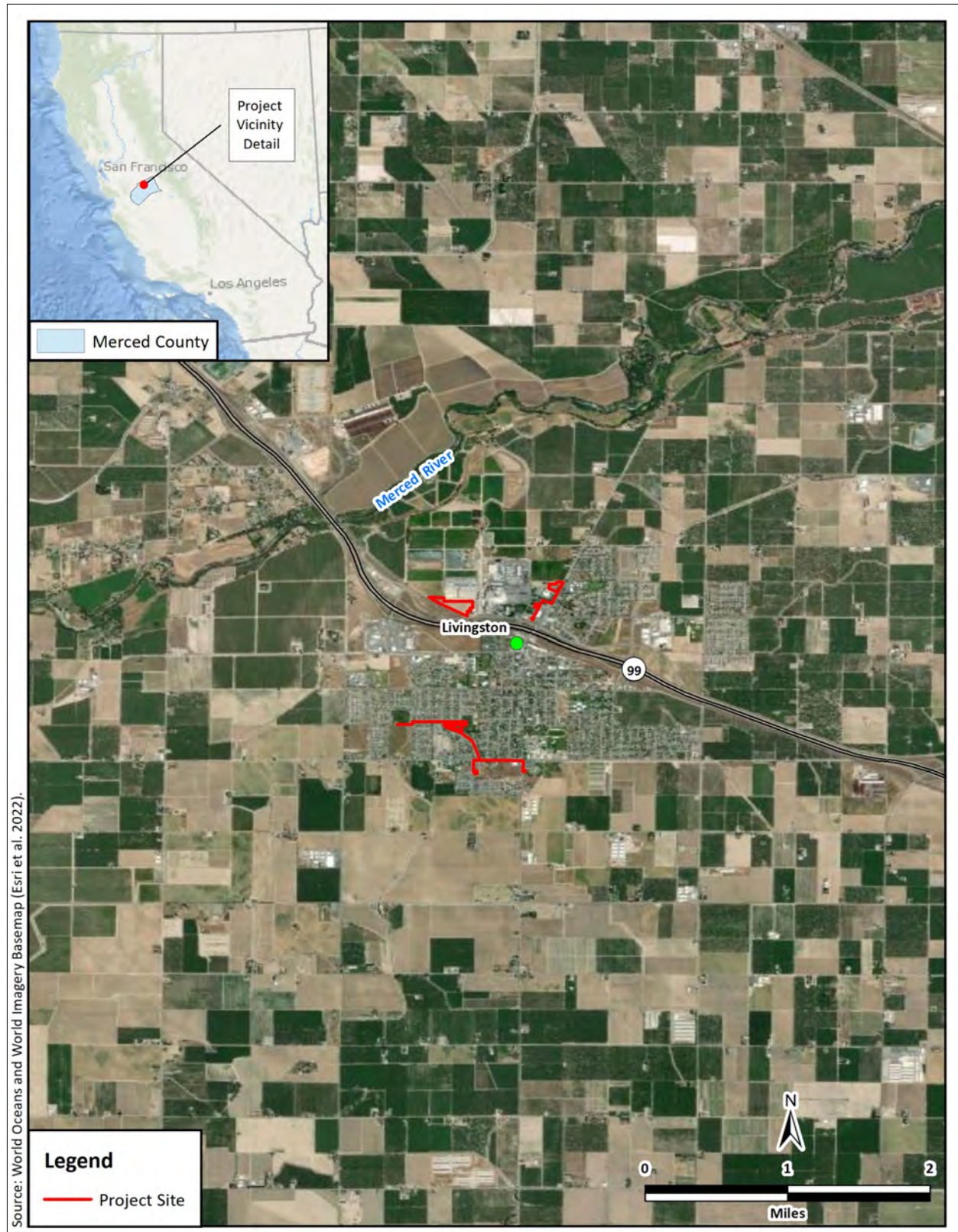


Figure 1. Project site vicinity map.



Figure 2. Northwest Livingston Project site map.



Figure 3. Southwest Livingston Project site map.



Figure 4. North-central Livingston Project site map.

1.4 Purpose and Need of Proposed Project

The purpose of the Project is to upgrade the City's water treatment systems. The Project is needed to remove TCP from the groundwater and meet increasing drinking water demands.

1.5 Consultation History

Lists of all species listed or proposed for listing as threatened or endangered and all designated or proposed critical habitat under the FESA that could occur near the Project site were obtained by Colibri Senior Scientist Ryan Slezak from the United States Fish and Wildlife Service (USFWS) website (<https://ecos.fws.gov/ipac/>) on 17 June 2022 (Appendix A).

1.6 Regulatory Framework

The relevant regulatory requirements and policies that guide the impact analysis of the Project are summarized below.

1.6.1 Federal Requirements

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act (16 USC § 668-668d), originally the Bald Eagle Protection Act, was enacted in 1940 to protect bald eagle (*Haliaeetus leucocephalus*), the species selected as a national emblem of the United States. The act was amended in 1962 to include the golden eagle (*Aquila chrysaetos*). As amended, the Act prohibits take, possession, and commerce of bald and golden eagles and their parts, products, nests, or eggs, except by valid permit. Take is defined as “*pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.*” Disturb means agitating or bothering to a degree that causes, or is likely to cause, injury, a decrease in productivity, or nest abandonment. This law also prohibits human-induced alterations near previously used nest sites when eagles are not present if upon the eagle's return it is disturbed as defined above. Take permits may be issued for conducting certain types of lawful activities such as scientific research, propagation, and Indian religious purposes. The USFWS is responsible for enforcing this act.

Executive Order 11988: Floodplain Management. Executive Order 11988 (42 Federal Register 26951, 3 CFR, 1977 Comp., p. 117) requires federal agencies to avoid to the extent possible the long-term and short-term adverse effects associated with occupying and modifying flood plains and to avoid direct and indirect support of developing floodplains wherever there is a practicable alternative.

Federal Endangered Species Act. The USFWS and the National Oceanographic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) enforce the provisions stipulated in the Federal Endangered Species Act of 1973 (FESA, 16 United States Code [USC] §

1531 et seq.). Threatened and endangered species on the federal list (50 Code of Federal Regulations [CFR] 17.11 and 17.12) are protected from take unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. Pursuant to the requirements of the FESA, an agency reviewing a proposed action within its jurisdiction must determine whether any federally listed species may be present in the project site and determine whether the proposed action may affect such species. Under the FESA, habitat loss is considered an effect to a species. In addition, the agency is required to determine whether the proposed action is likely to jeopardize the continued existence of any species that is listed or proposed for listing under the FESA (16 USC § 1536[3], [4]). Therefore, proposed action-related effects to these species or their habitats would be considered significant and would require mitigation.

Magnuson-Stevens Fishery Conservation and Management Act. The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (Public law 94-265; Statutes at Large 90 Stat. 331; 16 U.S.C. ch. 38 § 1801 et seq.) establishes a management system for national marine and estuarine fishery resources. This legislation requires that all federal agencies consult the NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect “essential fish habitat (EFH).” EFH is defined as “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The Magnuson-Stevens Act states that migratory routes to and from anadromous fish spawning grounds are considered EFH. The phrase “adversely affect” refers to any effect that reduces the quality or quantity of EFH. Federal activities that occur outside of EFH, but which may affect EFH must also be considered. The Act applies to salmon species, groundfish species, highly migratory species such as tuna, and coastal pelagic species such as anchovies.

Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA) (16 USC § 703, Supp. I, 1989) prohibits killing, possessing, trading, or other forms of take of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. “Take” is defined as the pursuing, hunting, shooting, capturing, collecting, or killing of birds, their nests, eggs, or young (16 USC § 703 and § 715n). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA specifically protects migratory bird nests from possession, sale, purchase, barter transport, import, and export, and take. For nests, the definition of take per 50 CFR 10.12 is to collect. The MBTA does not include a definition of an “active nest.” However, the “Migratory Bird Permit Memorandum” issued by the USFWS in 2003 and updated in 2018 clarifies the MBTA in that regard and states that the removal of nests, without eggs or birds, is legal under the MBTA, provided no possession (which is interpreted as holding the nest with the intent of retaining it) occurs during the destruction (USFWS 2018).

National Environmental Policy Act. The purposes of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. §§ 4321–4347), including all relevant subsequent guidelines and regulations, include encouraging “harmony between [humans] and their environment and promoting efforts which will prevent or eliminate damage to the environment...

and stimulate the health and welfare of [humanity]". The purposes of NEPA are accomplished by evaluating the effects of federal actions. The results of these evaluations are presented to the public, federal agencies, and public officials in document format (e.g., Environmental Assessments and Environmental Impact Statements) for consideration prior to taking official action or making official decisions. Environmental documents prepared pursuant to NEPA must be completed before federal actions can be implemented. The NEPA process requires careful evaluation of the need for action, and that federal actions be considered alongside all reasonable alternatives, including the No Action alternative. NEPA also requires that the potential impacts on the human environment be considered for each alternative. Detailed implementing regulations for NEPA are contained in 40 C.F.R. 1500 et seq.

United States Army Corps of Engineers Jurisdiction. Areas meeting the regulatory definition of "waters of the United States" (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States, the territorial seas, and wetlands adjacent to waters of the United States (33 CFR part 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual and related Regional Supplement (USACE 1987 and 2008). Construction activities, including direct removal, filling, hydrologic disruption, or other means in jurisdictional waters are regulated by the USACE. The placement of dredged or fill material into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The SWRCB is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

Wild and Scenic Rivers Act. The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with significant natural, cultural, and recreational values in a free-flowing condition. The Act safeguards the special character of these rivers, while also recognizing the potential for their appropriate use and development.

1.6.2 State Requirements

California Department of Fish and Wildlife Jurisdiction. The CDFW has regulatory jurisdiction over lakes and streams in California. Activities that divert or obstruct the natural flow of a stream; substantially change its bed, channel, or bank; or use any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFW in accordance with California Fish and Game Code Section 1602.

California Endangered Species Act. The California Endangered Species Act (CESA) of 1970 (Fish and Game Code § 2050 et seq., and California Code of Regulations [CCR] Title 14, Subsection 670.2, 670.51) prohibits the take of species listed under CESA (14 CCR Subsection 670.2, 670.5). Take is defined as hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill. Under CESA, state agencies are required to consult with the CDFW when preparing CEQA documents. Consultation ensures that proposed projects or actions do not have a negative effect on state-listed species. During consultation, CDFW determines whether take would occur and identifies “reasonable and prudent alternatives” for the project and conservation of special-status species. CDFW can authorize take of state-listed species under Sections 2080.1 and 2081(b) of the California Fish and Game Code in those cases where it is demonstrated that the impacts are minimized and mitigated. Take authorized under section 2081(b) must be minimized and fully mitigated. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Under CESA, CDFW is responsible for maintaining a list of threatened and endangered species designated under state law (Fish and Game Code § 2070). CDFW also maintains lists of species of special concern, which serve as “watch lists.” Pursuant to the requirements of CESA, a state or local agency reviewing a proposed project within its jurisdiction must determine whether the proposed Project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation. Impacts to species of concern or fully protected species would be considered significant under certain circumstances.

California Environmental Quality Act. The California Environmental Quality Act (CEQA) of 1970 (Subsections 21000–21178) requires that CDFW be consulted during the CEQA review process regarding impacts of proposed projects on special-status species. Special-status species are defined under CEQA Guidelines subsection 15380(b) and (d) as those listed under FESA and CESA and species that are not currently protected by statute or regulation but would be considered rare, threatened, or endangered under these criteria or by the scientific community. Therefore, species considered rare or endangered are addressed in this biological resource evaluation regardless of whether they are afforded protection through any other statute or regulation. The California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity (CNPS 2020). Plants with Rare Plant Ranks 1A, 1B, 2A, or 2B are considered special-status species under CEQA.

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if it 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 and endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (i.e., candidate species) would occur. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agency has an opportunity to designate the species as protected, if warranted.

California Native Plant Protection Act. The California Native Plant Protection Act of 1977 (California Fish and Game Code §§ 1900–1913) requires all state agencies to use their authority to carry out programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require the project proponent to notify CDFW at least 10 days in advance of any change in land use, which allows CDFW to salvage listed plants that would otherwise be destroyed.

Nesting birds. California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. California Fish and Game Code Section 3511 lists birds that are “Fully Protected” as those that may not be taken or possessed except under specific permit.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act (CWC § 13000 et. sec.) was established in 1969 and entrusts the SWRCB and nine Regional Water Quality Control Boards (collectively Water Boards) with the responsibility to preserve and enhance all beneficial uses of California’s diverse waters. The Act grants the Water Boards authority to establish water quality objectives and regulate point- and nonpoint-source pollution discharge to the state’s surface and ground waters. Under the auspices of the United States Environmental Protection Agency, the Water Boards are responsible for certifying, under Section 401 of the federal Clean Water Act, that activities affecting waters of the United States comply California water quality standards. The Porter-Cologne Water Quality Control Act addresses all “waters of the State,” which are more broadly defined than waters of the United States. Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state. They include artificial as well as natural water bodies and federally jurisdictional and federally non-jurisdictional waters. The Water Boards may issue a Waste Discharge Requirement permit for projects that will affect only federally non-jurisdictional waters of the State.

2.0 Methods

2.1 Desktop Review

We obtained a USFWS species list for the Project site as a framework for the evaluation and reconnaissance survey (USFWS 2022a, Appendix A). In addition, we searched the California Natural Diversity Data Base (CDFW 2022, Appendix B) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2022, Appendix C) for records of special-status plant and animal species from the vicinity of the Project site. Regional lists of special-status species were compiled using USFWS, CNDDDB, and CNPS database searches confined to the Cressey 7.5-minute United States Geological Survey (USGS) topographic quadrangle, which encompasses the Project site, and the eight surrounding quadrangles (Arena, Atwater, Denair, Montpelier, Stevinson, Turlock, Turlock Lake, and Winton). A local list of special-status species was compiled using CNDDDB records from within 5 miles of the Project site. Species that lack a CEQA-recognized special-status designation by federal or state regulatory agencies or public interest groups were omitted from the final list. Species for which the Project site does not provide habitat were eliminated from further consideration. We also reviewed satellite imagery from Google Earth (Google 2022) and other sources, USGS topographic maps, the Web Soil Survey (NRCS 2022), the National Wetlands Inventory (USFWS 2022b), the National Wild and Scenic Rivers System (USFWS 2022c), Federal Emergency Management Agency (FEMA 2022) flood maps, and relevant literature.

2.2 Reconnaissance Survey

Colibri Senior Scientist Ryan Slezak conducted a field reconnaissance survey of the Project site on 20 June 2022. The Project site and a 50-foot buffer surrounding the Project site were walked and thoroughly inspected to evaluate and document the potential for the area to support federally protected resources. The survey area also included a 0.5-mile buffer around the Project site to evaluate the potential occurrence of nesting special-status raptors (Figure 5). The 0.5-mile buffer was surveyed by driving public roads and identifying the presence of large trees or other potentially suitable substrates for nesting raptors as well as open areas that could provide foraging habitat. The main survey area, including the Project site and surrounding 50-foot buffer, was evaluated for the presence of regulated habitats, including lakes, streams, and other waters using methods described in the *Wetlands Delineation Manual* and regional supplement (USACE 1987, 2008) and as defined by the CDFW (<https://www.wildlife.ca.gov/conservation/lsa>) and under the Porter-Cologne Water Quality Control Act. All plants except those planted for cultivation or landscaping and all animals (vertebrate wildlife species) observed in the survey area were identified and documented.

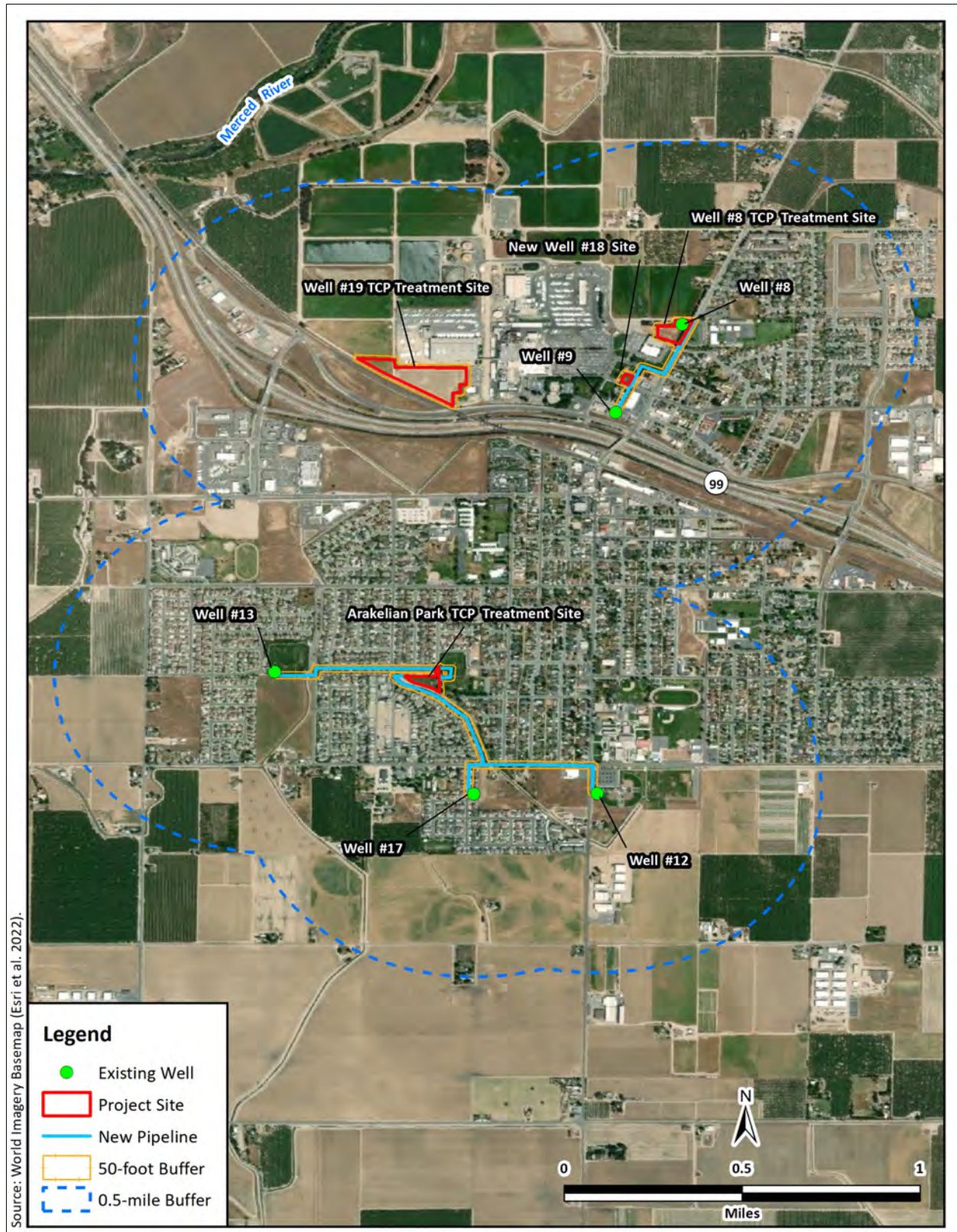


Figure 5. Reconnaissance survey area map.

2.3 Effects Analysis and Significance Criteria

2.3.1 Effects Analysis

Factors considered in evaluating the effects of the Project on special-status species included the (1) presence of designated or proposed critical habitat in the survey area, (2) potential for the survey area to support special-status species, (3) dependence of any such species on specific habitat components that would be removed or modified, (4) the degree of effects to the habitat, (5) abundance and distribution of the habitat in the region, (6) distribution and population levels of the species, (7) cumulative effects of the Project and any future activities in the area, and (8) the potential to mitigate any adverse effects.

Factors considered in evaluating the effects of the Project on bald eagle, golden eagle, and migratory birds included the potential for the Project to result in (1) mortality of eagles or migratory birds or (2) loss of their nests containing viable eggs or nestlings.

Factors considered in evaluating the effects of the Project on regulated habitats included the (1) presence of features comprising or potentially comprising waters of the United States, Wild and Scenic Rivers, essential fish habitat (EFH), floodplains, and lakes or streams within the survey area, and (2) potential for the Project to affect such habitats.

2.3.2 Significance Criteria

CEQA defines "significant effect on the environment" as "a substantial, or potentially substantial, adverse change in the environment" (Pub. Res. Code § 21068). Under CEQA Guidelines Section 15065, a Project's effects on biological resources are deemed significant where the Project would do the following:

- a) Substantially reduce the habitat of a fish or wildlife species,
- b) Cause a fish or wildlife population to drop below self-sustaining levels,
- c) Threaten to eliminate a plant or animal community, or
- d) Substantially reduce the number or restrict the range of a rare or endangered plant or animal.

In addition to the Section 15065 criteria, Appendix G within the CEQA Guidelines includes six additional impacts to consider when analyzing the effects of a project. Under Appendix G, a project's effects on biological resources are deemed significant where the project would do any of the following:

- e) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;

- f) 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 CDFW or USFWS;
- g) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- h) 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;
- i) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- j) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These criteria were used to determine whether the potential effects of the Project on biological resources qualify as significant.

3.0 Results

3.1 Desktop Review

The USFWS species list for the Project site included 13 species listed as threatened or endangered under the FESA (USFWS 2022a, Table 1, Appendix A). None of those species could occur on or near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, or (3) the presence of development that would otherwise preclude occurrence (Table 1). As identified in the species list, the Project site does not occur in USFWS-designated or proposed critical habitat for any species (USFWS 2022a, Appendix A).

Searching the CNDDDB for records of special-status species from the Cressey 7.5-minute USGS topographic quadrangle and the eight surrounding quadrangles produced 225 records of 57 species (Table 1, Appendix B). Of those 57 species, nine were not considered further because they are not CEQA-recognized as special-status species by state or federal regulatory agencies or public interest groups (Appendix B). Of the remaining 48 species, nine are known from within 5 miles of the Project site (Table 1, Figure 6). Of those species only one, Swainson's hawk (*Buteo swainsoni* – ST), could occur on or near the Project site (Table 1).

Searching the CNPS Inventory of Rare and Endangered Plants of California yielded 28 taxa (CNPS 2021, Appendix C), 23 of which have a CRPR of 1 or 2 (Table 1). None of those species are expected to occur on or near the Project site due to the lack of habitat (Table 1).

The Project site is underlain by Delhi loamy fine sand, 0 to 3% percent slopes (68.7%), Delhi sand, 0 to 3% slopes (30.7%), Delhi sand, silty substratum, 0 to 3% percent slopes (0.4%), Dello sand, poorly drained, 0 to 1% slopes (0.2%), and Dello sand 0 to 1% slopes (0.1%). The Project site is at an elevation of 126–139 feet above mean sea level (Google 2022).

Table 1. Special-status species, their listing status, habitats, and potential to occur on or near the Project site.

Species	Status ¹	Habitat	Potential to Occur ²
Federally and State-Listed Endangered or Threatened Species			
Colusa grass (<i>Neostapfia colusana</i>)	FT, SE, 1B.1	Vernal pools and depressions.	None. Habitat lacking; no records from within 5 miles.
Delta button-celery (<i>Eryngium racemosum</i>)	SE, 1B.1	Seasonally flooded depressions in clay soils.	None. Habitat lacking; no records from within 5 miles.
Greene's tuctoria (<i>Tuctoria greenei</i>)	FE, SR, 1B.1	Vernal pools in open grasslands.	None. Habitat lacking; no records from within 5 miles.
Hairy Orcutt grass (<i>Orcuttia pilosa</i>)	FE, SE, 1B.1	Vernal pools and depressions.	None. Habitat lacking; no records from within 5 miles.
Hoover's spurge (<i>Euphorbia hooveri</i>)	FT, 1B.2	Vernal pools and depressions.	None. Habitat lacking; no records from within 5 miles.
San Joaquin Valley Orcutt grass (<i>Orcuttia inaequalis</i>)	FT, SE, 1B.1	Vernal pools and depressions.	None. Habitat lacking; no records from within 5 miles.
Succulent owl's clover (<i>Castilleja campestris</i> var. <i>succulenta</i>)	FT, SE, 1B.2	Vernal pools and depressions.	None. Habitat lacking; no records from within 5 miles.
Conservancy fairy shrimp (<i>Branchinecta conservatio</i>)	FE	Vernal pools and depressions.	None. Habitat lacking; no records from within 5 miles.
Crotch bumble bee (<i>Bombus crotchii</i>)	SC	Grassland and scrub.	None. Habitat lacking; no records from within 5 miles.
Longhorn fairy shrimp ³ (<i>Branchinecta longiantenna</i>)	FE	Vernal pools and depressions.	None. Habitat lacking; the survey area no longer supports habitat for this species due to intensive agricultural and urban development.
Monarch California overwintering population (<i>Danaus plexippus</i>)	FC	Groves of trees within 1.5 miles of the ocean that produce suitable micro-climates for overwintering such as	None. Habitat lacking; the Project site is not within 1.5 miles of the ocean.

Species	Status ¹	Habitat	Potential to Occur ²
		high humidity, dappled sunlight, access to water and nectar, and protection from wind.	
Valley elderberry longhorn beetle ³ (<i>Desmocerus californicus dimorphus</i>)	FT	Elderberry (<i>Sambucus</i> sp.) plants with stems > 1-inch diameter at ground level.	None. Habitat lacking. No elderberry plants found in the survey area.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	Vernal pools; some artificial depressions, stock ponds, vernal swales, ephemeral drainages, and seasonal wetlands.	None. Habitat lacking; no records from within 5 miles.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE	Vernal pools, clay flats, alkaline pools, ephemeral stock tanks.	None. Habitat lacking; no records from within 5 miles.
Delta smelt (<i>Hypomesus transpacificus</i>)	FT, SE	River channels, tidally influenced sloughs.	None. Habitat lacking; no connectivity with such habitats.
Green sturgeon – Southern Distinct Population Segment (<i>Acipenser medirostris</i>)	FT	Bays and estuaries; larger coastal rivers with cool, deep, swift flowing reaches with gravel and cobble substrate for spawning.	None. Habitat lacking; no connectivity with such habitats.
Steelhead trout – Central Valley Distinct Population Segment ³ (<i>Oncorhynchus mykiss irideus</i>)	FT	Streams with adequate flows in coastal watersheds from Shasta to Fresno counties in California.	None. Habitat lacking; no connectivity with such habitats.
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	FE, SE, FP	Burrows for upland refuge, grasslands	None. Habitat lacking; no records from within 5 miles.
California red-legged frog (<i>Rana draytonii</i>)	FT, SSSC	Creeks, ponds, and marshes for breeding; burrows for upland refuge.	None. Habitat lacking; no records from within 5 miles.
California tiger salamander (<i>Ambystoma californiense</i>)	FT, ST	Vernal pools or other seasonal sources for breeding; underground	None. Habitat lacking; no records from within 5 miles.

Species	Status ¹	Habitat	Potential to Occur ²
		refuges for non-breeding.	
Giant gartersnake (<i>Thamnophis gigas</i>)	FT, ST	Marshes, sloughs, ponds, or other permanent sources of water with emergent vegetation, and grassy banks or open areas during active season; uplands with underground refuges or crevices during inactive season.	None. Habitat lacking; Arena Canal lacked emergent vegetation; no records from within 5 miles.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	SE, FP	Lakes, rivers, or other large water bodies for foraging. Large trees with open branches for nesting.	None. Habitat lacking; no records from within 5 miles.
Least Bell's vireo ³ (<i>Vireo bellii pusillus</i>)	FE, SE	Riparian forest with dense understory.	None. Habitat lacking.
Swainson's hawk ³ (<i>Buteo swainsoni</i>)	ST	Large trees for nesting with adjacent grasslands, alfalfa fields, or grain fields for foraging.	Present. A pair of Swainson's hawks were observed near Well #8 and again near Well #12. Many potential nest trees within 0.5 miles.
Tricolored blackbird ³ (<i>Agelaius tricolor</i>)	SE	Freshwater marsh, grassland.	None. Habitat lacking.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	FE, ST	Grassland and upland scrub.	None. Habitat lacking; no records from within 5 miles. Project location outside of current known range of this species.
State Species of Special Concern			
Hardhead (<i>Mylopharodon conocephalus</i>)	SSSC	Undisturbed areas of larger streams with high quality water.	None. Habitat lacking; no records from within 5 miles.
Western spadefoot (<i>Spea hammondi</i>)	SSSC	Open areas with sandy gravelly soils; rain pools for breeding.	None. Habitat lacking; no records from within 5 miles.
Coast horned lizard (<i>Phrynosoma blainvillii</i>)	SSSC	Open, generally sandy areas, washes, and flood plains in a variety of habitats.	None. Habitat lacking; no records from within 5 miles.

Species	Status ¹	Habitat	Potential to Occur ²
Northern California legless lizard ³ (<i>Anniella pulchra</i>)	SSSC	Natural areas with sandy loam soils and sparse vegetation.	None. Habitat lacking; percolation basins near Well #19 contained sandy soils, but soils were disturbed and densely vegetated.
Northwestern pond turtle ³ (<i>Emys marmorata</i>)	SSSC	Ponds, rivers, marshes, streams, and irrigation ditches, usually with aquatic vegetation. Need basking sites and upland habitat for egg laying.	None. Evaporation pond near Well #8 lacked aquatic vegetation; Arena Canal lacked aquatic vegetation and upland habitat for egg laying.
Burrowing owl (<i>Athene cunicularia</i>)	SSSC	Grassland and upland scrub with friable soil; some agricultural or other developed and disturbed areas with ground squirrel burrows.	None. Habitat lacking; no records from within 5 miles. No ground squirrel burrows or burrow surrogates found in the survey area.
Mountain plover (<i>Charadrius montanus</i>)	SSSC	Open, flat, and arid habitats with low, sparse vegetation.	None. Habitat lacking; no records from within 5 miles.
American badger (<i>Taxidea taxus</i>)	SSSC	Grassland and upland scrub.	None. Habitat lacking; no records from within 5 miles.
Pallid bat (<i>Antrozous pallidus</i>)	SSSC	Rocky outcrops, cliffs, and crevices near open habitat.	None. Habitat lacking; no records from within 5 miles.
Western mastiff bat (<i>Eumops perotis californicus</i>)	SSSC	Open, arid areas with high cliffs; open forests, woodlands, and grasslands for foraging.	None. Habitat lacking; no records from within 5 miles.
Western red bat (<i>Lasiurus blossevilli</i>)	SSSC	Trees for roosting within forested canyons and riparian zones; open areas for foraging.	None. Habitat lacking; no records from within 5 miles.
California Rare Plants			
Alkali milk-vetch (<i>Astragalus tener</i> var. <i>tener</i>)	1B.2	Alkali playas, valley and foothill grassland, and vernal pools.	None. Habitat lacking; no records from within 5 miles.

Species	Status ¹	Habitat	Potential to Occur ²
Alkali-sink goldfields ³ (<i>Lasthenia chrysantha</i>)	1B.1	Vernal pools and wet saline flats below 320 feet elevation.	None. Habitat lacking.
Brittlescale (<i>Atriplex depressa</i>)	1B.2	Vernal pools, grasslands, or upland scrub with alkaline or clay soils.	None. Habitat lacking; no records from within 5 miles.
California alkali grass (<i>Puccinellia simplex</i>)	1B.2	Scrub, meadows, seeps, grassland, and vernal pools.	None. Habitat lacking; no records from within 5 miles.
Coulter's goldfields (<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>)	1B.1	Grassland, vernal pools, playas, and sinks with alkaline soils.	None. Habitat lacking; no records from within 5 miles.
Heartscale (<i>Atriplex cordulata</i> var. <i>cordulata</i>)	1B.2	Grasslands, meadows and seeps, and chenopod scrub communities with saline or alkaline soils.	None. Habitat lacking; no records from within 5 miles.
Heckard's pepper-grass (<i>Lepidium latipes</i> var. <i>heckardii</i>)	1B.2	Grassland and vernal pools with alkaline soils.	None. Habitat lacking; no records from within 5 miles.
Hoover's calycadenia (<i>Calycadenia hooveri</i>)	1B.3	Rocky, exposed places; grasslands.	None. Habitat lacking; no records from within 5 miles.
Lesser saltscale (<i>Atriplex minuscula</i>)	1B.1	Chenopod scrub, playa, and grassland communities with sandy, alkaline soil.	None. Habitat lacking; no records from within 5 miles.
Merced monardella ³ (<i>Monardella leucocephala</i>)	1A	Grassland with sandy soils.	None. Habitat lacking; nearby CNDDDB occurrence record is presumed extirpated.
Prostrate vernal pool navarretia (<i>Navarretia prostrata</i>)	1B.1	Grassland, vernal pools, meadows, and seeps with alkaline soils.	None. Habitat lacking; no records from within 5 miles.
San Joaquin spearscale (<i>Extriplex joaquinana</i>)	1B.2	Alkali sink scrub, meadows, playas, or grassland.	None. Habitat lacking; no records from within 5 miles.
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)	1B.2	Freshwater marsh-wetlands.	None. Habitat lacking; no records from within 5 miles.

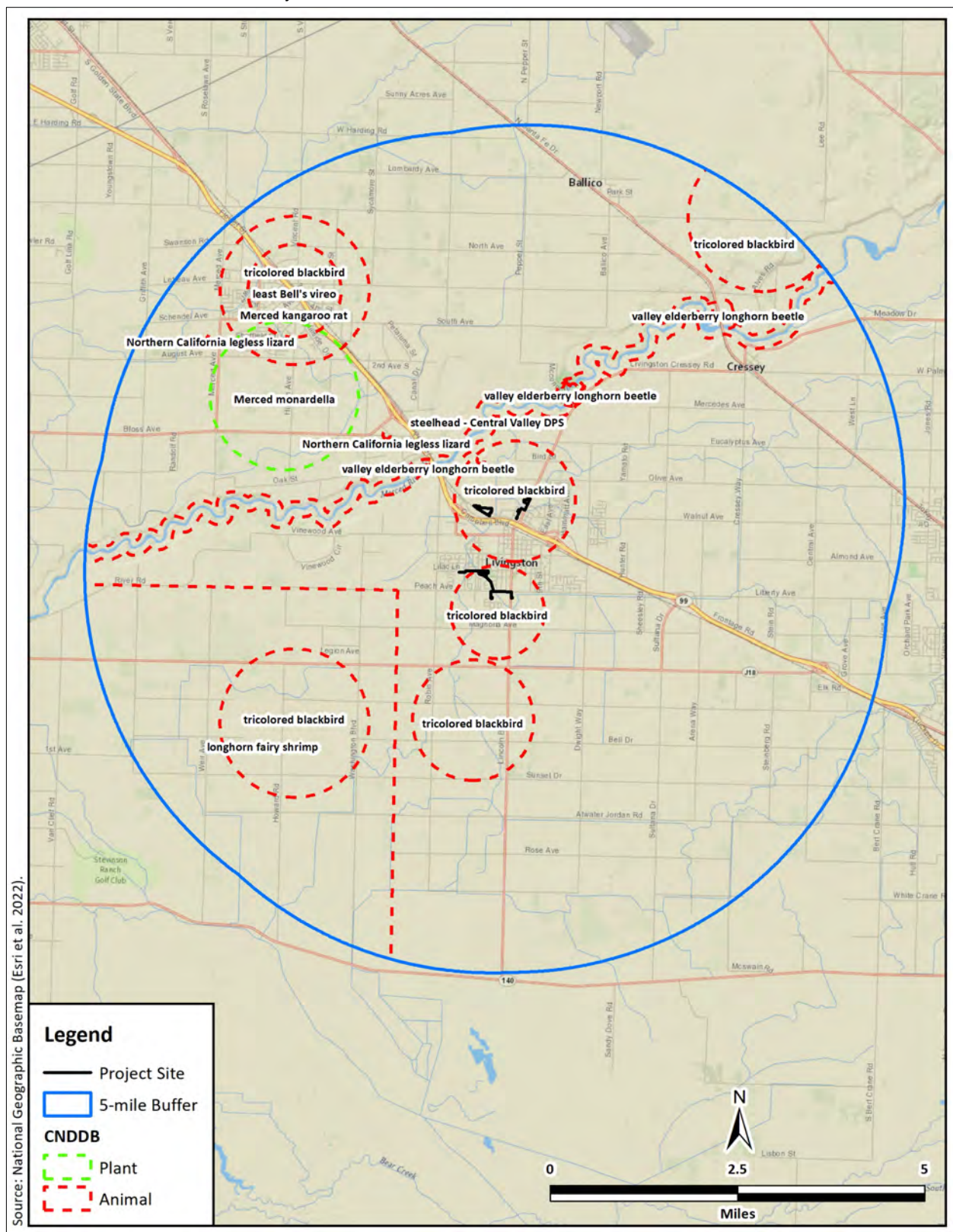
Species	Status ¹	Habitat	Potential to Occur ²
Subtle orache (<i>Atriplex subtilis</i>)	1B.2	Saline depressions.	None. Habitat lacking; no records from within 5 miles.
Vernal pool smallscale (<i>Atriplex persistens</i>)	1B.2	Alkaline vernal pools.	None. Habitat lacking; no records from within 5 miles.
Wright's trichocoronis (<i>Trichocoronis wrightii</i> var. <i>wrightii</i>)	2B.1	Vernal pools, riparian forest, marshes, swamps, meadows, seeps with alkaline soils.	None. Habitat lacking; no records from within 5 miles.

CDFW (2021), CNPS (2021), USFWS (2021a).

Status ¹	Potential to Occur ²
FC = Federal Candidate for Listing	None: Species or sign not observed; conditions unsuitable for occurrence.
FE = Federally listed Endangered	Low: Neither species nor sign observed; conditions marginal for occurrence.
FT = Federally listed Threatened	Moderate: Neither species nor sign observed; conditions suitable for occurrence.
FP = State Fully Protected	High: Neither species nor sign observed; conditions highly suitable for occurrence.
SC = State Candidate for Listing	Present: Species or sign observed; conditions suitable for occurrence.
SE = State listed Endangered	
ST = State listed Threatened	
SSSC = State Species of Special Concern	

CNPS California Rare Plant Rank ⁴ :	Threat Ranks ⁴ :
1A – plants presumed extirpated in California and either rare or extinct elsewhere.	0.1 – seriously threatened in California (> 80% of occurrences).
1B – plants rare, threatened, or endangered in California and elsewhere.	0.2 – moderately threatened in California (20-80% of occurrences).
2B – plants rare, threatened, or endangered in California but more common elsewhere.	0.3 – not very threatened in California (<20% of occurrences).
3 – plants about which more information is needed.	
4 – plants have limited distribution in California.	

³Record from within 5 miles of the Project site.



3.2 Reconnaissance Survey

3.2.1 Land Use and Habitats

The Project site supported developed and ruderal land covers. The Well #19 TCP treatment site consisted of two percolation basins linked with a floodgate (Figure 7). The percolation basins were densely vegetated with nonnative grasses and forbs. Satellite imagery suggests the percolation basins have been periodically disked (Google 2022). The percolation basins were bounded by dirt access roads atop earthen berms. Industrial development was present north and east of the Well #19 TCP treatment site. Railroad tracks and ruderal grassland were present to the south and west.

The Arakelian Park TCP treatment site was bordered by Arena Canal to the south and west and surrounded by residential and urban development (Figures 8 and 9). Well #13 was on a paved lot at Joseph Gallo Park (Figure 10). The pipeline connecting Well #13 and the Arakelian Park TCP treatment site runs through a residential area along paved Mont Cliff Way. Well #17 was also on a paved lot. A ruderal field was immediately east of Well #17; residential development was present to the north, south, and west. Well #12 was on a paved lot adjacent to a school and a baseball field. Ruderal, disturbed land cover was present to the south and west. The pipelines connecting Well #12 and Well #17 to the Arakelian Park TCP treatment site run through paved streets surrounded by residential development.

The Well #8 TCP treatment site consisted of a gravel lot and an undeveloped field with ruderal vegetation (Figure 11). Surrounding land cover included a grain field to the north, an evaporation pond to the west, and commercial development to the south and east. The new Well #18 site consisted of a ruderal parcel surrounded by residential neighborhoods (Figure 12). Well #9 is on a paved lot surrounded by commercial development. The pipeline between Well #9, Well #18, and the Well #8 TCP treatment site runs along paved roads and is surrounded by commercial and residential development.



Figure 7. Photograph of the Well #19 TCP Treatment site, looking northwest, showing a percolation basin.



Figure 8. Photograph of the Arakelian Park TCP treatment site, looking northwest, showing Arakelian Park and Arena Canal.



Figure 9. Photograph of the Arakelian Park TCP treatment site, looking west.



Figure 10. Photograph of the pipeline pathway through Joseph Gallo Park, looking west with Well #13 in the background.



Figure 11. Photograph of the Well #8 TCP treatment site, looking north with the existing Well #8 in the background.



Figure 12. Photograph of the new Well #18 site, facing west.

3.2.2 Plant and Animal Species Observed

Nonnative grasses such as Italian ryegrass (*Festuca perennis*) and Bermuda grass (*Cynodon dactylon*) and nonnative forbs such as cheeseweed (*Malva parviflora*) and redstem stork's bill (*Erodium cicutarium*) dominated open areas on the Project site. In all, 44 plant species (11 native and 33 nonnative) were found during the survey (Table 2). Fourteen bird species and one mammal species were also detected (Table 2).

Table 2. Plant and animal species observed during the reconnaissance survey.

Common Name	Scientific Name	Status
Plants		
Family Amaranthaceae		
Palmer's amaranth	<i>Amaranthus palmeri</i>	Native
Pigweed	<i>Amaranthus albus</i>	Nonnative
Family Asteraceae		
Annual bursage	<i>Ambrosia acanthicarpa</i>	Native
Common dandelion	<i>Taraxacum officinale</i>	Nonnative
Common sow thistle	<i>Sonchus oleraceus</i>	Nonnative
Common sunflower	<i>Helianthus annuus</i>	Native
Golden aster	<i>Heterotheca sessiliflora</i>	Native
Flax-leaved horseweed	<i>Erigeron bonariensis</i>	Nonnative
Prickly lettuce	<i>Lactuca serriola</i>	Nonnative
Telegraph weed	<i>Heterotheca grandiflora</i>	Native
Wire lettuce	<i>Stephanomeria pauciflora</i>	Native
Yellow star thistle	<i>Centaurea solstitialis</i>	Nonnative
Family Boraginaceae		
Common fiddleneck	<i>Amsinckia intermedia</i>	Native
Family Brassicaceae		
Shortpod mustard	<i>Hirschfeldia incana</i>	Nonnative
Wild radish	<i>Raphanus raphanistrum</i>	Nonnative
Family Caryophyllaceae		
Red sandspurry	<i>Spergularia rubra</i>	Nonnative
Family Chenopodiaceae		
Russian thistle	<i>Salsola tragus</i>	Nonnative
Family Cyperaceae		
Tall flatsedge	<i>Cyperus eragrostis</i>	Native
Family Fabaceae		
Bird's foot trefoil	<i>Lotus corniculatus</i>	Native
California burclover	<i>Medicago polymorpha</i>	Nonnative
Indian sweetclover	<i>Melilotus indicus</i>	Nonnative
White clover	<i>Trifolium repens</i>	Nonnative

Common Name	Scientific Name	Status
Family Fagaceae		
Valley oak	<i>Quercus lobata</i>	Native
Family Geraniaceae		
Redstem stork's bill	<i>Erodium cicutarium</i>	Nonnative
Family Malvaceae		
Cheeseweed	<i>Malva parviflora</i>	Nonnative
Family Molluginaceae		
Green carpetweed	<i>Mollugo verticillata</i>	Nonnative
Family Onagraceae		
Cutleaf evening primrose	<i>Oenothera laciniata</i>	Nonnative
Family Plantaginaceae		
Bird's eye speedwell	<i>Veronica persica</i>	Nonnative
Narrow leaved plantain	<i>Plantago lanceolata</i>	Nonnative
Family Poaceae		
Annual bluegrass	<i>Poa annua</i>	Nonnative
Annual rabbitsfoot grass	<i>Polypogon monspeliensis</i>	Nonnative
Barnyard grass	<i>Echinochloa crus-galli</i>	Nonnative
Bermuda grass	<i>Cynodon dactylon</i>	Nonnative
Italian ryegrass	<i>Festuca perennis</i>	Nonnative
Rattail sixweeks grass	<i>Festuca myuros</i>	Nonnative
Ripgut brome	<i>Bromus diandrus</i>	Nonnative
Soft brome	<i>Bromus hordeaceus</i>	Nonnative
Wild oat	<i>Avena fatua</i>	Nonnative
Family Polygonaceae		
Prostrate knotweed	<i>Polygonum aviculare</i>	Nonnative
Spotted ladythumb	<i>Persicaria maculosa</i>	Nonnative
Family Portulacaceae		
Common purslane	<i>Portulaca oleracea</i>	Nonnative
Family Salicaceae		
Narrow-leaf willow	<i>Salix exigua</i>	Native
Family Simaroubaceae		
Tree of heaven	<i>Ailanthus altissima</i>	Nonnative
Family Zygophyllaceae		
Puncture vine	<i>Tribulus terrestris</i>	Nonnative
Birds		
Family Accipitridae		
Red-tailed hawk	<i>Buteo jamaicensis</i>	MBTA, CFGC
Swainson's hawk	<i>Buteo swainsoni</i>	ST, MBTA, CFGC
Family Charadriidae		
Killdeer	<i>Charadrius vociferus</i>	MBTA, CFGC
Family Columbidae		

Common Name	Scientific Name	Status
Rock pigeon	<i>Columbia livia</i>	Nonnative
Eurasian collared-dove	<i>Streptopelia orientalis</i>	Nonnative
Family Corvidae		
American crow	<i>Corvus brachyrhynchos</i>	MBTA, CFGC
Family Fringillidae		
House finch	<i>Haemorhous mexicanus</i>	MBTA, CFGC
Family Hirundinidae		
Barn swallow	<i>Hirundo rustica</i>	MBTA, CFGC
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	MBTA, CFGC
Family Icteridae		
Red-winged blackbird	<i>Agelaius phoeniceus</i>	MBTA, CFGC
Family Passeridae		
House sparrow	<i>Passer domesticus</i>	Nonnative
Family Parulidae		
Yellow-rumped warbler	<i>Setophaga coronata</i>	MBTA, CFGC
Family Sturnidae		
European starling	<i>Sturnus vulgaris</i>	Nonnative
Family Tyrannidae		
Western kingbird	<i>Tyrannus verticalis</i>	MBTA, CFGC
Mammals		
Geomyidae		
Botta's pocket gopher	<i>Thomomys bottae</i>	--

MBTA = Protected under the Migratory Bird Treaty Act (16 USC § 703 et seq.); CFGC = Protected under the California Fish and Game Code (FGC §§ 3503 and 3513), ST = State-listed as Threatened.

3.2.3 Bald Eagle and Golden Eagle

The Project site and surrounding 0.5-mile buffer (Figure 5) lacked foraging and nesting habitat for bald eagle and golden eagle.

3.2.4 Nesting Birds and the Migratory Bird Treaty Act

Migratory birds could nest on or near the Project site. Bird species that may nest on or near the property include, but are not limited to, house finch (*Haemorhous mexicanus*), red-tailed hawk (*Buteo jamaicensis*), and American crow (*Corvus brachyrhynchos*). Numerous large trees within 0.5 miles of the Project site could provide nesting substrates for raptors.

3.2.5 Regulated Habitats

Arena Canal was within 50 feet of the Arakelian treatment site and associated pipeline pathways. As a stream and surface water in California, it would fall under the regulatory jurisdiction of the CDFW and SWRCB, respectively. However, no impacts to this feature are anticipated. The

nearest river, the Merced River, is about 1 mile north of the Project site. According to the Wild and Scenic Rivers Act, the designated wild and scenic reach of the river begins at its origin in Yosemite National Park and ends at Lake McClure, which is approximately 30 miles northeast of the Project site. Therefore, the portion of the Merced River north of the Project site is not included in the wild and scenic classification (USFWS 2022a).

No marine or estuarine fishery resources or migratory routes to and from anadromous fish spawning grounds are present in the survey area. In addition, no EFH, defined by the Magnuson-Stevens Act as those resources necessary for fish spawning, breeding, feeding, or growth to maturity, are present in the survey area.

The Project site is not within a flood plain (FEMA 2022). The nearest flood plain limit is along the Merced River, approximately 1 mile north of the Project site.

3.3 Special-Status Species

3.3.1 Swainson's Hawk

One special-status species, Swainson's hawk (*Buteo swainsoni*), could occur on or near the Project site based on the presence of habitat. Swainson's hawk is a state listed as threatened raptor in the family Accipitridae. It is a migratory breeding resident of Central California. It uses open areas including grassland, sparse shrubland, pasture, open woodland, and annual agricultural fields such as grain and alfalfa to forage on small mammals, birds, and reptiles. After breeding, it eats mainly insects, especially grasshoppers (Bechard et al. 2020). Swainson's hawks build small to medium-sized nests in medium to large trees near foraging habitat. The nesting season begins in March or April in Central California when this species returns to its breeding grounds from wintering areas in Mexico and Central and South America. Nest building commences within one to two weeks of arrival to the breeding area and lasts about one week (Bechard et al. 2020). One to four eggs are laid and incubated for about 35 days. Young typically fledge in about 38–46 days and tend to leave the nest territory within 10 days of fledging (Bechard et al. 2020). Swainson's hawks depart for the non-breeding grounds between August and September.

There is one species occurrence record of Swainson's hawk from within 5 miles of the Project site: a 2007 CNDDDB occurrence along the Merced River, approximately 1.6 miles north. A pair of Swainson's hawks were observed soaring over the Well #8 TCP treatment site and again near Well #12 during the 20 June 2022 reconnaissance survey. Potential nest trees were within 0.5 miles of all Project areas. Therefore, the species is present and could nest near the Project site.

4.0 Environmental Effects

4.1 Effects Determinations

4.1.1 Critical Habitat

We conclude the Project will have **no effect** on critical habitat as no critical habitat has been designated or proposed in the survey area.

4.1.2 Special-Status Species

We conclude the Project **may affect but is not likely to adversely affect** the state species of special concern Swainson's hawk. The Project is not expected to affect any other special-status species due to the lack of habitat or known occurrence records for those species near the Project site.

4.1.3 Migratory Birds

We conclude the Project **may affect but is not likely to adversely affect** nesting migratory birds.

4.1.4 Regulated Habitats

We conclude the Project will have **no effect** on regulated habitats as not impacts to regulated habitats are expected.

4.2 Significance Determinations

This Project, which will result in temporary impacts to urban and disturbed land, will not: (1) substantially reduce the habitat of a fish or wildlife species (criterion a) as no such habitat is present on the Project site; (2) cause a fish or wildlife population to drop below self-sustaining levels (criterion b) as no such potentially vulnerable population is known from the area; (3) threaten to eliminate a plant or animal community (criterion c) as no such potentially vulnerable communities are known from the area; (4) substantially reduce the number or restrict the range of a rare or endangered plant or animal (criterion d) as no such potentially vulnerable species are known from the area; (5) 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 CDFW or USFWS (criterion f) as no riparian habitat or other sensitive natural community was present in the survey area; (6) have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (criterion g) as no impacts to wetlands will occur; (7) conflict with any local policies or ordinances protecting biological resources, such as a tree

preservation policy or ordinance (criterion i) as no trees or biologically sensitive areas will be impacted; or (8) conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan (criterion j) as no such plan has been adopted. Thus, these significance criteria are not analyzed further.

The remaining statutorily defined criteria provided the framework for Criteria BIO1 and BIO2 below. These criteria were used to assess the impacts to biological resources stemming from the Project and provide the basis for determinations of significance:

- Criterion BIO1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (significance criterion e).
- Criterion BIO2: 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 (significance criterion h).

4.2.1 Direct and Indirect Effects

4.2.1.1 Potential Effect #1: Have a Substantial Effect on Any Special-Status Species (Criterion BIO1)

The Project has the potential to substantially impact the state-listed as threatened Swainson's hawk, which could nest near the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Loss of fertile eggs or nestlings, or any activities resulting in nest abandonment, would constitute a significant impact. We recommend that Mitigation Measure BIO1 (below) be included in the conditions of approval to reduce the potential impact to a less-than-significant level.

Mitigation Measure BIO1. Protect nesting Swainson's hawks.

1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, which extends from March through August.
2. If it is not possible to schedule construction between September and February, a qualified biologist shall conduct surveys for Swainson's hawk in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWTAC 2000, Appendix D). These methods require six surveys, three in each of the two survey periods, prior to project initiation. Surveys shall be conducted within a minimum 0.5-mile radius around the Project site.

3. If an active Swainson's hawk nest is found within 0.5 miles of the Project site, and the qualified biologist determines that Project activities would disrupt the nesting birds, a construction-free buffer or limited operating period shall be implemented in consultation with the CDFW.

4.2.1.2 Potential Effect #2: Interfere Substantially with Native Wildlife Movements, Corridors, or Nursery Sites (Criterion BIO2)

The Project has the potential to impede the use of nursery sites for native birds protected under the Migratory Bird Treaty Act (MBTA). Migratory birds are expected to nest on and near the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort can be considered take under the MBTA. Loss of fertile eggs or nesting birds, or any activities resulting in nest abandonment, could constitute a significant effect if the species is particularly rare in the region. Construction activities such as excavating, trenching, and grading that disturb a nesting bird in the Project site or immediately adjacent to the construction zone could constitute a significant effect. We recommend that the mitigation measure BIO2 (below) be included in the conditions of approval to reduce the potential effect to a less-than-significant level.

Mitigation Measure BIO2. Protect nesting birds.

1. To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August.
2. If it is not possible to schedule construction between September and January, pre-construction surveys for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during the implementation of the Project. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.

4.2.2 Cumulative Effects

The Project will involve installing pipeline and treatment systems to remove the pesticide impurity 1,2,3-trichloropropane from its water supply. The Project site provides potential nesting habitat for migratory birds including Swainson's hawk. However, implementing Mitigation

Measures BIO1 and BIO2 would reduce any contribution to cumulative impacts on biological resources to a less-than-significant level.

4.2.3 Unavoidable Significant Adverse Effects

No unavoidable significant adverse effects on biological resources would occur from implementing the Project.

5.0 Literature Cited

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_____. 2022c. National Wild and Scenic Rivers System. <https://www.rivers.gov/california.php>. Accessed 17 June 2022.

Appendix A. USFWS list of threatened and endangered species.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

June 17, 2022

Project Code: 2022-0055605

Project Name: Livingston TCP Treatment System

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Project Code: 2022-0055605

Event Code: None

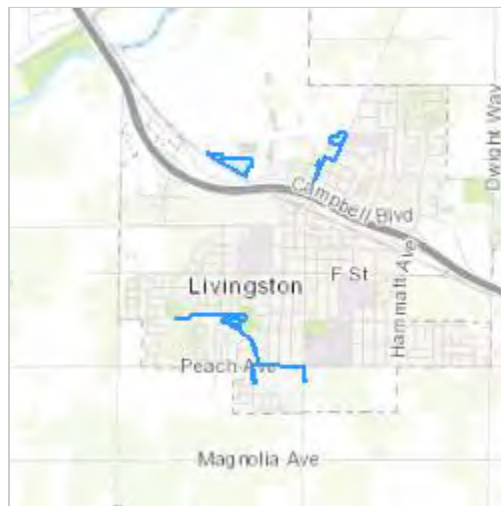
Project Name: Livingston TCP Treatment System

Project Type: Water Supply Facility - New Constr

Project Description: The City of Livingston proposes to construct centralized 1,2,3-trichloropropane (TCP) treatment systems in north-central and southwestern Livingston in Merced County, California.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.390610249999995,-120.729861551695,14z>



Counties: Merced County, California

Endangered Species Act Species

There is a total of 13 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard <i>Gambelia silus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Colusa Grass <i>Neostapfia colusana</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5690	Threatened
Fleshy Owl's-clover <i>Castilleja campestris ssp. succulenta</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8095	Threatened
San Joaquin Orcutt Grass <i>Orcuttia inaequalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5506	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

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Appendix B. CNDDDB occurrence records.



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Cressey (3712046) OR Arena (3712036) OR Atwater (3712035) OR Denair (3712057) OR Montpelier (3712056) OR Stevinson (3712037) OR Turlock (3712047) OR Turlock Lake (3712055) OR Winton (3712045))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Acipenser medirostris</i> pop. 1 green sturgeon - southern DPS	G2T1 S1	Threatened None	AFS_VU-Vulnerable IUCN_NT-Near Threatened	57 57	13 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Agelaius tricolor</i> tricolored blackbird	G1G2 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	69 250	955 S:28	0	0	0	0	8	20	21	7	20	8	0
<i>Ambystoma californiense</i> pop. 1 California tiger salamander - central California DPS	G2G3T3 S3	Threatened Threatened	CDFW_WL-Watch List IUCN_VU-Vulnerable	70 300	1265 S:14	0	4	1	2	1	6	9	5	13	1	0
<i>Anniella pulchra</i> Northern California legless lizard	G3 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	90 126	383 S:5	0	1	1	1	0	2	3	2	5	0	0
<i>Antrozous pallidus</i> pallid bat	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	200 200	420 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Ardea alba</i> great egret	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	75 75	43 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Ardea herodias</i> great blue heron	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	75 75	156 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	G2T1 S1	None None	Rare Plant Rank - 1B.2	90 175	65 S:4	0	2	0	0	0	2	3	1	4	0	0



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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Athene cunicularia</i> burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	150 181	2011 S:6	2	0	3	0	0	1	0	6	6	0	0
<i>Atriplex cordulata</i> var. <i>cordulata</i> heartscale	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	95 175	66 S:5	0	1	0	0	0	4	5	0	5	0	0
<i>Atriplex depressa</i> brittlescale	G2 S2	None None	Rare Plant Rank - 1B.2	95 175	60 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Atriplex minuscula</i> lesser saltscale	G2 S2	None None	Rare Plant Rank - 1B.1	95 95	52 S:1	0	1	0	0	0	0	1	0	1	0	0
<i>Atriplex persistens</i> vernal pool smallscale	G2 S2	None None	Rare Plant Rank - 1B.2	70 140	41 S:9	1	1	0	0	1	6	8	1	8	1	0
<i>Atriplex subtilis</i> subtle orache	G1 S1	None None	Rare Plant Rank - 1B.2		24 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Bombus crotchii</i> Crotch bumble bee	G2 S1S2	None None		100 100	437 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	G2 S2	Endangered None	IUCN_EN-Endangered	75 95	53 S:4	0	1	0	0	0	3	2	2	4	0	0
<i>Branchinecta longiantenna</i> longhorn fairy shrimp	G1 S1S2	Endangered None	IUCN_EN-Endangered	70 70	23 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	75 250	795 S:10	0	4	1	0	0	5	4	6	10	0	0
<i>Branchinecta meso Vallensis</i> midvalley fairy shrimp	G2 S2S3	None None		95 250	144 S:2	0	0	0	0	0	2	1	1	2	0	0
<i>Buteo regalis</i> ferruginous hawk	G4 S3S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	175 175	107 S:1	0	0	1	0	0	0	0	1	1	0	0
<i>Buteo swainsoni</i> Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	70 195	2548 S:16	0	4	2	0	0	10	3	13	16	0	0



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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Calycadenia hooveri</i> Hoover's calycadenia	G2 S2	None None	Rare Plant Rank - 1B.3	200 200	37 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Castilleja campestris</i> var. <i>succulenta</i> succulent owl's-clover	G4?T2T3 S2S3	Threatened Endangered	Rare Plant Rank - 1B.2	175 185	99 S:3	0	0	0	2	0	1	3	0	3	0	0
<i>Charadrius montanus</i> mountain plover	G3 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	250 250	90 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	G3T2T3 S3	Threatened None		80 110	271 S:4	0	0	0	1	1	2	4	0	3	1	0
<i>Dipodomys heermanni dixonii</i> Merced kangaroo rat	G4T2T3 S2S3	None None		120 120	21 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Emys marmorata</i> western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	139 175	1404 S:2	0	1	1	0	0	0	0	2	2	0	0
<i>Eryngium racemosum</i> Delta button-celery	G1 S1	None Endangered	Rare Plant Rank - 1B.1	65 240	26 S:6	1	3	1	1	0	0	6	0	6	0	0
<i>Eumops perotis californicus</i> western mastiff bat	G4G5T4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern WBWG_H-High Priority	200 200	296 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Euphorbia hooveri</i> Hoover's spurge	G1 S1	Threatened None	Rare Plant Rank - 1B.2	190 190	29 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Extriplex joaquinana</i> San Joaquin spearscale	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	100 100	127 S:1	0	0	0	0	0	1	1	0	1	0	0



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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Haliaeetus leucocephalus</i> bald eagle	G5 S3	Delisted Endangered	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive	250 250	332 S:1	1	0	0	0	0	0	1	0	1	0	0
<i>Lasiurus blossevillii</i> western red bat	G4 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	200 200	128 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Lasiurus cinereus</i> hoary bat	G3G4 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority	105 200	238 S:3	0	0	0	0	0	3	3	0	3	0	0
<i>Lasthenia chrysantha</i> alkali-sink goldfields	G2 S2	None None	Rare Plant Rank - 1B.1	75 95	55 S:4	0	0	0	0	0	4	3	1	4	0	0
<i>Lasthenia glabrata ssp. coulteri</i> Coulter's goldfields	G4T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	30 85	111 S:3	0	0	0	0	0	3	2	1	3	0	0
<i>Lepidium latipes var. heckardii</i> Heckard's pepper-grass	G4T1 S1	None None	Rare Plant Rank - 1B.2	85 85	14 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	G4 S3S4	Endangered None	IUCN_EN-Endangered	75 200	329 S:12	0	2	1	0	0	9	5	7	12	0	0
<i>Linderiella occidentalis</i> California linderiella	G2G3 S2S3	None None	IUCN_NT-Near Threatened	70 255	508 S:11	1	2	2	0	1	5	7	4	10	1	0
<i>Lytta molesta</i> molestan blister beetle	G2 S2	None None		230 230	17 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Monardella leucocephala</i> Merced monardella	GX SX	None None	Rare Plant Rank - 1A	115 115	3 S:1	0	0	0	0	1	0	1	0	0	0	1



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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Mylopharodon conocephalus</i> hardhead	G3 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	60 175	33 S:5	0	0	0	0	0	5	2	3	5	0	0
<i>Myotis yumanensis</i> Yuma myotis	G5 S4	None None	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_LM-Low-Medium Priority	200 200	265 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Navarretia prostrata</i> prostrate vernal pool navarretia	G2 S2	None None	Rare Plant Rank - 1B.2	65 90	61 S:3	1	0	0	0	0	2	3	0	3	0	0
<i>Neostapfia colusana</i> Colusa grass	G1 S1	Threatened Endangered	Rare Plant Rank - 1B.1	90 250	66 S:9	0	0	4	0	5	0	6	3	4	1	4
<i>Northern Claypan Vernal Pool</i> Northern Claypan Vernal Pool	G1 S1.1	None None		90 90	21 S:1	0	0	1	0	0	0	1	0	1	0	0
<i>Northern Hardpan Vernal Pool</i> Northern Hardpan Vernal Pool	G3 S3.1	None None		160 276	126 S:3	0	0	0	0	0	3	3	0	3	0	0
<i>Oncorhynchus mykiss irideus pop. 11</i> steelhead - Central Valley DPS	G5T2Q S2	Threatened None	AFS_TH-Threatened		31 S:3	0	0	0	1	0	2	0	3	3	0	0
<i>Orcuttia inaequalis</i> San Joaquin Valley Orcutt grass	G1 S1	Threatened Endangered	Rare Plant Rank - 1B.1	160 185	47 S:5	0	0	0	0	5	0	5	0	0	0	5
<i>Orcuttia pilosa</i> hairy Orcutt grass	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	190 200	35 S:2	0	0	1	0	1	0	1	1	1	0	1
<i>Phrynosoma blainvillii</i> coast horned lizard	G3G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	95 95	784 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Puccinellia simplex</i> California alkali grass	G3 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	100 100	80 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Sagittaria sanfordii</i> Sanford's arrowhead	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	150 150	143 S:1	0	1	0	0	0	0	0	1	1	0	0



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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Spea hammondi</i> western spadefoot	G2G3 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	75 285	1422 S:9	0	1	1	1	1	5	8	1	8	1	0
<i>Taxidea taxus</i> American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	70 75	594 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	G4T3 S1	None None	Rare Plant Rank - 2B.1		12 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Tuctoria greenei</i> Greene's tuctoria	G1 S1	Endangered Rare	Rare Plant Rank - 1B.1	180 180	50 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Valley Sacaton Grassland</i> Valley Sacaton Grassland	G1 S1.1	None None		75 75	9 S:1	1	0	0	0	0	0	1	0	1	0	0
<i>Vireo bellii pusillus</i> least Bell's vireo	G5T2 S2	Endangered Endangered	IUCN_NT-Near Threatened NABCI_YWL-Yellow Watch List	120 120	504 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	G4T2 S2	Endangered Threatened		73 160	1020 S:3	0	0	0	1	0	2	3	0	3	0	0

Appendix C. CNPS plant list.

Search Results

28 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [3712036:3712035:3712045:3712046:3712056:3712055:3712037:3712047:3712057]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G2T1	S1	1B.2
<i>Atriplex cordulata</i> var. <i>cordulata</i>	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2
<i>Atriplex coronata</i> var. <i>coronata</i>	crownscale	Chenopodiaceae	annual herb	Mar-Oct	None	None	G4T3	S3	4.2
<i>Atriplex depressa</i>	brittscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2
<i>Atriplex minuscula</i>	lesser saltscale	Chenopodiaceae	annual herb	May-Oct	None	None	G2	S2	1B.1
<i>Atriplex persistens</i>	vernal pool smallscale	Chenopodiaceae	annual herb	Jun-Oct	None	None	G2	S2	1B.2
<i>Atriplex subtilis</i>	subtle orache	Chenopodiaceae	annual herb	(Apr)Jun- Sep(Oct)	None	None	G1	S1	1B.2
<i>Calycadenia hooveri</i>	Hoover's calycadenia	Asteraceae	annual herb	Jul-Sep	None	None	G2	S2	1B.3
<i>Castilleja campestris</i> var. <i>succulenta</i>	succulent owl's- clover	Orobanchaceae	annual herb (hemiparasitic)	(Mar)Apr- May	FT	CE	G4?T2T3	S2S3	1B.2
<i>Eryngium racemosum</i>	Delta button- celery	Apiaceae	annual/perennial herb	(May)Jun- Oct	None	CE	G1	S1	1B.1
<i>Euphorbia hooveri</i>	Hoover's spurge	Euphorbiaceae	annual herb	Jul-Sep(Oct)	FT	None	G1	S1	1B.2
<i>Extriplex joaquinana</i>	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2
<i>Fritillaria agrestis</i>	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2
<i>Hordeum intercedens</i>	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2
<i>Lasthenia chrysantha</i>	alkali-sink goldfields	Asteraceae	annual herb	Feb-Apr	None	None	G2	S2	1B.1
<i>Lasthenia ferrisiae</i>	Ferris' goldfields	Asteraceae	annual herb	Feb-May	None	None	G3	S3	4.2
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1
<i>Lepidium latipes</i> var. <i>heckardii</i>	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	None	None	G4T1	S1	1B.2
<i>Monardella leucocephala</i>	Merced monardella	Lamiaceae	annual herb	May-Aug	None	None	GX	SX	1A
<i>Myosurus minimus</i>	little mouseltail	Ranunculaceae	annual herb	Mar-Jun	None	None	G5T2Q	S2	3.1

ssp. apus

<u>Navarretia prostrata</u>	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2
<u>Neostapfia colusana</u>	Colusa grass	Poaceae	annual herb	May-Aug	FT	CE	G1	S1	1B.1
<u>Orcuttia inaequalis</u>	San Joaquin Valley Orcutt grass	Poaceae	annual herb	Apr-Sep	FT	CE	G1	S1	1B.1
<u>Orcuttia pilosa</u>	hairy Orcutt grass	Poaceae	annual herb	May-Sep	FE	CE	G1	S1	1B.1
<u>Puccinellia simplex</u>	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G3	S2	1B.2
<u>Sagittaria sanfordii</u>	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2
<u>Trichocoronis wrightii var. wrightii</u>	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	None	None	G4T3	S1	2B.1
<u>Tuctoria greenei</u>	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	FE	CR	G1	S1	1B.1

Showing 1 to 28 of 28 entries

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Appendix D. Recommended timing and methodology for Swainson's hawk nesting surveys in California's Central Valley

RECOMMENDED TIMING AND METHODOLOGY FOR SWAINSON'S HAWK NESTING SURVEYS IN CALIFORNIA'S CENTRAL VALLEY

Swainson's Hawk Technical Advisory Committee

May 31, 2000

This set of survey recommendations was developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reducing the potential for nest failures as a result of project activities/disturbances. The combination of appropriate surveys, risk analysis, and monitoring has been determined to be very effective in reducing the potential for project-induced nest failures. As with most species, when the surveyor is in the right place at the right time, Swainson's hawks may be easy to observe; but some nest sites may be very difficult to locate, and even the most experienced surveyors have missed nests, nesting pairs, mis-identified a hawk in a nest, or believed incorrectly that a nest had failed. There is no substitute for specific Swainson's hawk survey experience and acquiring the correct search image.

METHODOLOGY

Surveys should be conducted in a manner that maximizes the potential to observe the adult Swainson's hawks, as well as the nest/chicks second. To meet the California Department of Fish and Game's (CDFG) recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a ½ mile radius around all project activities, and if active nesting is identified within the ½ mile radius, consultation is required. In general, the TAC recommends this approach as well.

Minimum Equipment

Minimum survey equipment includes a high-quality pair of binoculars and a high quality spotting scope. Surveying even the smallest project area will take hours, and poor optics often result in eye-strain and difficulty distinguishing details in vegetation and subject birds. Other equipment includes good maps, GPS units, flagging, and notebooks.

Walking vs Driving

Driving (car or boat) or "windshield surveys" are usually preferred to walking if an adequate roadway is available through or around the project site. While driving, the observer can typically approach much closer to a hawk without causing it to fly. Although it might appear that a flying bird is more visible, they often fly away from the observer using trees as screens; and it is difficult to determine from where a flying bird came. Walking surveys are useful in locating a nest after a nest territory is identified, or when driving is not an option.

Angle and Distance to the Tree

Surveying subject trees from multiple angles will greatly increase the observer's chance of detecting a nest or hawk, especially after trees are fully leafed and when surveying multiple trees

in close proximity. When surveying from an access road, survey in both directions. Maintaining a distance of 50 meters to 200 meters from subject trees is optimal for observing perched and flying hawks without greatly reducing the chance of detecting a nest/young: Once a nesting territory is identified, a closer inspection may be required to locate the nest.

Speed

Travel at a speed that allows for a thorough inspection of a potential nest site. Survey speeds should not exceed 5 miles per hour to the greatest extent possible. If the surveyor must travel faster than 5 miles per hour, stop frequently to scan subject trees.

Visual and Aural Ques

Surveys will be focused on both observations and vocalizations. Observations of nests, perched adults, displaying adults, and chicks during the nesting season are all indicators of nesting Swainson's hawks. In addition, vocalizations are extremely helpful in locating nesting territories. Vocal communication between hawks is frequent during territorial displays; during courtship and mating; through the nesting period as mates notify each other that food is available or that a threat exists; and as older chicks and fledglings beg for food.

Distractions

Minimize distractions while surveying. Although two pairs of eyes may be better than one pair at times, conversation may limit focus. Radios should be off, not only are they distracting, they may cover a hawk's call.

Notes and Species Observed

Take thorough field notes. Detailed notes and maps of the location of observed Swainson's hawk nests are essential for filling gaps in the Natural Diversity Data Base; please report all observed nest sites. Also document the occurrence of nesting great homed owls, red-tailed hawks, red-shouldered hawks and other potentially competitive species. These species will infrequently nest within 100 yards of each other, so the presence of one species will not necessarily exclude another.

TIMING

To meet **the minimum level** of protection for the species, surveys should be completed for **at least** the two survey periods immediately prior to a project's initiation. For example, if a project is scheduled to begin on June 20, you should complete 3 surveys in Period III and 3 surveys in Period V. However, it is always recommended that surveys be completed in Periods II, III and V. **Surveys should not be conducted in Period IV.**

The survey periods are defined by the timing of migration, courtship, and nesting in a "typical" year for the majority of Swainson's hawks from San Joaquin County to Northern Yolo County. Dates should be adjusted in consideration of early and late nesting seasons, and geographic differences (northern nesters tend to nest slightly later, etc). If you are not sure, contact a TAC member or CDFG biologist.

Survey dates Justification and search image	Survey time	Number of Surveys
--	-------------	-------------------

I. <i>January-March 20 (recommended optional)</i>	<i>All day</i>	<i>1</i>
---	----------------	----------

Prior to Swainson's hawks returning, it may be helpful to survey the project site to determine potential nest locations. Most nests are easily observed from relatively long distances, giving the surveyor the opportunity to identify potential nest sites, as well as becoming familiar with the project area. It also gives the surveyor the opportunity to locate and map competing species nest sites such as great homed owls from February on, and red-tailed hawks from March on. After March 1, surveyors are likely to observe Swainson's hawks staging in traditional nest territories.

II. <i>March 20 to April 5</i>	<i>Sunrise to 1000 1600 to sunset</i>	<i>3</i>
--------------------------------	---	----------

Most Central Valley Swainson's hawks return by April 1, and immediately begin occupying their traditional nest territories. For those few that do not return by April 1, there are often hawks ("floaters") that act as place-holders in traditional nest sites; they are birds that do not have mates, but temporarily attach themselves to traditional territories and/or one of the site's "owners." Floaters are usually displaced by the territories' owner(s) if the owner returns.

Most trees are leafless and are relatively transparent; it is easy to observe old nests, staging birds, and competing species. The hawks are usually in their territories during the survey hours, but typically soaring and foraging in the mid-day hours. Swainson's hawks may often be observed involved in territorial and courtship displays, and circling the nest territory. Potential nest sites identified by the observation of staging Swainson's hawks will usually be active territories during that season, although the pair may not successfully nest/reproduce that year.

III. <i>April 5 to April 20</i>	<i>Sunrise to 1200 1630 to Sunset</i>	<i>3</i>
---------------------------------	---	----------

Although trees are much less transparent at this time, 'activity at the nest site increases significantly. Both males and females are actively nest building, visiting their selected site frequently. Territorial and courtship displays are increased, as is copulation. The birds tend to vocalize often, and nest locations are most easily identified. This period may require a great deal of "sit and watch" surveying.

IV. <i>April 21 to June 10</i>	<i>Monitoring known nest sites only Initiating Surveys is not recommended</i>	
--------------------------------	---	--

Nests are extremely difficult to locate this time of year, and even the most experienced surveyor will miss them, especially if the previous surveys have not been done. During this phase of nesting, the female Swainson's hawk is in brood position, very low in the nest, laying eggs, incubating, or protecting the newly hatched and vulnerable chicks; her head may or may not be visible. Nests are often well-hidden, built into heavily vegetated sections of trees or in clumps of mistletoe, making them all but invisible. Trees are usually not viewable from all angles, which may make nest observation impossible.

Following the male to the nest may be the only method to locate it, and the male will spend hours away from the nest foraging, soaring, and will generally avoid drawing attention to the nest site. Even if the observer is fortunate enough to see a male returning with food for the female, if the female determines it is not safe she will not call the male in, and he will not approach the nest; this may happen if the observer, or others, are too close to the nest or if other threats, such as rival hawks, are apparent to the female or male.

V. June 10 to July 30 (post-fledging)





Sunrise to 1200

3

1600 to sunset

Young are active and visible, and relatively safe without parental protection. Both adults make numerous trips to the nest and are often soaring above, or perched near or on the nest tree. The location and construction of the nest may still limit visibility of the nest, young, and adults.

DETERMINING A PROJECT'S POTENTIAL FOR IMPACTING SWAINSON'S HAWKS

LEVEL OF RISK	REPRODUCTIVE SUCCESS (Individuals)	LONGTERM SURVIVABILITY (Population)	NORMAL SITE CHARACTERISTICS (Daily Average)	NEST MONITORING
<p>HIGH</p> 	<p>Direct physical contact with the nest tree while the birds are on eggs or protecting young. (Helicopters in close proximity)</p> <p>Loss of nest tree after nest building is begun prior to laying eggs.</p> <p>Personnel within 50 yards of nest tree (out of vehicles) for extended periods while birds are on eggs or protecting young that are < 10 days old.</p> <p>Initiating construction activities (machinery and personnel) within 200 yards of the nest after eggs are laid and before young are > 10 days old.</p> <p>Heavy machinery only working within 50 yards of nest.</p> <p>Initiating construction activities within 200 yards of nest before nest building begins or after young > 10 days old.</p> <p>All project activities (personnel and machinery) greater than 200 yards from nest.</p>	<p>Loss of available foraging area.</p> <p>Loss of nest trees.</p> <p>Loss of potential nest trees.</p> <p>Cumulative: Multi-year, multi-site projects with substantial noise/personnel disturbance.</p> <p>Cumulative: Single-season projects with substantial noise/personnel disturbance that is greater than or significantly different from the daily norm.</p> <p>Cumulative: Single-season projects with activities that “blend” well with site’s “normal” activities.</p>	<p>Little human-created noise, little human use: nest is well away from dwellings, equipment yards, human access areas, etc. <i>Do not include general cultivation practices in evaluation.</i></p> <p>Substantial human-created noise and occurrence: nest is near roadways, well-used waterways, active airstrips, areas that have high human use. <i>Do not include general cultivation practices in evaluation.</i></p>	<p>MORE</p> 
<p>LOW</p> 				<p>LESS</p> 

Appendix B

Updated Cultural Resources Report

Cultural Resource Study for the Updated TCP Treatment Project in the City of Livingston, California

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Cheyenne F. Good, and Amber Long

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July 2022
draft

MANAGEMENT SUMMARY

The City of Livingston (City) proposes updates and improvements to the original 1,2,3 TCP Removal Treatment System project (State Clearinghouse #2018091025) adopted by the City on October 16, 2018. The City proposes these changes and updates to the original 2018 project to increase the City's water system capacity and improve centralized treatment for trichloropropane (TCP). The current Updated TCP Treatment Project will include updates and improvements to existing wells, construction of centralized TCP treatments sites, and installation of new pipelines covering approximately 26.8-acres (Project) in the city of Livingston, Merced County, California. The proposed Project is funded by the California State Water Resources Control Board Clean Water State Revolving Fund, a joint federal-state program. The Project thus requires compliance with Section 106 of the National Historic Preservation Act, the California Environmental Quality Act, the Merced County 2030 General Plan, and other local policies and ordinances.

To meet state and federal standards, Applied EarthWorks, Inc. (Æ) conducted a cultural resource study in 2018 for the original 1, 2, 3 TCP Removal Treatment System project (Baloian et al. 2018). Under contract to Crawford & Bowen Planning, Inc., Æ conducted this second cultural resource study to determine if cultural resources are present within the current Area of Potential Effects (APE) of this Updated TCP Treatment Project.

Æ's investigation included an updated records search from the Central California Information Center (CCAIC) of the California Historical Resources Information System (CHRIS) for the portions of the APE that were outside the original 2018 project boundaries. Æ also requested a search of the Sacred Lands File maintained by the Native American Heritage Commission (NAHC) to identify sensitive resources that have tribal significance in the APE. These were supplemented by archival research that included a review of historical topographic maps and aerial images. Finally, qualified Æ staff completed an archaeological and built environment pedestrian survey of the APE on April 1, 2022.

The 2018 records search conducted by the CCAIC for the original 2018 project found seven previous cultural resource studies conducted within the APE, and 18 studies previously conducted within a 0.5-mile search radius of the APE. Four previously recorded historic-era resources are present within the APE, including a segment of the Arena Canal (P-24-000093). There are 29 previously recorded historic-era resources within a 0.5-mile radius of the APE. The records search conducted by the CCAIC for the current Project revealed no cultural resource investigations have occurred within the APE or within the 0.5-mile search radius and only the Arena Canal has been previously recorded.

The Sacred Lands File search provided by the NAHC did not identify any recorded sensitive or sacred sites within the APE; however, the NAHC provided contact information for nine tribal representatives who may have relevant information. Æ submitted letters via electronic mail and telephoned the contacts on the NAHC list. The Southern Sierra Miwuk Nation responded via email that the Project was outside their traditional use area. Additionally, Æ spoke via telephone

with Chairperson Valentin Lopez from the Amah Mutsun Tribal Band, who stated that the Project is outside of their territory and had no further comments.

One segment of the Arena Canal (P-24-000093) is within the APE. The segment (53 feet long) lies east of Emerald Drive and north of Peach Avenue. Æ updated the existing California Department of Parks and Recreation cultural resource record forms to document the segment of the Arena Canal in the APE. JRP Historical Consulting Services (JRP) prepared a historic context and completed an evaluation of the resource's eligibility for inclusion in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR) in 1993 (JRP Historical Consulting LLC 1993). JRP recommended that the Arena Canal is not eligible for inclusion in the NRHP or CRHR as a result of its lack of association with early agricultural settlement of the region or the historical development of the Merced Irrigation District. Based on review of previous documentation and examination of the segments of the canal within the Project APE, Æ agrees with the previous evaluation by JRP that the Arena Canal is not eligible for the NRHP and CRHR due to a lack of significance. No other cultural resources (i.e., archaeological sites, features, isolates, historic-era buildings, structures, or objects) were identified during Æ's pedestrian survey of the APE.

Æ's original 2018 assessment of the project APE determined there is a moderately low sensitivity for buried soils with archaeological resources within a "natural" context (i.e., undisturbed by modern agricultural practices). However, extensive earthworks in the APE over the last century relating to agriculture and the development of the City would likely have destroyed any stratigraphic deposits containing in situ archaeological resources. The 2018 study determined that the potential to encounter buried soils with extensive in situ cultural deposits within the APE is low and Æ's current findings concur with this determination for the current APE as well (Baloian et al. 2018).

Provided that the APE does not change, no specific management measures are necessary for the Project. Consistent with state and federal statutes, Æ recommends that in the event cultural resources are encountered during construction or ground-disturbing activities within any portion of the APE, all work in the vicinity of the find should be halted until a qualified archaeologist can identify the discovery and assess its significance. In addition, pursuant to California Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98, if human remains are uncovered during construction, the Merced County Coroner is to be notified to arrange their proper treatment and disposition. If the archaeological context, age, cultural associations, or biological traits of the human remains are determined by the coroner to be those of a Native American, the coroner must notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent, who may recommend appropriate treatment of the remains.

A copy of this report will be transmitted to the CCAIC at California State University, Stanislaus, for inclusion in the CHRIS database. Field notes and photographs are on file at the Æ office in Fresno, California.

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1

INTRODUCTION

At the request of Crawford & Bowen Planning, Inc., Applied EarthWorks, Inc. (Æ) completed a cultural resource study in support of the Updated TCP Treatment Project (Project) in the city of Livingston, Merced County, California (Figure 1-1). The City of Livingston (City) proposes updates and improvements to the original 1,2,3 TCP Removal Treatment System project (State Clearinghouse #2018091025) adopted by the City on October 16, 2018. These changes and updates to the original 2018 project will increase the City's water system capacity and improve centralized treatment for trichloropropane (TCP), a chemical commonly associated with solvents and pesticides. The Project is within Sections 23–27, 33–36 of Township 6 South, Range 11 East as depicted on the U.S. Geological Survey (USGS) Cressey and Arena 7.5-minute topographic quadrangles (Figure 1-2).

1.1 PROJECT DESCRIPTION

The City is proposing additional improvements associated with the Updated TCP Treatment Project. The original project was adopted by the City with a Mitigated Negative Declaration and based on information provided by the City, additional improvements are being proposed that expand and update the original 2018 project components. Under the California Environmental Quality Act (CEQA), evaluation of these activities will require an addendum to the existing documents, of which this study will be a part.

The current proposed Project will include updates and improvements to existing wells, construction of centralized TCP treatment sites, and installation of new pipelines covering approximately 26.8-acres. Specifically, the updates include:

- An updated location and a new TCP treatment site for Well 19.
- Installation of new Well 18.
- Expansion of Well 8 Centralized TCP treatment site.
- A new pipeline from Well 8 to the newly proposed Well 18 and existing Well 9 (approximately 0.5 miles).
- Closure and demolition of Well 10 and a new TCP treatment site in Arakelian Park.
- A new pipeline from Well 12 to Well 17 and to the new TCP treatment site at Arakelian Park (approximately 1 mile long).

The improvements are in two separate areas of the City (Figure 1-3). Wells 8 and 19 centralized treatment sites, new Wells 18 and 19, and a new pipeline connecting Well 8 to 18 are north of



Figure 1-1 Project vicinity in Merced County, California.

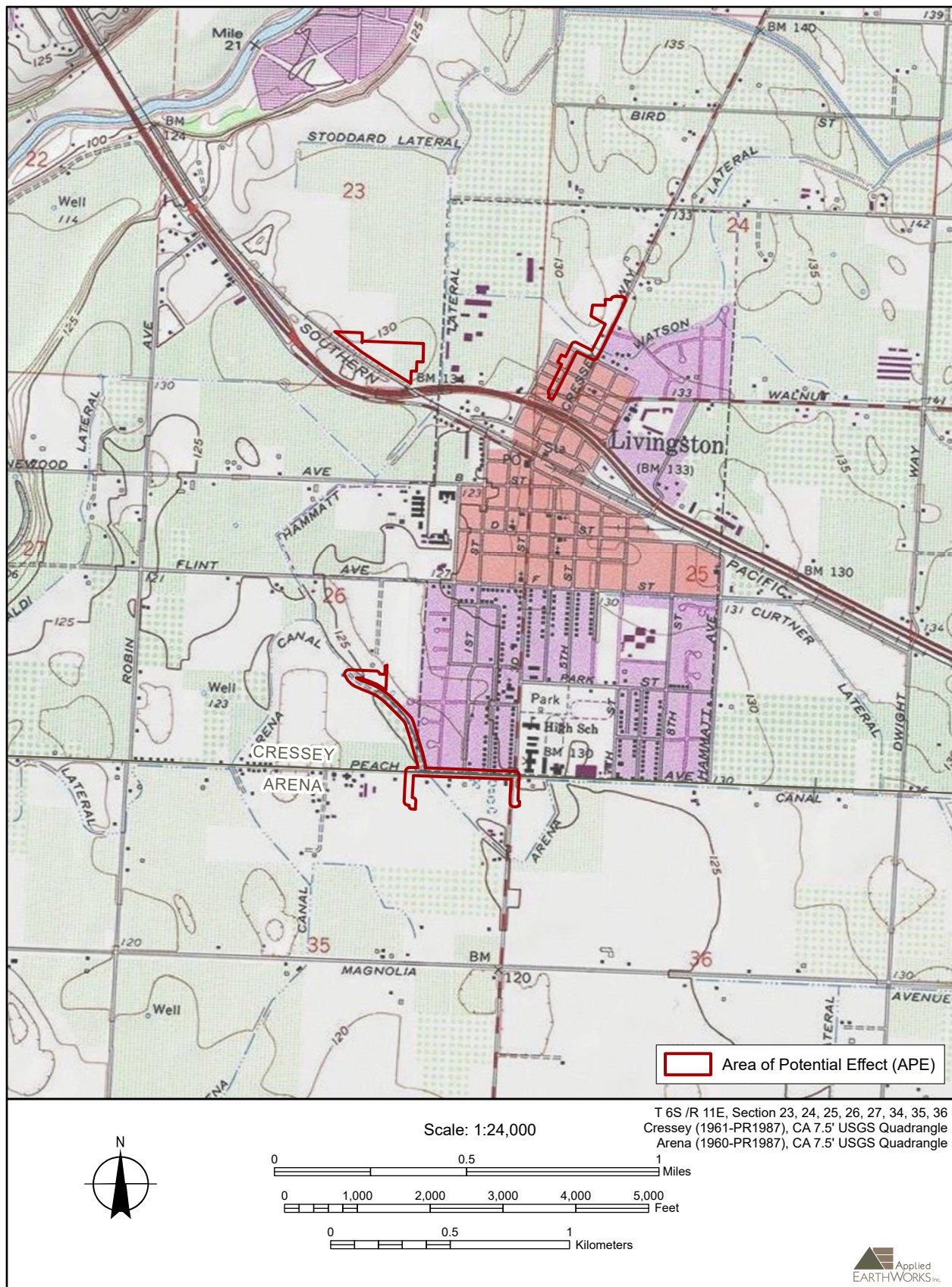


Figure 1-2 Project area on USGS Cressey and Arena 7.5-minute topographic quadrangles.

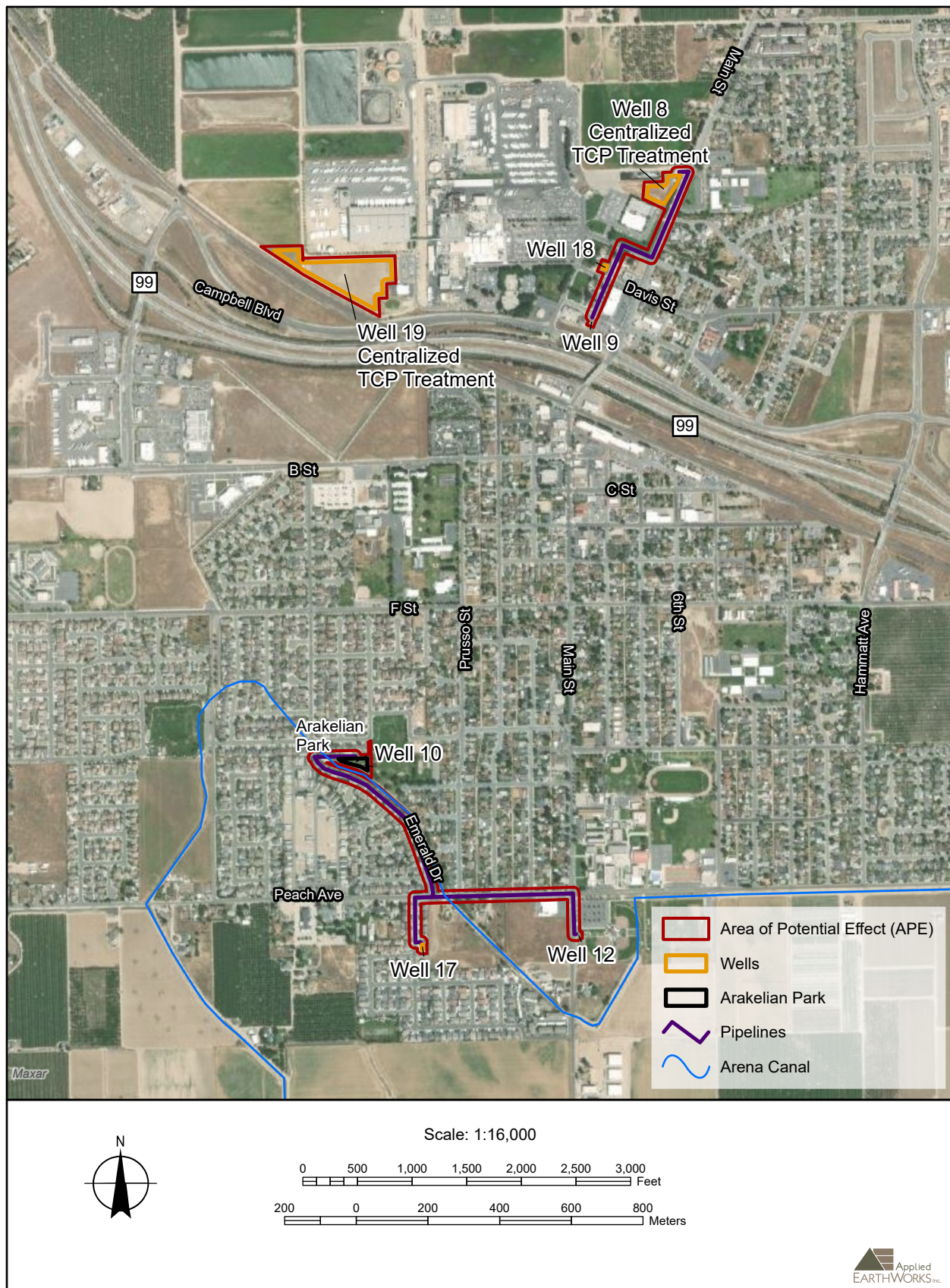


Figure 1-3 Aerial view of the Project area.

State Route 99 in the northern portion of the City. This area is bounded between Main Street on the east, Campbell Boulevard on the south, and the Southern Pacific rail line on the southwest. Various buildings associated with the Foster Farms facility are to the north and between the treatment facilities and wells associated with the Project. Wells 12 and 17, the new connector pipeline, and the proposed centralized treatment facility at Arakelian Park are south of State Route 99. Arakelian Park is at the northern extent of this area with the proposed pipeline running between the Arena Canal and Emerald Drive, connecting to Peach Avenue where it branches to the east and west to connect with the Wells 12 and 17, respectively.

1.2 PURPOSE OF THE INVESTIGATION

The original 2018 project obtained funding from the California State Water Resources Control Board Clean Water State Revolving Fund (CWSRF), a joint federal-state program. The CWSRF loan receives partial funding from the U.S. Environmental Protection Agency. Due to the federal nexus, it is therefore considered a “Federal undertaking” subject to the requirements of Section 106 of the National Historic Preservation Act (NHPA; 54 U.S. Code [USC] Section 306108) and its implementing regulations at Title 36, Code of Federal Regulations (CFR), Section 800.1(a). Additionally, the City is the lead agency responsible for environmental review pursuant to the CEQA Guidelines; therefore, this report also meets the requirements of CEQA, including the Merced County 2030 General Plan, and other local policies and ordinances. The NHPA and CEQA essentially mandate that government agencies consider the effects of their actions on cultural resources.

For purposes of this report, a historic property or historical resource is defined as a prehistoric or historic-era archaeological site, building, structure, or object that is at least 50 years old, and that meets the criteria for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). Cultural resources determined eligible for the NRHP are termed “historic properties” (36 CFR 800.16[l]); those eligible for the CRHR are called “historical resources” (Title 14, Chapter 3, Article 5, Section 15064.5 of the California Code of Regulations [14 CCR 15064.5]). Under both statutes, the determination of eligibility is based on a set of significance criteria (36 CFR 60.4; 14 CCR 15064.5).

1.3 DEFINITION OF THE AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) is defined as “the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist” (36 CFR Section 800.16[d]). The APE includes 10 separate locations throughout the city within urban and residential settings. A short segment of the Arena Canal bisects the southern portion of the APE, east of Emerald Drive and north of Peach Avenue. Moreover, the APE consists of both horizontal and vertical limits of proposed activities and encompasses all portions of the proposed areas of improvement, whether owned by the City, privately, or otherwise. The APE encompasses a total of 26.8 acres of proposed horizontal impacts throughout the city. Vertical impacts include the deepest excavation limits proposed for pipelines, footings, and other construction impacts.

1.4 PROJECT HISTORY

Æ prepared a cultural resources inventory for the City's original TCP Removal Treatment System project in 2018 (Baloian et al. 2018). The project consisted of installing new pipeline between existing Wells 8, 9, 13, and 17 and the proposed centralized treatment site, new treatment trains to the existing TCP treatment system, and a new treated water storage tank and booster pump station at Well 8. The 2018 APE included approximately 17.72 acres. This project, which includes Æ's cultural resource inventory, was approved and adopted by the City in 2018. Therefore, Æ prepared this report to document Æ's cultural resource investigation for additional Project elements and APE that were added following the adoption of the original 2018 project. This report does not replace the original study and findings documented in 2018.

1.5 PROJECT PERSONNEL

Æ Managing Principal Archaeologist Erin Enright (M.A. Registered Professional Archaeologist [RPA] 16575) served as principal investigator providing quality assurance and quality control for the Project. Æ Senior Archaeologist Anna Hoover (M.S., RPA 28576661) served as project manager and co-authored this report. Æ Associate Archaeologist Ward Stanley (B.A.) conducted the archaeological pedestrian survey and contributed to sections of the report. Staff Archaeologist Gabriel Granado (B.A.) also assisted with preparation of the report. Æ Staff Architectural Historian Cheyenne Good (B.A.) conducted the built environment pedestrian survey, performed archival research, prepared and updated the California Department of Parks and Recreation (DPR) forms, and co-authored this report. Senior Architectural Historian Amber Long (M.A.) provided technical review of the built environment sections of the report. Qualifications of supervisory personnel are provided in Appendix A.

1.6 REPORT ORGANIZATION

This report was prepared in accordance with *Archaeological Resource Management Reports: Recommended Contents and Format*, published by the California Office of Historic Preservation (1990). This document consists of seven chapters. Following this introduction, Chapter 2 describes the environmental and cultural context of the study area. Chapter 3 presents the methods used for archaeological and built environment research, Native American outreach, and pedestrian surveys, while Chapter 4 discusses the results of the records searches, research, and archaeological and built environment findings. Chapter 5 presents documentation of the historic Arena Canal. Finally, Chapter 6 contains a summary and provides recommendations. A complete listing of references cited is in Chapter 7. Appendix A contains resumes of Project personnel. Appendix B presents results of the records search and Appendix C contains documentation of communication with the Native American Heritage Commission (NAHC) and local tribal representatives. Appendix D contains California DPR site record forms.

Field notes, maps, and a complete set of photographs from the current investigation are on file at Æ's office in Fresno, California. A copy of the final version of this report will be submitted to the Central California Information Center (CCAIC) of the California Historical Resources Information System (CHRIS) housed at the University of California, Stanislaus.

2 SETTING

2.1 NATURAL ENVIRONMENT

The Project is within the northern San Joaquin Valley, just south of the Merced River. The San Joaquin Valley is the southern half of an elongated trough called the Great Valley, a 50-mile-wide lowland that extends approximately 500 miles south from the Cascade Range to the Tehachapi Mountains (Norris and Webb 1990:412). The San Joaquin Valley parallels the 400-mile stretch of the Sierra Nevada geomorphic province, which encompasses a 40- to 100-mile-wide area ranging in elevation from 400 feet above mean sea level along the western boundary to more than 14,000 feet above mean sea level in the east (Norris and Webb 1990:63).

Between the Mesozoic and Cenozoic eras, the Great Valley served as a shallow marine embayment containing numerous lakes, primarily within the San Joaquin Valley (Norris and Webb 1990:412). As a result, the upper levels of the Great Valley floor are composed of alluvium and flood materials. Below these strata are layers of marine and nonmarine rocks, including claystone, sandstone, shale, basalt, andesite, and serpentine. Waters began to diminish about 10 million years ago, eventually dwindling to the drainages, tributaries, and small lakes, many of which still exist today (Hill 1984:28). The extinct Lake Corcoran once extended over much of the northern San Joaquin Valley during the Pleistocene epoch. Buena Vista Lake, Kern Lake, and Tulare Lake are remnants of Lake Corcoran.

The San Joaquin River is the prominent hydrologic feature that drains the southern half of the Great Valley into San Francisco Bay. The tall steep peaks of the Sierra Nevada effectively block moisture moving eastward from the coast, resulting in a higher level of precipitation on the western slopes. Smaller east–west-trending rivers, like the Merced River just north of the Project area, drain the Sierra Nevada range before converging on the San Joaquin River. The Merced River and its smaller tributaries would have provided habitat for an abundance of food resources such as aquatic plants, fish, beaver, and other animals hunted prehistorically and historically. The annual rainfall for this area averages about 5–20 inches. Winters are cool and wet with average low temperatures between 40° and 50°F; snow is uncommon (Hill 1984:29). Summers are generally hot and dry, with temperatures often exceeding 100°F.

The city of Livingston lies 10 miles northeast of the Merced National Wildlife and San Luis National Wildlife Refuges. These refuges are characterized by riparian habitats, wetlands, grasslands, vernal pools, and croplands (U.S. Fish and Wildlife Service 2012). Various nesting waterbirds and raptors frequent this vast area. Mammals such as elk, deer, and rabbits feed on the perennial grasses such as wild rye and alkali sacaton (*Sporobolus airoides*). The refuges serve as an important migration channel for several species across this portion of the central Valley.

The development of agriculture within the Great Valley has resulted in the replacement of native plants and animals with domesticated species. Common native plants would have included white, blue, and live oak as well as walnut, cottonwood, salix, and tule, many of which still occur along

the Merced River drainage north of the Project. The Project area specifically occupies the Lower Sonoran life zone, marked by prairie grassland communities that cover the plains and low rolling hillocks that border the Sierra Nevada. These grasslands are interspersed with narrow bands of riparian woodland that follow the valley stream corridors. The land in and around the Project area has been intensively farmed for many years and more recently been subject to urban development. No areas of original grassland remain within the Project.

2.2 CULTURAL SETTING

2.2.1 Prehistory

Archaeological studies in the San Joaquin Valley began in the early 1900s with a series of investigations primarily in the Stockton and Kern County areas (Gifford and Schenck 1926; Schenk and Dawson 1929). By the 1960s, archaeological investigations in the San Joaquin Valley intensified with the advent of cultural resource management work (Olsen and Payen 1968; 1969; Treganza 1960). Within Merced and Fresno counties, studies conducted for the construction of several reservoirs, including San Luis (Payen and Olsen 1969), Los Banos (Pritchard 1967, 1970), and Little Panoche (Olsen and Payen 1968), revealed a series of four cultural complexes focused on the exploitation of the foothill-valley biotic zone. This sequence indicates that prehistoric occupation of the region extended from circa 300 B.C. to A.D. 1850, with a 500-year hiatus between circa A.D. 1000 and 1500. Based on these archaeological investigations conducted throughout the valley, the Yokuts occupied most of the San Joaquin Valley over a period extending as long as 2,000 years (Spier 1978; Wallace 1978a, 1978b).

Although no extensive archaeological investigations have occurred in the immediate study vicinity, several have been conducted for reservoir construction projects in the foothill region. King (1968, 1969) and Moratto (1968, 1969, 1970) excavated several sites near the Buchanan Reservoir (Eastman Lake) in the foothills about 20 miles northeast of Chowchilla and 65 miles from the APE. Moratto (1972) synthesized the data into three phases: Chowchilla (300 B.C.–A.D. 300), Raymond (A.D. 300–1500), and Madera (A.D. 1500–1850). The excavations exhumed numerous burials from the Chowchilla Phase; the graves exhibited variability in the value of funerary objects, suggesting that the Chowchilla society was stratified and socially complex. The investigation additionally uncovered historical material indicating early contact with Euro-Americans had occurred.

Investigations at the New Melones Reservoir provided not only a basis for comparison with the cultural material of the Central Valley but a framework for researching temporal and spatial variability in patterns of prehistoric land use, environmental adaptations, and exchange systems in the Sierra Nevada. Moratto et al. (1984) synthesized regional research completed from 1948 through the early 1980s and incorporated data on more than 700 prehistoric sites spanning 10,000 years of human occupation. The New Melones investigations defined eight cultural phases: the Clarks Flat Phase (7650–4500 B.C.), the Stanislaus Phase (4250 B.C.), the Texas Charley Phase (3500–2500 B.C.), the Calaveras Phase (2000 B.C.), the Sierra Phase (1000 B.C.–A.D. 500), the Redbud Phase (A.D. 500–1000), the Horse Shoe Bend Phase (A.D. 1300–1848) and the Peoria Basin Phase (A.D. 1848–1910). The archaeological evidence is supported with historic accounts of Miwok culture (Moratto et al. 1984; Moratto and Davis 1988).

In the early 1970s, excavations at the New Don Pedro Reservoir along the Tuolumne River to the northeast of the APE yielded two components, cumulatively spanning A.D. 300–1800 (Moratto 1971). The lower level corresponded to the late Holocene Crane Flat Complex (500 B.C.–A.D. 900), the earliest sequence in Bennyhoff's (1956) chronology for the Yosemite area, while the upper level was comparable to the Mariposa Complex (A.D. 1200–1500), the most recent sequence, which is related to the protohistoric Sierra Miwok.

2.2.2 Ethnography

The APE lies within the traditional land of the Yokuts; their language is one of eight subgroups of the Penutian linguistic phylum that is present across the western coast and inland regions of North America from Canada to Mexico (Golla 2011a:138). The language group Yokuts has many subgroups and dialects. The APE is near the boundary of two main subgroups, the Delta Yokuts and Northern Valley Yokuts (Golla 2011a:149). The geographic boundary between the groups is less than 2 miles north of the APE along the Merced River. It is possible that prehistoric groups occupying the area or its near vicinity would have been able to converse freely across dialects and may have shared a range of cultural traits. Other neighboring tribal groups included the Plains and Sierra Miwok to the north and northeast, the Mono to the east, various Valley Yokuts groups to the south, Salinan to the southwest, and Costanoan groups to the west (Golla 2011a:149).

The Northern Valley Yokuts inhabited the marshy regions of the upper half of the San Joaquin Valley, from a line midway between the Mokelumne and Calaveras rivers south to where the San Joaquin River turns north towards the Sacramento–San Joaquin Delta region (Wallace 1978b:462). Although the Northern Valley Yokuts tribes shared the same linguistic history and suite of cultural characteristics, they did not constitute a single political entity. Rather, they were a loose confederation of autonomous tribes. These tribes occupied the immediate regions along the San Joaquin River and its tributaries.

Golla (2011b) identifies nine ethnohistoric Delta Yokuts tribelets. Among these, and in closest proximity to the APE, was the Coconoon who lived along the Merced River. The Coconoon are also referred to as the Cucunun and Huocon (Golla 2011a; Wallace 1978b). Early Spanish explorers of the valley noted the presence of villages along the Merced River but did not record a tribal name. Wallace (1978b:466) suggests that the Coconoon, named at a later date, “may have been a composite group, made up of fragments of several tribes.” During the mid-1800s the Coconoon were recorded as having three bands governed by a single chief whose name was Nuella (Johnston 1854).

The Merced River was critical to sustaining the lifeways of the Delta and Northern Valley Yokuts near the APE. The riparian plant communities and flow of freshwater provided humans with a source of constant food, building materials, and avenues of travel for small watercraft. Yokuts homes were constructed of tule reeds, and villages were situated near major waterways and built on low mounds to prevent spring flooding (Cook 1960; Gifford and Schenck 1926:132; Schenck and Dawson 1929:308; Wallace 1978b:465–466). Fish provided the major source of protein. Fall and spring spawning brought abundant supplies of salmon to the inhabitants along the San Joaquin and its tributaries (Baumhoff 1963:174; Cook 1960). The Yokuts diet was supplemented by various species of fowl (e.g., geese, ducks) that were attracted to the riverine

environment. The Yokuts also relied on seasonally available acorns, which were harvested from groves of valley oak, processed using mortars and pestles, and then cooked as a gruel or bread. Awls from animal bone allowed the Yokuts to create a broad range of baskets that facilitated food storage and transportation.

The seasonally predictable and rich diversity of plant and animal resources ultimately fostered greater sedentism than was observed among neighboring tribes at the time of European contact (Cook 1960). Ethnohistoric sources reveal that the tribes may have followed seasonal patterns of gathering and resource procurement, congregating during periods of plenty to exploit abundant concentrated resources and dispersing during leaner times to gather spatially diffuse plant products (Cook 1960:511, 264). The Northern Valley Yokuts enjoyed a particularly good relationship with the Costanoan, from whom they acquired mussel and abalone shells. Linguistic studies have identified shared words and phrases across Delta Yokuts, Miwok, and Costanoan tribes, which suggest that social and economic ties may have existed between these groups as well (Golla 2011a:154).

As with other Native American groups in California, the lifeways of the Northern Valley Yokuts were dramatically altered as a result of contact with early Spanish explorers and missionaries, miners, ranchers, and other European immigrants who entered the San Joaquin Valley after 1800. The introduction of European culture and new diseases resulted in a drastic reduction in Yokuts population size. However, there are at least 25 fluent speakers of various Yokuts dialects alive today, including speakers of the Tule-Kaweah and Yawelmani (also known as Yowlumne) who mostly reside on the Tule River Reservation near Porterville, the Choinimni (also known as Choinumne) who live throughout the Kings River region, the Tachi who live at the Santa Rosa Rancheria near Lemoore, and Chuckchansi speakers who live near the Picayune and Table Mountain rancherias northeast of Fresno. Native Americans from these tribal groups have established language and culture schools and actively participate in master-apprentice language partnerships to ensure the continuity of their cultures and languages (Golla 2011a:154). Many communities are also active in the environmental review process and have robust cultural resource and environmental departments as well as designated Tribal Historic (Heritage) Preservation Offices.

2.3 HISTORIC CONTEXT

The first Europeans known to have ventured into the San Joaquin Valley were Spanish soldiers led by Pedro Fages, who entered the valley through Tejon Pass in 1772 (Wallace 1978a:459). Other Europeans followed in 1806 when Lieutenant Gabriel Moraga led a group of Spanish explorers into the San Joaquin Valley to locate new lands for missions (Clough and Secrest 1984:25-27). It was on this expedition that Moraga gave the Merced River its official name (*El Rio de Nuestra Señora de la Mercedes* [River of Our Lady of Mercy]) when he and his troops reached its bank after a long hot trek through the valley.

The expansion of missions in California ceased by the early 1820s as a result of Mexico's independence from Spain (Clough and Secrest 1984:26) after which the Mexican government granted several large tracts of land (ranchos) to individuals during the 1830s and 1840s. The region remained sparsely populated, and the arid valley climate was not conducive to dry farming. Nevertheless, the establishment of the ranchos not only provided the legal basis for

property rights for years to come but also marked the beginnings of the Central Valley's first industry—cattle ranching.

The discovery of gold in the Sierra Nevada and the accession of California to the Union were watershed events in the history of the state and County. During the late 1840s and early 1850s, prospectors from across the nation and around the world flocked to California to mine the precious ore. The first settlements in the County emerged in the foothill areas along the Merced River and included Snelling and Forelorn Hope, later renamed Hopeton (Merced County n.d.:4).

Established in 1855, Merced County was carved out of the northwest portion of Mariposa County. The first County seat was at the Turner and Osborn Ranch on Mariposa Creek but shortly thereafter moved to the Snelling Ranch, where a courthouse was constructed in 1857. Except for fertile areas along the banks of the major waterways, the Central Valley remained largely undeveloped. To the speculators that came to the Sierra Nevada from San Francisco and other western ports, the valley probably represented little more than a dry stretch of land to be traversed before reaching the gold fields to the east. The momentum of the gold rush could not be sustained, and by the early 1850s most of the miners and the merchants who relied on their patronage began to look to other pursuits. With the coming of the railroad and the advent of intensive irrigation, the focus of the County shifted from the foothills to the valley.

Beginning in the 1870s, the County saw a change in its economic leadership. Cattle ranching, which boomed during the 1850s and 1860s with the influx of miners and homesteaders to the valley, gave way to agriculture, specifically wheat farming. Throughout the valley, wealthy real estate moguls were applying a similar formula, purchasing large tracts of land called “colonies” for subdivision and selling the parcels to be used for small and medium-sized farming operations. Critical to the marketing and success of these colonies was the development of a reliable water conveyance system that could transform dry soils into arable land. A network of canals soon spread across the valley floor.

Agricultural diversification in the valley began as early as the 1880s when a slump in the price of wheat induced many farmers to switch to citrus and vine crops. Asian and Italian immigrants accelerated this process with the introduction of then-exotic vegetables such as eggplant and asparagus as well as sweet potatoes and yams (Cabezut-Ortiz 1987:67).

2.3.1 Merced Irrigation District and Arena Canal

Located less than a mile north of the study area, the Livingston Canal was built in 1876 by the Farmers Canal Company (Merced Irrigation District 1997). In many instances, the interests of commercial real estate development and irrigation were one and the same. Landowner Charles Huffman acquired and expanded existing water conveyance concerns, including the Farmers Canal Company, through his Merced Canal and Irrigation Company. With financial assistance from Charles Crocker, Huffman consolidated his real estate holdings and the Merced Canal and Irrigation Company into the Crocker-Huffman Land and Water Company in 1888.

The Merced Irrigation District (MID) formed in 1919. Once the MID purchased the Crocker-Huffman canal system and water rights, the MID became the leading irrigation district in the County and was providing irrigation for roughly 180,000 acres of farmland by 1920 (McSwain 1978). As a publicly owned company, the MID operated through the collection of taxes from

landowners. Taxes were based on the crop type and acreage size. Ditch tenders were employed by the MID to maintain laterals and help reduce the frequency of conflicts between agricultural landowners. Plans for a dam began in 1921, and by 1927 the New Exchequer Dam was constructed on the Merced River with fully operational hydroelectric power facilities. Excess generated power was sold to the San Joaquin Power and Light Company, providing another source of income for the company.

Unfortunately for the MID, between the months of October and March, the reservoir would remain empty, thus stopping the sale of excess hydroelectric power. Additionally, hydroelectric revenues dropped during a drought between 1928 and 1932. The result was catastrophic for the MID, and by 1932 the district filed for bankruptcy. Through federal loans and Roosevelt's New Deal plan, the MID regained economic stability, and by 1936 the company was once again operational (Dice 2010). From 1935 to 1937, the MID gained access to funding through the New Deal's Reconstruction Finance Corporation, which allowed MID to line canals and laterals throughout its system. Today, the MID continues to manage a 1,000-square-mile watershed and provide energy services to residents of Merced County.

The Arena Canal is approximately 8.5 miles long, a section of which runs through the southern APE. Sections of the canal were constructed circa 1916–1918 as a secondary canal. It was fed by the Livingston Canal and served to deliver irrigation water to land in the vicinity of the small community of Arena in Merced County. Sections of the Arena Canal north and south of Peach Avenue are depicted on the USGS 1916 Cressey and the 1918 Arena topographic quadrangle maps (U.S. Geological Survey (USGS) 1916, 1918). The original canal was earthen and unlined. The 1948 Cressey quadrangle shows an extension of the canal north of Peach Avenue connecting the north end to the south end. The canal was extended and lined with concrete sometime in the 1940s when the MID made extensive improvements to its systems and infrastructure (Hope 2000).

In the 1920s, the MID included about 180,000 acres. Between 1934 and 1976 the main agricultural commodities grown in the county that relied on the MID were sweet potatoes, grains, pasture, rice, nut trees, peaches, and grapes. These crops are still grown using MID water today (Dice 2010).

3 METHODS

This chapter describes methods used to complete the cultural resource study for the current Project. This includes a records search to identify previous resources and studies within and adjacent to the APE, contact with Native Americans who may have knowledge about the area, and intensive archaeological and built environment pedestrian surveys.

3.1 RECORDS SEARCH

Æ requested a records search from the CCAIC of the CHRIS at California State University, Stanislaus on April 19, 2018 for the original TCP Treatment project (Baloian et al. 2018) to identify previously recorded resources and prior surveys within a 0.5-mile search radius of that project's APE. Because the current undertaking is an expansion to the previous project and the original 2018 records search encompassed the majority of the current APE and surrounding 0.5-mile radius, Æ requested a new records search from the CCIC on March 16, 2022 for only the portion of the APE, and surrounding 0.5 mile, that were not covered by the previous search.

CCAIC staff examined site records, files, maps, and other materials to identify previously recorded resources and prior surveys within the delineated area (Appendix B). Other sources consulted include the Historic Property Data File, NRHP, CRHR, listings of California Historical Landmarks, California Inventory of Historic Resources, and the California Points of Historical Interest.

3.2 ARCHIVAL RESEARCH

The purpose of archival research for this study was to acquire information regarding the potential for historical deposits and historic-era built environment resources to exist within the APE and to build a context to support and guide evaluations of cultural resource eligibility for listing in the CRHR and NRHP. Æ staff reviewed:

- Aerial photographs available through the Map Aerial Locator Tool maintained by California State University, Fresno;
- USGS TopoView; and
- Æ's in-house library, which includes maps and local histories.

The results of archival research, both online and in person, were used in preparing the Project area setting (Chapter 2) and findings (Chapter 4).

3.3 NATIVE AMERICAN OUTREACH

Æ contacted the NAHC to request a search of its Sacred Lands File to identify if there are any Native American resources in the Project area and obtain the names and contact information for

individuals knowledgeable of such resources. The NAHC responded on April 6, 2022, with its findings and attached a list of Native American tribes and individuals culturally affiliated with the area. Æ sent a letter summarizing the cultural resource investigation to each of the contacts identified by the NAHC. In the letter, Æ sought input on known sacred areas within the APE and surrounding region. Æ followed up with a telephone call to each Native American contact to confirm that the correspondence was received and to provide an opportunity for comment. Native American outreach documentation is in Appendix C.

3.4 ARCHAEOLOGICAL AND BUILT ENVIRONMENT FIELD SURVEYS

Æ Associate Archaeologist Ward Stanley and Æ Staff Architectural Historian Cheyenne Good performed an intensive pedestrian survey of the APE on April 1, 2022. Stanley and Good conducted an intensive survey of the APE using parallel and meandering transects spaced no more than 10–15 meters apart where possible. Areas covered in concrete and asphalt were subject to opportunistic survey, which involved surveyors examining all open and natural ground surface as they occurred within areas otherwise covered by pavement, concrete, or manicured landscaping.

Æ collected locational information on the survey coverage methods with an Arrow EOS Global Positioning System (GPS) unit, photographed overviews of the APE documenting the ground visibility and other conditions, and recorded all observations on a Survey Field Record form. All field records and photographs are archived at Æ's office in Fresno, California.

3.5 CULTURAL RESOURCE IDENTIFICATION

The Arena Canal (P-24-000093), the only resource identified in the original 2018 and the current APE, was documented on California DPR 523 series forms. Æ prepared a Linear Feature Record (523E) and location map to document the segment of the canal within the APE. The canal was photographed and the location plotted using a GPS unit. Æ surveyors walked the length of the canal segment within the APE to identify any canal features (i.e., turnouts, head gates, bridges, etc.) that may be present. The completed DPR forms are provided in Appendix D of this report.

JRP Historical Consulting Services (JRP) evaluated the historical significance of the entire canal in 1993 and recommended it not eligible for listing on the NRHP or CRHR (JRP Historical Consulting LLC 1993). The 1993 evaluation was completed more than 25 years ago and was focused on segments of the Arena Canal outside the current APE. Thus, Æ reviewed JRP's previous evaluation and concurred with their findings.

4 FINDINGS

This chapter provides results of the CCAIC records search, the NAHC's search of the Sacred Lands File and Native American communication, and describes the pedestrian surveys, including observations of field conditions and cultural resources identified within the APE.

4.1 RECORDS SEARCH

The 2018 records search for the original TCP Treatment project revealed that there have been 7 previous cultural resource studies conducted within the APE, and 18 studies previously conducted in a 0.5-mile radius of the APE. Four previously recorded historic-era resources are present within the 2018 APE, including the Yamato Colony (P-24-000697), the Merced Irrigation District historic district (P-24-001909), a wood panel and stucco Bungalow-style house (P-24-000503), and the Arena Canal (P-24-000093). There are 29 previously recorded historic-era resources within a 0.5-mile radius of the APE, including the 4 listed above within the APE. No Native American or prehistoric resources have been recorded within the APE or the 0.5-mile radius.

On March 16, 2022, the CCAIC responded to Æ's request with a letter detailing the results of the supplemental records search (Records Search File No. 12109I). The record search revealed that no cultural resource investigations have occurred previously within the current APE or within the 0.5-mile search radius.

No formally recorded cultural resources were identified within the APE. However, two resources are within the 0.5-mile search radius, northwest of the APE. These resources are two historic buildings, Blaine Sheet Metal & Air Conditioning (P-24-000517), and the Sequoia Motel (P-24-000518). No Native American or prehistoric resources have been recorded within the current APE or the 0.5-mile radius.

4.2 NATIVE AMERICAN COMMUNICATION

The NAHC responded to Æ's request on April 6, 2022. Their letter stated that the search of the Sacred Lands File did not indicate the presence of resources in the immediate APE. However, the NAHC cautioned that the absence of specific site information in their file does not indicate the absence of tribal cultural resources in the Project area. The NAHC also supplied a list of individuals to be contacted for information regarding locations of sacred or special sites of cultural and spiritual significance in the Project area, including:

- Chairperson Valentin Lopez of the Amah Mutsun Tribal Band;
- Chairperson Katherine Perez of the North Valley Yokuts Tribe;
- Chairperson Timothy Perez of the North Valley Yokuts Tribe;

- Chairperson Sandra Chapman of the Southern Sierra Miwuk Nation;
- Chairperson Robert Ledger Sr. of the Dumna Wo-Wah Tribal Government;
- Chairperson Neil Peyron of the Tule River Indian Tribe;
- Environmental Department Head Kerri Vera of the Tule River Indian Tribe;
- Tribal Archaeologist Joey Garfield of the Tule River Indian Tribe; and
- Chairperson Kenneth Woodrow of the Wuksache Indian Tribe/Eshom Valley Band.

Æ emailed letters to each of the contacts listed above on April 11, 2022. Two responses were received in response to Æ's outreach efforts. A formal email was received from Tribal Monitor Coordinator Jazzmyn Gegere (Brochini) for the Southern Sierra Miwuk Nation. In her May 10, 2022 communication, she stated that the APE is outside their area of tribal expertise and they had no comments to provide. On June 23, 2022 Æ telephoned the tribal contacts who had not responded to the email outreach. Æ spoke with Chairperson Valentin Lopez from the Amah Mutsun Tribal Band, who stated that the Project is outside of their territory and had no further comments. A log detailing the outreach efforts and responses is provided in Appendix C.

4.3 ARCHIVAL RESEARCH

Æ's review of historical topographic maps and aerial photographs revealed moderate development in the area over the last 100 years. The USGS 1916 Cressey topographic map depicts the early layout of the City, showing business and residential development north of State Route 99 and the Southern Pacific Railroad but very little to the south. The map shows water conveyance systems, such as the Livingston Canal and Wakefield Lateral, indicating a need for water for agricultural purposes. The 1948 edition of the map shows a growing agricultural community and city center on both sides of State Route 99 were extensively built out. These topographic maps depict the Arena Canal drawn in and unnamed on the 1916 map, which was based on a 1914 survey. Most of the southern APE is within newer parks and neighborhoods. An aerial photograph of the Project area taken in 1950 depicts this area as agricultural land.

4.4 ARCHAEOLOGICAL SURVEY

On April 1, 2022, Æ Associate Archaeologist Ward Stanley conducted a pedestrian survey of the 26.8-acre APE for archaeological resources. Approximately 11.75 acres, or 44 percent of the total APE was in heavily developed roadways and neighborhoods that allowed little to no ground visibility. Æ observed all exposed ground surfaces where possible. An additional 2.7 acres, or 10 percent, of the APE was not surveyed because of lack of access either due to private property, fencing, or other obstructions. The remaining 12.35 acres, or 46 percent of the APE, offered moderate to excellent ground visibility and was intensively surveyed.

Where ground was visible, Æ observed tan sandy loam sediments with angular gravels. Vegetation observed was largely the result of urban landscaping, though seasonal grasses and weedy vegetation were present throughout. Æ did not observe any cultural resources within the APE.

4.4.1 Northern Area of Potential Effects

The northern portion of the APE lies within the western side of the City, north of State Route 99. It extends from Well 9 on White Avenue, north to the planned Well 18 at the intersection of Davis Street and White Avenue, where it then extends northward up Livingston Cressey Road to the large reclamation field that houses existing Well 8 (Figure 4-1).

Most of this section of the APE is heavily urbanized, and the ground during the field survey was almost entirely covered by concrete, asphalt, or landscaping (Figure 4-2). Access to areas immediately surrounding both Wells 8 and 9 was restricted by a locked chain link fence perimeter (Figure 4-3). Observations from outside the fencing showed the areas around the pump infrastructures contained concrete pads and introduced gravels, further restricting ground visibility. The ground around Well 9 that was not fenced and around planned Well 18 was accessible and contained flat undeveloped land. Except for occasional overgrown patches of grass, the ground surface was exposed with an average of approximately 70 percent visibility.

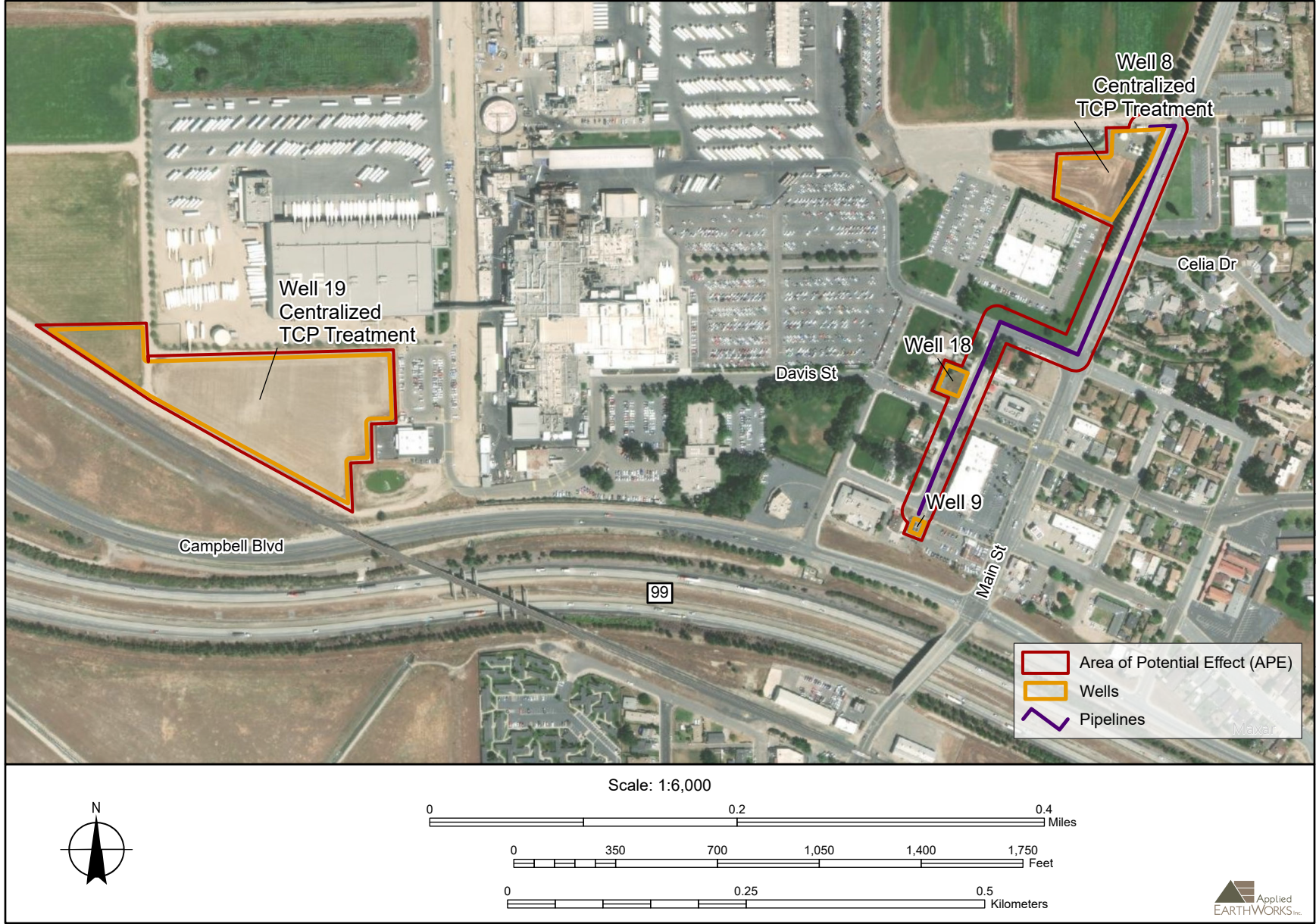
A new Well 19 is planned for a large parcel of land in the western portion of the northern APE, north of State Route 99 and the railroad tracks (Figure 4-4). This parcel was flat and undeveloped, largely containing overgrown grasses and weeds. This grass and marshy conditions left from recent rains inhibited ground visibility and survey coverage in this area. Surface visibility was approximately 50 percent in this portion of the APE.

4.4.2 Southern Area of Potential Effect

The southern portion of the APE is also within the western portion of the city, south of State Route 88. It extends from Arakelian Park on the north then along Emerald Drive to Peach Avenue. Well 17 is south of Peach Avenue on Sun Valley Avenue and Well 12 is east, on Main Street, adjacent to the Livingston Sports Complex (Figure 4-5).

The survey corridor between Wells 12 and 17 on the south and Arakelian Park on the north consist of paved roads and sidewalks through urbanized neighborhoods. Arakelian Park is landscaped and contains play and shade structures, a restroom building, a paved parking lot, and is a noted disc (frisbee) golf area. The Arena Canal is east of Emerald Drive and its banks are either earthen or graded with gravel, although the segment within the current APE contained entirely earthen banks (see Section 4.5).

Much like the northern portion of the APE, the southern area is within a developed neighborhood and natural ground surface visibility was low. However, the banks of the Arena Canal, an open space south of Peach Avenue, and Arakelian Park allowed for better visibility and were surveyed intensely (Figure 4-6). The locations of Wells 12 and 17 were also fenced and inaccessible; however, observation from outside the fencing revealed no ground visibility due to concrete pads and introduced gravels. On average, visibility was approximately 70 percent and no cultural resources were observed.



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Figure 4-1 Northern Area of Potential Effects and project elements.



Figure 4-2 Overview of proposed Well 18, at the northwest section of Davis Street and White Avenue, facing southwest.

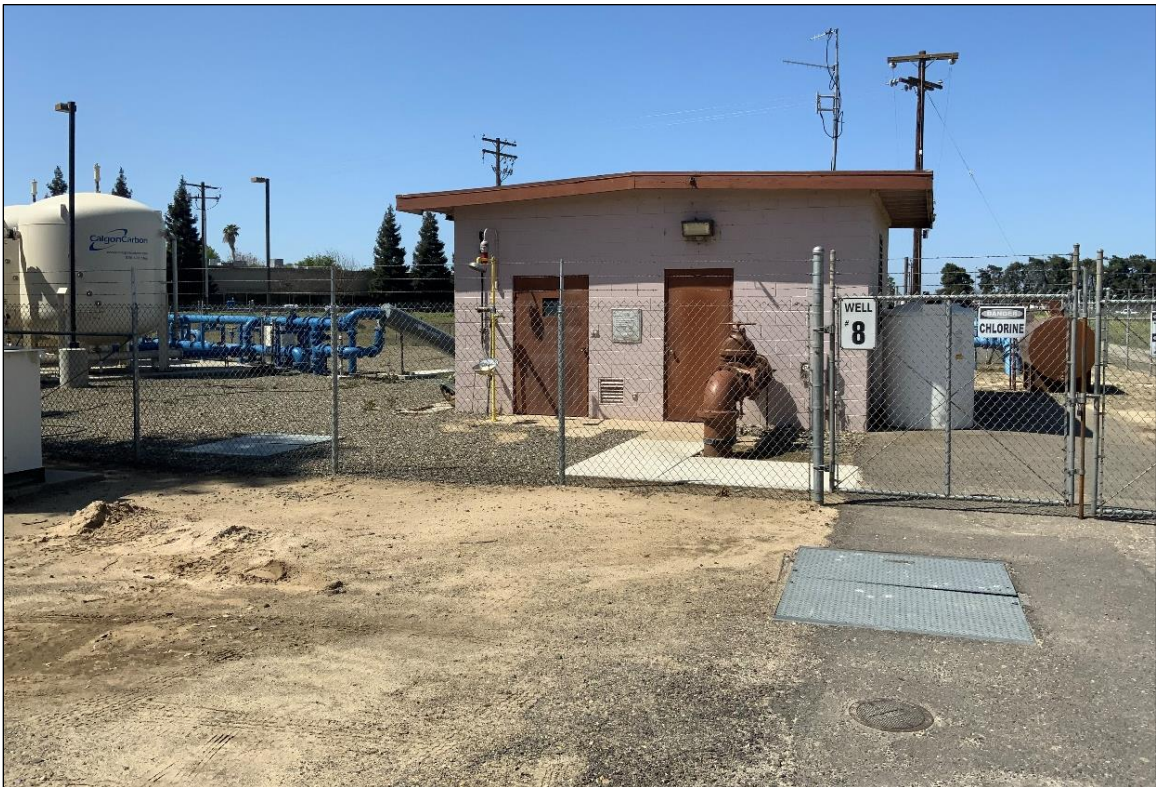


Figure 4-3 Overview of Well 8 survey area. Note chain link perimeter fence, concrete, and gravels obscuring the ground surface, facing northwest.



Figure 4-4 Overview of proposed location of Well 18, northwestern portion of the APE. Foster Farms facility in the background, facing northwest.

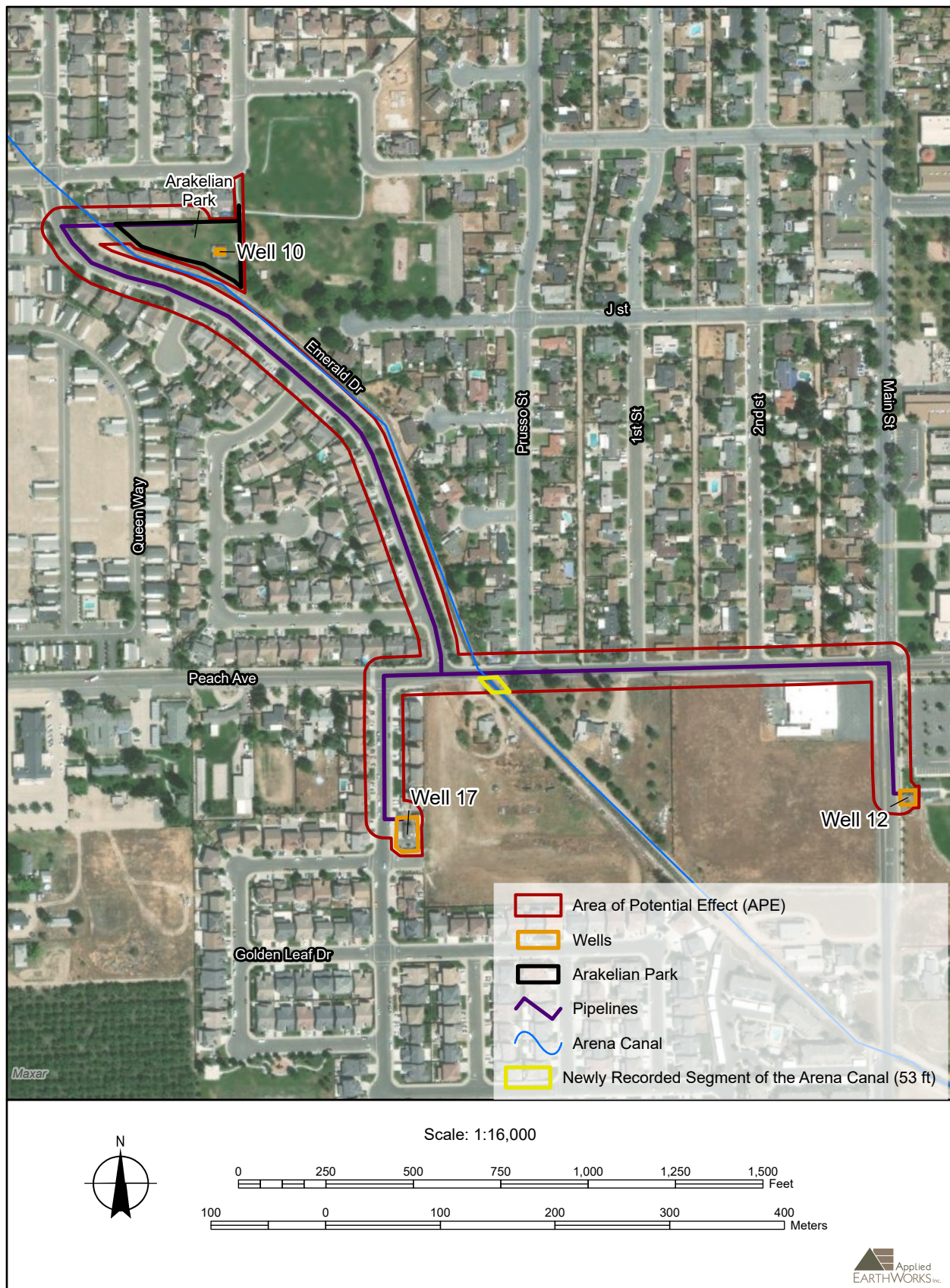


Figure 4-5 Southern Area of Potential Effects and project elements.



Figure 4-6 Open space east of the Arena Canal and south of Peach Avenue, facing south.

4.5 BUILT ENVIRONMENT

Æ Staff Architectural Historian Cheyenne Good conducted the built environment survey on April 1, 2022 and recorded a 53-foot-long segment of the approximately 8.5-mile-long Arena Canal (P-24-000093; Figure 4-7). The Arena Canal is a secondary canal, fed by the larger Livingston Canal, which is part of a network of secondary canals and laterals that provide water for irrigation to farms in the vicinity of Livingston (Hope 2000). Most of the Arena Canal was lined with concrete in the 1940s; however, many segments remain earthen and uncovered.

The northernmost point of the recorded segment is where the canal passes under Peach Avenue (Figure 4-8). The segment measures 18 feet wide at the top of the bank. The width of the bed could not be recorded because water was present within the canal. The height of each bank was measured from the top of the bank's edge to the top of the water's surface; the west bank is 6 feet high, and the east bank is 7 feet high. The west bank is 12.0 feet wide, and the east bank is 13.5 feet wide.

There is a dilapidated water gate feature on the west bank, facing towards Peach Avenue (Figure 4-9). The concrete lining surrounding the feature is deteriorating. The feature is topped with a red painted metal wheel with the words "OPEN" and "HYDRO" and the numbers "22446A" and "701160" (Figure 4-10). In the ground behind the feature, stands a tall, rusted T-bar and a hollow concrete cylinder (Figure 4-11). There is a farm gate supported by two wood posts crossing the width of the east levy. The canal bank beside the farm gate shows evidence of cracking concrete lining (Figure 4-12).

One additional built environment feature, Well 10, was noted during the field survey of Arakelian Park. Although it is proposed to be removed, which is considered an impact under Section 106, it was not evaluated because it was built in 1985 (pers. comm. T. Avina, 2022) and did not meet the 50-year-old threshold to make it a historic-era resource.

JRP documented three segments of the Arena Canal and evaluated the historical significance of the entire resource in 1993 (JRP Historical Consulting LLC 1993). They recommended that the canal is not eligible for inclusion in the NRHP or CRHR. Andrew Hope with the California Department of Transportation concurred with the JRP evaluation of the Arena Canal in 2000 (Hope 2000). AË reviewed all documentation on the Arena Canal and concurs with the findings of ineligibility. Additional information on the Arena Canal is available in the original 2018 Livingston TCP Cultural Resource Inventory report (Baloian et al. 2018). For this effort, AË prepared an update to the existing California DPR cultural resource record form to document the approximate 53-foot segment of the Arena Canal in the APE (Appendix D).



Figure 4-7 Segment of Arena Canal within the current APE, facing south.



Figure 4-8 Arena Canal culvert under Peach Avenue, facing north.



Figure 4-9 Dilapidated water gate feature with deteriorating concrete lining.



Figure 4-10 Red painted wheel topping dilapidated water gate feature.



Figure 4-11 View of T-bar and concrete cylinder behind the dilapidated water gate feature, facing south.



Figure 4-12 View of the farm gate on the east levee with evidence of cracking concrete lining along the bank, facing east.

5

SUMMARY AND MANAGEMENT RECOMMENDATIONS

The City of Livingston proposes to construct additional wells, treatment facilities, and install pipelines to address TCP contaminants within the city of Livingston, Merced County, California. Æ conducted a cultural resources inventory for the original 1,2,3 TCP Removal Treatment System project in 2018 (Baloian et al. 2018); however, since then, the City proposes additional updates including wells, treatment facilities, and pipelines. For the current Project, Æ prepared this cultural resource study and built environment recordation of the 26.8-acre APE for compliance with Section 106 of the NHPA, as amended, and CEQA. This included conducting background research, obtaining a records search from the CCAIC, and a search of the NAHC's Sacred Lands File, outreach with local Native American representatives, intensive pedestrian field surveys of the APE, and background research and recordation of the Arena Canal.

5.1 STUDY SUMMARY

The 2018 records search conducted by the CCAIC for the original TCP Treatment project revealed that there have been 7 previous cultural resource studies conducted within the APE, and 18 studies previously conducted in a 0.5-mile search radius of the APE. Four previously recorded historic-era resources are present within the APE, including a segment of the Arena Canal. There are 29 previously recorded historic-era resources within a 0.5-mile radius of the APE, including those within the APE. The records search conducted by the CCAIC for the current Project revealed no cultural resource investigations have occurred within the additional APE portions or within the 0.5-mile search radius and only the Arena Canal has been previously recorded.

A search of the NAHC files revealed no previously recorded Native American resources within or near the APE. Æ submitted letters electronically to those listed on the NAHC contact list. One response was received from the Southern Sierra Miwuk Nation indicating the APE was outside their traditional use area and they had no comments. Æ followed up with phone calls to the remaining contacts. Æ spoke with Chairperson Valentin Lopez from the Amah Mutsun Tribal Band, who stated that the Project is outside of their territory and had no further comments. A log detailing the outreach efforts and responses is provided in Appendix C.

During the archaeological survey, Æ observed approximately 11.75 acres of the APE was developed with roadways and neighborhoods that provided zero ground visibility. An additional 2.7 acres of the APE was not surveyed due to lack of accessibility from restrictive fencing, private properties, or other factors. The remaining 12.35 acres of the APE was intensively surveyed. These areas varied between dense grass growth with low visibility or empty dirt lots that allowed complete visibility. As a result of the archaeological survey, no prehistoric or historic cultural resources were identified.

The built environment survey identified a portion of the Arena Canal (P-24-000093) west of Emerald Drive in the southern portion of the APE. In 1993, JRP documented three segments of the Arena Canal and evaluated the historical significance of the entire resource (JRP Historical

Consulting LLC 1993). JRP recommended that the canal was not eligible for listing on the NRHP or CRHR and Andrew Hope with the California Department of Transportation concurred with the JRP evaluation of the Arena Canal in 2000 (Hope 2000). Æ reviewed all documentation for the Arena Canal and concurs with the evaluation's findings. Additional information on the Arena Canal is available in the DPR forms in Appendix D and the 2018 Livingston TCP report (Baloian et al. 2018). For this effort, Æ updated the existing California DPR cultural resource record form (Appendix D) to document the approximate 53-foot-long segment of the Arena Canal in the APE.

Finally, for the 2018 study, Æ prepared a geoarchaeological assessment of the vertical APE for buried archaeological deposits. The assessment yielded information suggesting that there is a low potential to encounter buried cultural resources within the original APE. Although much of the floodplain and upper river terraces of the Merced River have a moderate to high potential to contain buried archaeological remains, the APE lies just outside the area of high sensitivity. Although the APE contains young to modern soils, which typically have a moderate potential for buried resources, much of the "natural" vertical APE has been disturbed by extensive agricultural practices and urban development. The 2018 study determined that the potential to encounter buried soils with extensive in situ cultural deposits within the APE is low and Æ concurs with this determination for the current APE as well.

5.2 RECOMMENDATIONS

Æ's archaeological and built environment pedestrian surveys did not encounter any prehistoric or historic-era sites, artifacts, or features, that would suggest that the APE contains, or could contain, cultural resources that may be adversely impacted during ground-disturbing activities. Although Æ recommends no specific measures, general recommendations are provided below in the unlikely event that unanticipated cultural materials are discovered during ground-disturbing activities.

Inadvertent Discoveries

If cultural resources are encountered at any time during construction or ground-disturbing activities within the APE, all work in the vicinity of the find should be halted until a qualified archaeologist can be retained to assess the discovery. Such finds include, but are not limited to, archaeological grinding implements, stone tools, soapstone bowls, ornaments (e.g., beads, pendants), midden, or any intact archaeological resources as well as intact building foundations and high concentrations of historical artifacts, or other significant cultural resources. If the find(s) is a cultural resource that could be considered a historic property, the archaeologist shall make appropriate recommendations to the lead agency. The lead agency shall make the final determination as to treatment and disposition of the resource(s).

Human Remains

If human remains are uncovered, or in any other case when human remains are discovered during construction, the Merced County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified as those of a Native American, California Health and Safety Code 7050.5 and Public Resources Code 5097.98 require that the coroner notify the

NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will provide recommendations to the landowner for treatment and sensitive management of the remains.

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APPENDIX A

Personnel Qualifications

Areas of Expertise

- Cultural resource management
- Project management
- Archaeological field work/Supervision
- GIS analysis and desktop site assessments
- Faunal analysis
- Prehistory and history of California and the Southwest

Years of Experience

- 22

Education

M.A., Anthropology and Applied Archaeology, Eastern New Mexico University, Portales, 2008

B.A., Classical and Near Eastern Archaeology, Bryn Mawr College, Pennsylvania, 2000

Registrations/Certifications

- Register of Professional Archaeologists 16575 (2009)
- OSHA 40-hour HAZWOPER (2019)

Permits/Licensure

- Principal Investigator, California BLM Statewide Cultural Resources Use Permit CA-21-21

Professional Affiliations

- Society for American Archaeology
- Society for California Archaeology

Professional Experience

- | | |
|-----------|--|
| 2021– | Vice President/Managing Principal/Principal Archaeologist, Applied EarthWorks, Inc., San Luis Obispo and Fresno, California |
| 2019–2021 | Managing Principal/Principal Archaeologist, Applied EarthWorks, Inc., San Luis Obispo, California |
| 2014–2018 | Senior Archaeologist/Project Manager, Applied EarthWorks, Inc., San Luis Obispo, California |
| 2008–2014 | Associate Archaeologist/Faunal Analyst, Applied EarthWorks, Inc., Lompoc, California |
| 2004–2008 | Faunal Analyst/Student Supervisor/ Educational Outreach, Blackwater Draw Archaeological Site and Museum, Eastern New Mexico University, Portales |
| 2001–2004 | Staff Archaeologist, Cultural Resource Management Services, Paso Robles, California |
| 2000 | Field Archaeologist, Princeton Expedition, Polis Chrysochous, Cyprus |
| 1999 | Archaeological Field School, Anathica Field School, Petras, Crete, Greece |

Technical Qualifications

Ms. Enright is an experienced professional archaeologist, principal investigator, project manager, and field supervisor/director who has managed projects throughout California and the Southwest. She has participated at all levels within the cultural resource management industry with projects ranging from survey and site recording; testing and data recovery; National Register eligible excavations; buried site testing (backhoe trenching); development of monitoring plans; database creation and maintenance; curation management; GIS; technical report production; and compliance assistance for NHPA and CEQA projects. Ms. Enright has developed close relationships with tribal groups and individuals throughout the Central Coast and Central Valley. She has played a critical role in providing consultation support between agencies and Native American groups for AB 52, CEQA, and Section 106. Additionally, she has experience managing large on-call contracts and complicated cultural resource management efforts with complex regulatory requirements. Several of these efforts have been in support of energy projects. Ms. Enright has authored or co-authored more than 70 technical reports and other NHPA, NEPA, and CEQA compliance documents, and presented research at state and national archaeological meetings.

Areas of Expertise

- Cultural Resources Management
- Prehistoric Archaeology of Southern California
- Indigenous Archaeology and Native American/Descendant Community Coordination
- Federal, State, Local Environmental Laws and Regulations
- Traditional Cultural Property and Landscape Analysis

Years of Experience

- 24

Education

M.S., Anthropology, focus Archaeology, 2003, University of California, Riverside

B.S., Anthropology, 2000, University of California, Riverside

B.A., Linguistics, 2000, University of California, Riverside

Registrations/Certifications

- Registered Professional Archaeologist 28576661
- Cultural Consultant, Riverside County #171

Permits/Licensure

- Field Director, California BLM Statewide Cultural Resources Use Permit CA-21-21

Professional Associations

- Society for California Archaeology
- Archaeological Institute of America

Professional Experience

- | | |
|-----------|---|
| 2020– | Senior Archaeologist/Project Manager, Applied EarthWorks, Inc., San Luis Obispo and Fresno, California. |
| 2017–2021 | Senior Ethnoarchaeologist, Cultural Geographics Consulting. |
| 2007–2017 | Deputy Tribal Historic Preservation Officer, Pechanga Band of Luiseño Mission Indians. |
| 2001–2015 | Archaeological Assistant, San Bernardino County Coroner. |
| 2002–2007 | Senior Archaeologist, L&L Environmental, Inc. |

Technical Qualifications

Ms. Hoover has more than 24 years of experience in archaeological, cultural, and tribal resource management in southern California, Alta and Baja California, and Yucatan, Mexico. Ms. Hoover has collaborated with governmental agencies, environmental consultants, and indigenous communities to develop sustainable and practical applications for the identification and preservation of archaeological and tribal cultural resources, including landscapes and large, geographical features. As a capable Project Manager, she has coordinated dozens of CRM projects during all phases of development, including managing logistics and communications with various clients, lead agencies, Tribal communities, and project staff.

Ms. Hoover has authored, co-authored, reviewed, and contributed to hundreds of California Environmental Quality Act (CEQA), Section 106 of the National Historic Preservation Act (NHPA), and National Environmental Policy Act (NEPA) technical reports; Programmatic, Memoranda, and Master Agreements; Tribal Historic Preservation Office (THPO) applications and associated tribal ordinances and historic preservation guidance; ethnographic studies and National Register of Historic Places eligibility forms; and other compliance and mitigation documents.

Ms. Hoover has presented collaborative projects, personal research, cultural resources education, and environmental regulation guidance trainings to a wide variety of audiences, including topics such as AB 52, SB 18 and CEQA guidance, cultural and tribal consultation best practices, and Tribal Monitoring Program trainings. She has contributed to CalTHPO organizational committees, participated in development of California and Federal archaeological and tribal consultation policies, and contributed to a published book on Tribal GIS applications.

Areas of Expertise

- Cultural resource management
- Project management
- Architectural history
- California history
- Environmental history
- CEQA/NEPA analysis
- Secretary of the Interior's Standards for the Preservation of Historic Properties
- Environmental and land-use planning
- Design Reviews and Monitoring Plans

Years of Experience

- 8

Education

M.A., History, California
Polytechnic State University, San
Luis Obispo, 2015 (with distinction)

B.A., Political Science/
Communications, California
Polytechnic State University, San
Luis Obispo, 2003

Professional Affiliations

- California Preservation Foundation
- American Historical Association
- Society of Architectural Historians
- American Cultural Resources Association

Professional Experience

2020–	Senior Architectural Historian, Applied EarthWorks, Inc., San Luis Obispo and Fresno, California
2019–2020	Associate Architectural Historian, Applied EarthWorks, Inc., San Luis Obispo, California
2018–2019	Planner, Santa Barbara County Planning and Development Department, Development Review Division, Santa Maria, California
2017–2018	Cultural Resources Manager, LSA Associates Inc., San Luis Obispo, California
2015–2017	Cultural Resources Analyst, LSA Associates Inc., San Luis Obispo, California
2013–2015	Cultural Resources Assistant, LSA Associates Inc., San Luis Obispo, California

Technical Qualifications

Ms. Long is a Senior Architectural Historian at Applied EarthWorks, Inc. She meets the Secretary of the Interior's (SOI) Professional Qualification Standards for Architectural History and History and is an experienced project manager. With over 8 years of experience, Ms. Long's professional activities include effects analysis, policy consistency analysis, historical resource evaluation, significance evaluation, integrity assessment, design review, treatment plans, archival and historical research, and architectural field surveys. Prior to joining Applied EarthWorks, Ms. Long practiced environmental and land use planning in addition to cultural resource management. She has completed projects in consultation with California Department of Transportation (Caltrans) District 12 as well as various local governments and private-sector clients to satisfy compliance requirements under Sections 106 and 110 of the NHPA, CEQA, and local regulations. Ms. Long has authored Initial Studies, contributed to Environmental Impact Reports and Environmental Assessments, and prepared regulatory permits in Santa Barbara County. Since joining Applied Earthworks, she has used her strong CEQA background to manage built environment and archaeological projects in Fresno, San Luis Obispo, Santa Barbara, and Monterey counties. She has prepared evaluations for state landmarks and at-risk properties and performed Section 110 condition assessments at military installations. She has also reviewed projects for consistency with the SOI Standards for the Treatment of Historic Properties. Ms. Long is familiar with residential, commercial, civic, agricultural, military, and transportation related properties.

APPENDIX B

Records Search Results

*Archaeological site locations are exempt from the California Public Records Act, as specified in Government Code 6254.10, and from the Freedom of Information Act (Exemption 3), under the legal authority of both the NHPA (PL 89-665, as amended, Section 304[a]) and the Archaeological Resources Protection Act (PL 96-95, Section 9[a]).

APPENDIX D

CA Department of Parks and Recreation Form

*Archaeological site locations are exempt from the California Public Records Act, as specified in Government Code 6254.10, and from the Freedom of Information Act (Exemption 3), under the legal authority of both the NHPA (PL 89-665, as amended, Section 304[a]) and the Archaeological Resources Protection Act (PL 96-95, Section 9[a]).