

# **Sump Station Facilities Improvement Project**

**Sacramento, CA**

## **Initial Study/Mitigated Negative Declaration**

PREPARED FOR THE  
CITY OF SACRAMENTO



PREPARED BY RANEY PLANNING & MANAGEMENT, INC.  
SACRAMENTO, CALIFORNIA

MARCH 2021

# SUMP STATION FACILITIES IMPROVEMENT PROJECT

## SACRAMENTO, CA

### INITIAL STUDY/MITIGATED NEGATIVE DECLARATION FOR ANTICIPATED SUBSEQUENT PROJECTS UNDER THE 2035 GENERAL PLAN MASTER EIR

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the City of Sacramento, Community Development Department, 300 Richards Boulevard, 3<sup>rd</sup> Floor, Sacramento, CA 95811, pursuant to the California Environmental Quality Act (Public Resources Code Sections 21000 *et seq.*), CEQA Guidelines (Title 14, Section 15000 *et seq.* of the California Code of Regulations) and the Sacramento Local Environmental Regulations (Resolution 91-892) adopted by the City of Sacramento.

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#### ORGANIZATION OF THE INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

This IS/MND is organized into the following sections:

**SECTION I - BACKGROUND:** Provides summary background information about the project name, location, sponsor, and the date this IS/MND was completed.

**SECTION II - PROJECT DESCRIPTION:** Includes a detailed description of the proposed project.

**SECTION III - ENVIRONMENTAL CHECKLIST AND DISCUSSION:** Reviews proposed project and states whether the project would have additional significant environmental effects (project-specific effects) that were not evaluated in the Master EIR for the 2035 General Plan.

**SECTION IV - ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:** Identifies which environmental factors were determined to have additional significant environmental effects.

**SECTION V - DETERMINATION:** States whether environmental effects associated with development of the proposed project are significant, and what, if any, added environmental documentation may be required.

**REFERENCES CITED:** Identifies source materials that were consulted in the preparation of the IS/MND.

**APPENDICES:** Appends technical information that was referenced as attached in the preparation of the IS/MND.

## **SECTION I - BACKGROUND**

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Project Name and File Number: Sump Station Facilities Improvement Project

Project Location: Multiple sites  
Sacramento, CA 95833, 95815, 95832  
See Table 1 and Table 2 below for location details and Assessor's Parcel Numbers (APNs)

Project Applicant: City of Sacramento Utilities Department  
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Sacramento, CA 95822  
(916) 808-7890

Lead Agency Contact: Raymond Kong  
Senior Engineer  
Department of Utilities  
(916) 808-1435  
RKong@cityofsacramento.org

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Date Initial Study Completed: March 2021

This IS/MND was prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Sections 1500 *et seq.*). The Lead Agency is the City of Sacramento.

The City has prepared the attached IS/MND to review the discussions of cumulative impacts, growth inducing impacts, and irreversible significant effects in the 2035 General Plan Master EIR to determine their adequacy for the project and identify any potential new or additional project-specific significant environmental effects that were not analyzed in the Master EIR and any mitigation measures or alternatives that may avoid or mitigate the identified effects to a level of insignificance (see CEQA Guidelines Sections 15177 and 15178). The IS/MND identifies new significant effects as well as mitigation measures that would reduce each such effect to a less-than-significant level. A Mitigated Negative Declaration is the appropriate CEQA document (CEQA Guidelines Section 15070).

As part of the Master EIR process, the City is required to incorporate all feasible mitigation measures or feasible alternatives appropriate to the project as set forth in the Master EIR (CEQA Guidelines Section 15177(d)). Policies included in the 2035 General Plan that reduce significant impacts identified in the Master EIR are identified and discussed. The mitigation monitoring plan for the 2035 General Plan, which provides references to applicable General Plan policies that reduce the environmental effects of development that may occur consistent with the 2035 General Plan, is included in the adopting resolution for the Master EIR. See City Council Resolution No. 2015-0060, beginning on page 60.

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The analysis contained in this IS/MND incorporates by reference the general discussion portions of the 2035 General Plan Master EIR. (CEQA Guidelines Section 15150(a)). The Master EIR, including Resolution No. 2015-0060, is available on the City's web site at:

<http://www.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports>

Due to the COVID 19 crises and the current public counter closures, the Master EIR is not available for review in printed form at City Offices. If you are seeking a hard copy please contact Scott Johnson, Senior Planner, at (916) 808-5842 or [srjohnson@cityofsacramento.org](mailto:srjohnson@cityofsacramento.org)

The City will circulate a Notice of Availability/Notice of Intent (NOA/NOI) that confirms the City's intention to adopt the Mitigated Negative Declaration, and provides dates for public comment. The NOA/NOI will be available on the City's web site set forth above.

Please send written responses to:

Scott Johnson, Senior Planner  
Community Development Department  
City of Sacramento  
300 Richards Boulevard, 3<sup>rd</sup> Floor  
Sacramento, CA 95811  
Direct Line: (916) 808-5842  
[srjohnson@cityofsacramento.org](mailto:srjohnson@cityofsacramento.org)

## **SECTION II - PROJECT DESCRIPTION**

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### **Introduction**

The Project Description section of the IS/MND provides a description of the Sump Station Facilities Improvement Project (proposed project) and includes the project location, existing conditions, surrounding land uses, and project components.

### **Project Location**

The proposed project consists of five existing sump stations within the City of Sacramento: Sump 089, Sump 151, Sump 155, Sump 058, and Sump 102 (see Figure 1). The locations of the five sump stations, collectively referred to herein as the project sites, are shown in Figure 2 through Figure 4.

### **Existing Conditions and Surrounding Land Uses**

The sump stations direct treated stormwater through underground piping to stormwater outfalls along waterways within the City. Each of the sump stations are owned, operated, and maintained by the City of Sacramento Department of Utilities. The existing conditions at each of the existing sump stations is summarized in Table 1.

<b>Table 1</b>		
<b>Sump Station Locations and Existing Conditions</b>		
<b>Sump #</b>	<b>Location</b>	<b>Existing Conditions</b>
089	Sump 089 is located near 8357 Beach Lake Road and pumps through the levee into Morrison Creek.	The sump consists of one 18-inch and three 42-inch welded steel pipes (WSP) that penetrate the Morrison Creek levee and outfall into the creek.
151	Sump 151 is located near 1420 Expo Parkway and pumps through the levee into the American River floodplain.	The sump consists of one 54-inch WSP, one 16-inch WSP, one 42-inch high-density polyethylene (HDPE) pipe, one 42-inch WSP and two 30-inch WSPs that penetrate the American River levee. The sump pumps stormwater across the levee into the American River floodplain.
155	Sump 155 is located near 6007 Camellia Avenue and pumps through the levee into the American River.	The sump consists of one 42-inch one corrugated metal pipe (CMP) and two 36-inch WSPs that penetrate the American River levee and outfall into the American River.
058	Sump 058 is located at 1185 Azusa Street and pumps through the levee into Steelhead Creek.	The sump consists of one 12-inch and two 20-inch WSPs that penetrate the American River levee and outfall into the American River floodplain
102	Sump 102 is located near 300 Bowman Avenue and pumps through the levee into Natomas East Main Drainage Canal (NEMDC).	The sump consists of one 12-inch and three 36-inch WSPs that penetrate the NEMDC levee and outfall into the canal.

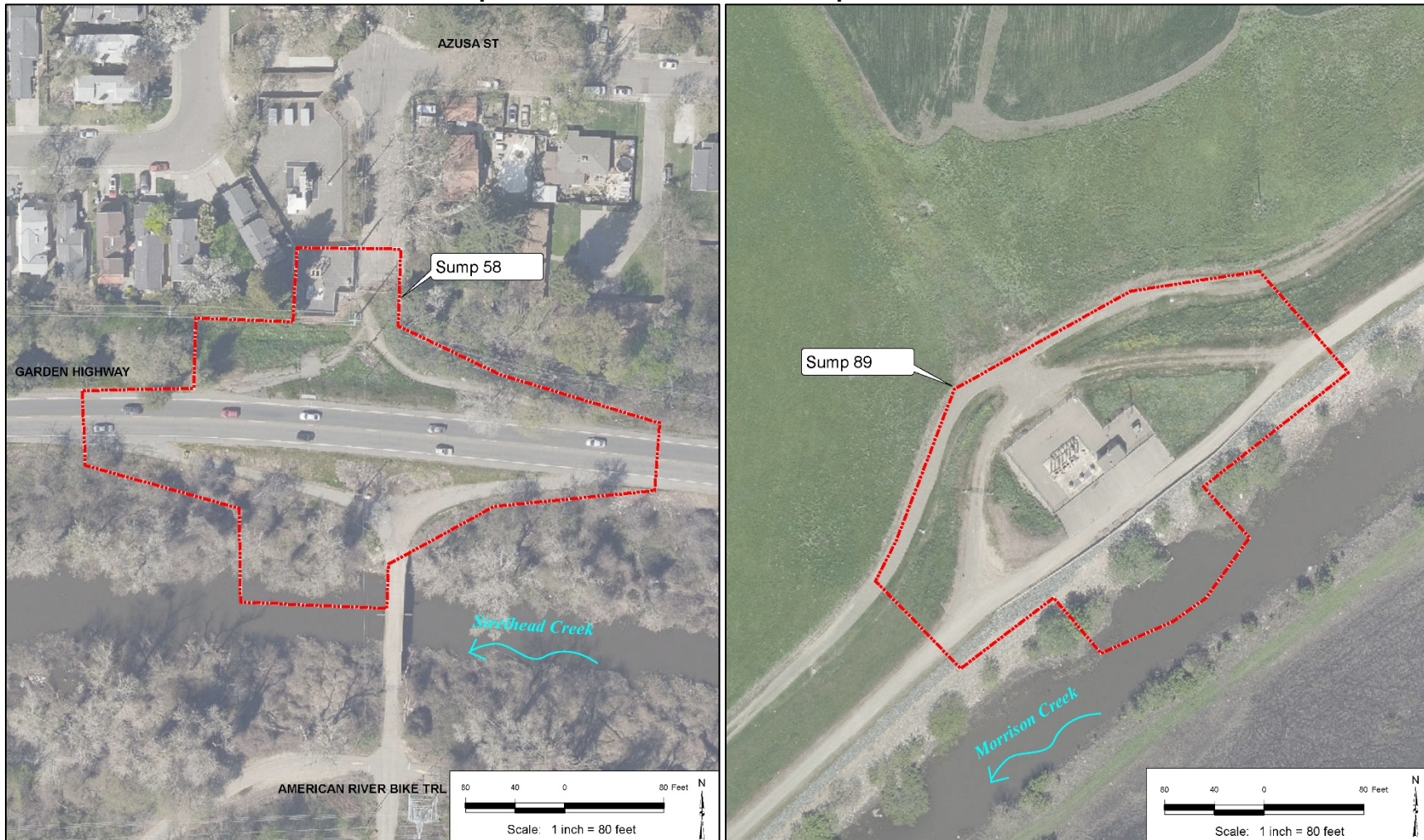
# SUMP STATION FACILITIES IMPROVEMENT PROJECT

## INITIAL STUDY

**Figure 1**  
**Project Location**



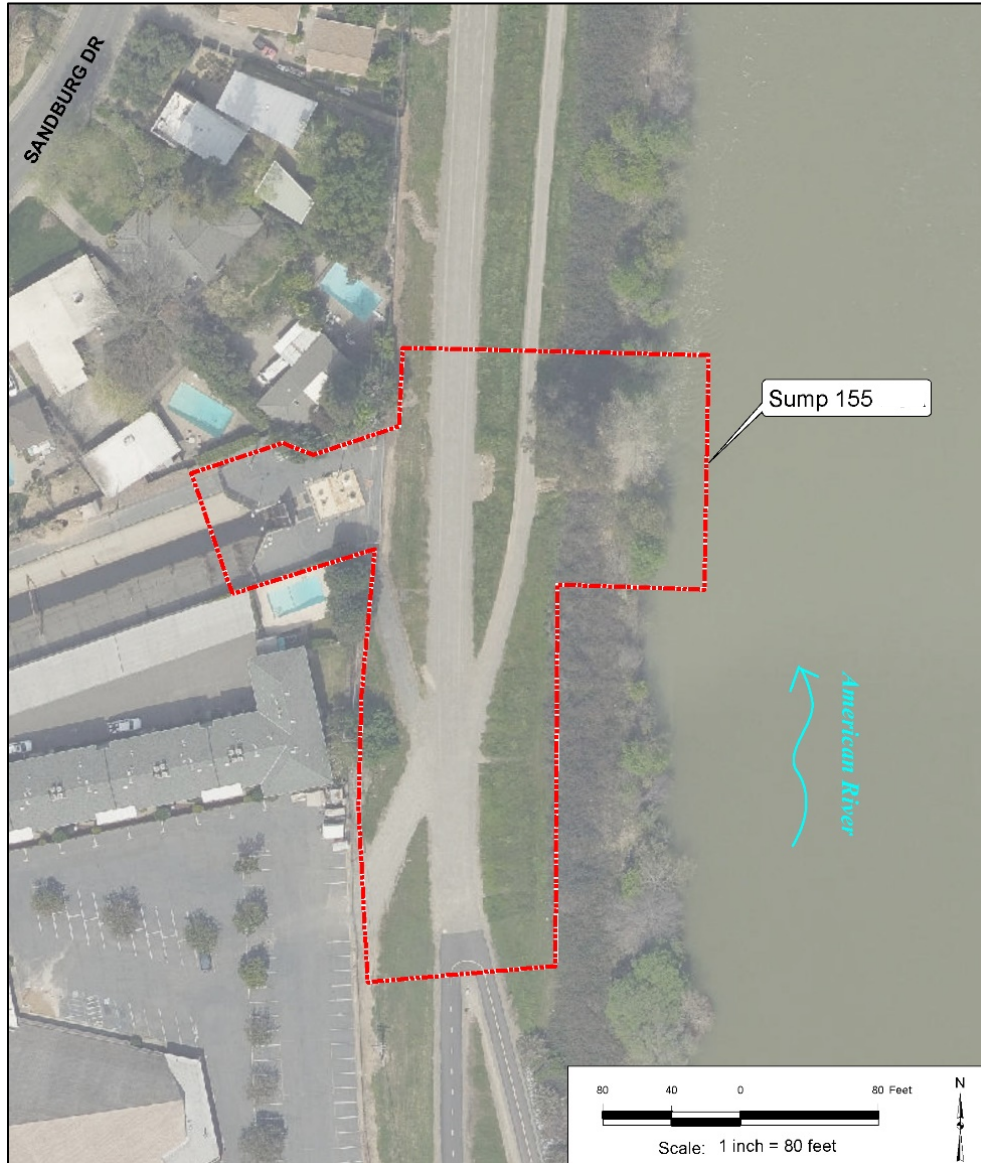
Figure 2  
Sump Station Site Boundaries: Sumps 058 and 089



**Figure 3**  
**Sump Station Site Boundaries: Sumps 102 and 151**



**Figure 4**  
**Sump Station Site Boundaries: Sump 155**



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The acreage and Assessor's Parcel Numbers (APNs) for each of the project sites are summarized in Table 2 below. Combined, the project sites and the staging areas total approximately nine acres.

<b>Table 2</b>		
<b>Sump Station Parcel Information</b>		
<b>Sump #</b>	<b>Total Acreage</b>	<b>APNs</b>
089	1.60	119-0090-004, 119-0090-012
151	2.52	275-0260-007, 275-0260-014, 275-0260-015, 275-0260-023, 275-0270-012, 275-0270-036, and 275-0300-008
155	1.33	005-0010-005, 005-0010-024, 005-0010-025, 005-0203-005, 005-0203-006, 005-0203-014, 005-0233-003, 005-0233-004, 005-0233-005, 005-0233-006
058	1.57	274-0060-003, 274-0060-005, 274-0060-030, 274-0390-017, 274-0390-018, 274-0390-019, 274-0120-001, and 274-0120-003
102	0.72	262-0132-013, 263-0260-016
Note: The acreages listed above represent the Biological Study Area (BSA) evaluated as part of the Biological Resources Evaluation prepared for the proposed project. The BSA encompass the entire project area, including potential access and staging areas; thus, the BSA is larger than the actual disturbance limits associated with the project. The BSA does not include all areas that are disturbed or developed under existing conditions.		

## Project Components

As mandated by the Sacramento Area Flood Control Agency (SAFCA) and the U.S. Army Corps of Engineers (USACE), sump station outfalls that penetrate and cross major levees within the City of Sacramento are inspected on a five-year cycle. The proposed project entails the complete replacement of the pump discharge pipe for three drainage sump station facilities and installation of stairs on the waterside slope for two additional drainage sump station facilities, as described in the following sections. The proposed improvements would not alter the overall capacity of the sump station facilities relative to existing conditions.

While the proposed improvements would involve ground disturbance associated with trenching for the pipe replacement, the overall area of disturbance would be limited to areas which have been previously disturbed as a result of prior sump station improvements. Upon completion of the proposed improvements, areas subject to disturbance would be revegetated as necessary. The proposed project would not alter current operations and maintenance at the sump station facilities. Ground-disturbing activities for the complete pipe replacement work would extend to a maximum anticipated depth of 10 feet.

The project includes three proposed staging areas: one on the land side of the levee at Sump 089 (Sump 089 staging area), one on La Riviera Drive just east of Howe Avenue, (La Riviera staging area) (see Figure 5), and one west of and adjacent to the southeast corner of Lathrop Way (Lathrop staging area) (see Figure 5). The Sump 089 staging area occurs on existing gravel service roads and adjacent nonnative annual grassland. The La Riviera and Lathrop staging areas occur in fenced, cleared areas that are used for staging and stockpiling of construction materials under baseline conditions.

Figure 5  
La Riviera and Lathrop Staging Areas



The La Riviera staging area is located on La Riviera Drive just east of Howe Avenue, on a graveled area adjacent to Sump 91 (not included in the proposed project). The Lathrop staging area is located west of and adjacent to the southeast corner of Lathrop Way.

For all sites, BMPs would be implemented to prevent debris from entering waterways. Standard City BMPs include the use of straw bales, sandbags, gravel traps, and filters; erosion control measures such as vegetation and physical stabilization; and sediment control measure such as fences, dams, barriers, berms, traps, and basins. City staff inspects the erosion, sediment and pollution control requirements in accordance with City codes.

### Complete Discharge Pipe Replacement

The extents of the complete discharge pipe replacements include replacement from the pump discharge across the levee to the outfall structure, including through the headwall (see Figure 6 through Figure 8). The area around the existing pipes would be excavated and the pipes would be cored out through the headwall on the waterside of the levee. The outfall structure itself would not be replaced or reconstructed as part of the proposed project. To remove pipes in the levee, trenches that are approximately twice the width of each pipe would be excavated from the landside to the waterside of the levee (for pipes that are close together, one wider trench may be used to accommodate multiple pipes) below the pipes.

The fill beneath the pipes would be built back up to the bottom of the new pipes, which may be installed at a higher elevation than the removed pipes. Except where noted below, project sites would be returned to their existing condition post-construction.

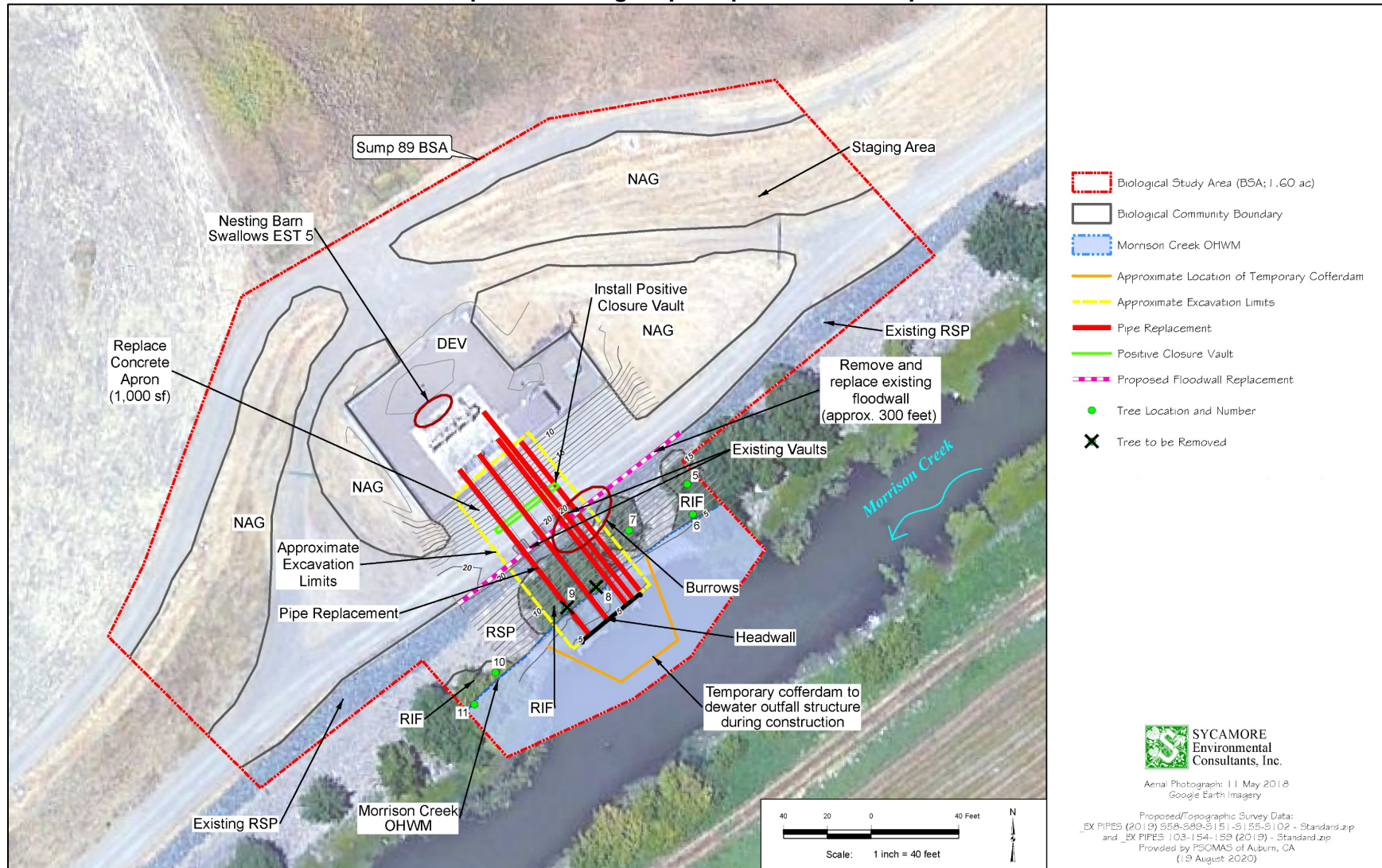
Where installation of positive closure vaults at the hinge point of the levee is required, the vault area would be excavated to the bottom of the levee, then built back up from the bottom of the vault. The vault is poured, cast-in-place concrete and would be partially buried. For all sumps, work would be completed during the summer months outside the flood season for each location. Construction is anticipated to take approximately four months, during one construction season.

Two trees will be removed at Sump 089 to access the existing pipes. Up to four trees may need to be removed at Sump 155, depending on the proximity of excavation and concrete apron removal. Riparian vegetation near the outfall structures may require minor trimming at all sump locations, with the exception of Sump 151. The below section provides a bulleted description of the key components of the sumps for which complete discharge pipe replacements would occur.

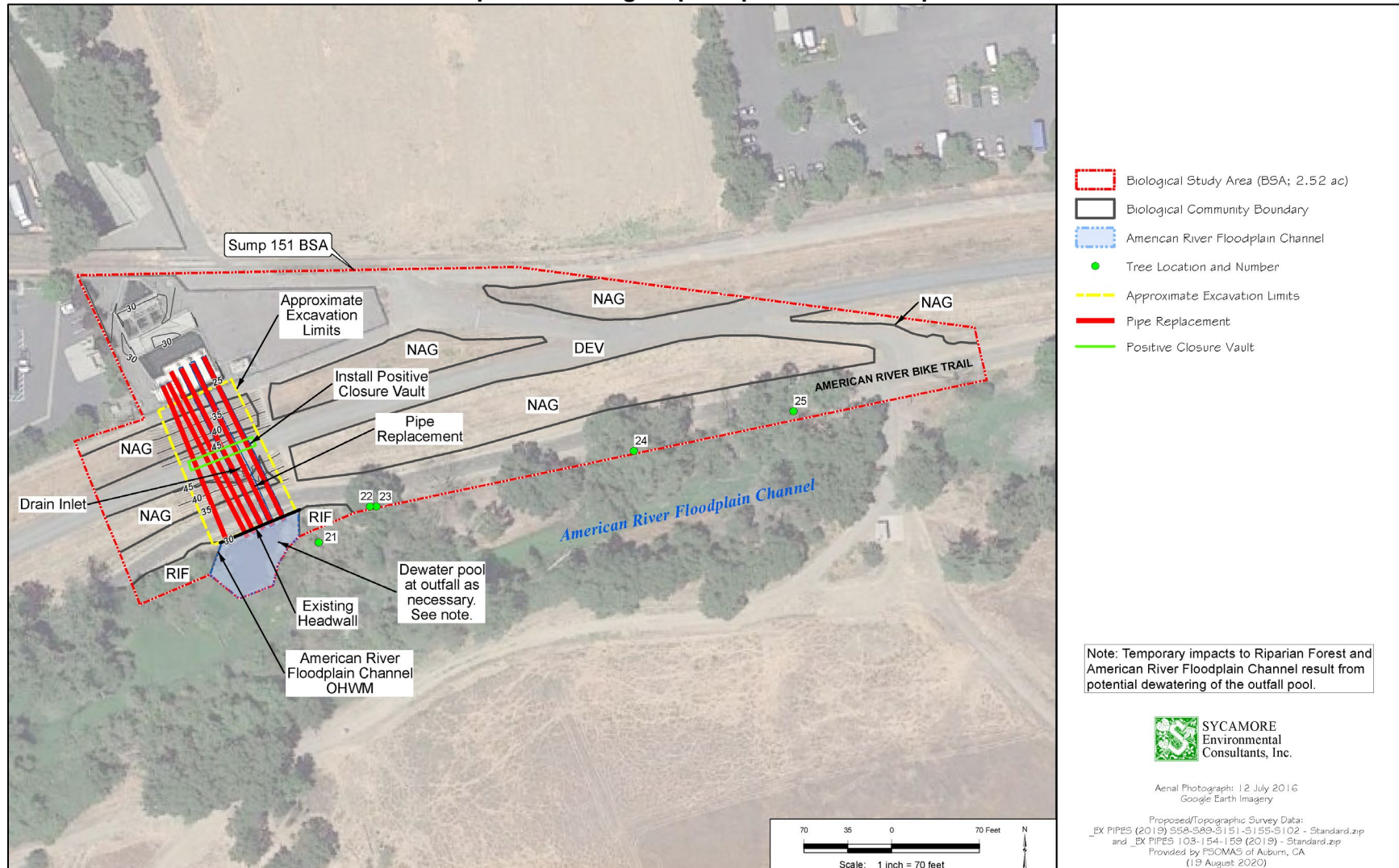
#### *Sump 089*

- Replacement of approximately 287 feet of 42-inch WSP;
- Replacement of approximately 112 feet of 18-inch WSP;
- Installation of a positive closure vault at top of levee hinge point;
- Removal and replacement of a portion of the existing floodwall (approximately 300 feet);
- Replacement of approximately 1,000 square feet (sf) of concrete apron;
- Replacement of the level sensor conduit across levee;
- Replacement of the outfall structure higher on the levee slope;
- Installation of a temporary cofferdam at the outfall for dewatering during pipeline replacement; and
- Removal of two trees at the pump outfall, to allow access to the construction site.

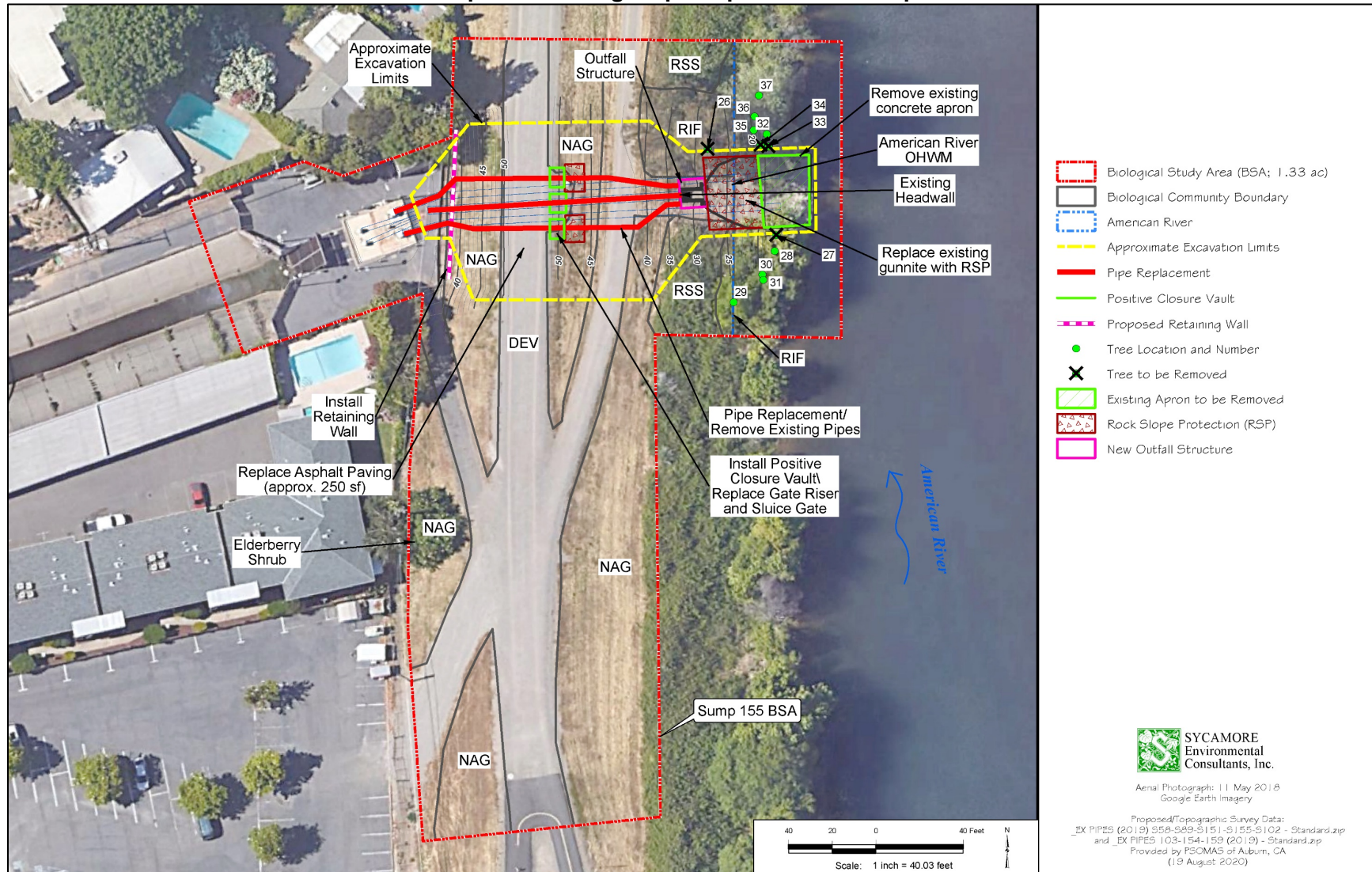
**Figure 6**  
**Complete Discharge Pipe Replacement: Sump 089**



**Figure 7**  
**Complete Discharge Pipe Replacement: Sump 151**



**Figure 8**  
**Complete Discharge Pipe Replacement: Sump 155**



*Sump 151*

- Replacement of approximately 146 feet of 54-inch WSP with HDPE;
- Replacement of approximately 146 feet of 42-inch HDPE;
- Replacement of approximately 146 feet of 42-inch WSP with HDPE;
- Replacement of approximately 277 feet of 30-inch WSP with HDPE;
- Replacement of approximately 146 feet of 16-inch WSP with HDPE;
- Installation of a positive closure vault at the top of the levee hinge point; and
- Replacement of approximately 2,250 sf of asphalt paving at the south end of the sump station and bike path.

*Sump 155*

- Replacement of approximately 351 feet of 36-inch WSP with HDPE;
- Replacement of approximately 142 feet of 42-inch CMP;
- Installation of a positive closure vault at the top of the levee hinge point (using similar methods as closure vault replacement);
- Installation of a gate riser structure and sluice gate;
- Replacement of approximately 250 sf of asphalt paving;
- Installation of a retaining wall at the sump station on the landside toe of the levee;
- Installation of stairs on waterside slope; and
- Installation of a common outfall structure for all three discharge pipes.

It should be noted that for Sump 155, two pipes are contained within a sloped, concrete apron that extends over the American River, and a third pipe extends from a typical concrete outfall structure further up the levee bank. Guniting has been placed between the top of the concrete apron and the bottom of the upper outfall structure. The lower, sloped concrete apron has been undermined by the river and would require removal as part of the proposed project.

Partial Improvements (i.e., stair installation)

Partial improvements would occur at Sumps 058 and 102 and would consist of installation of stairs on the waterside slope (see Figure 9 and Figure 10). No work within the river would occur and there would be limited ground disturbance as needed for forming the cast-in-place stairs.

**Figure 9**  
**Partial Improvement: Sump 058**



**Figure 10**  
**Partial Improvement: Sump 102**



### Project Approvals

The proposed project would require the following approvals by the lead agency (i.e., the City of Sacramento):

- Adoption of the IS/MND and Mitigation Monitoring Plan; and
- Approval of 100% Issued for Bid Plans.

In addition, the proposed project would require the following approvals from responsible and trustee agencies:

- Section 404 Permit – USACE;
- Section 401 Permit – Regional Water Quality Control Board (RWQCB);
- Routine Maintenance Agreement – California Department of Fish and Wildlife (CDFW);
- Section 1602 Lake or Streambed Alteration Agreements (SAA) – CDFW; and
- Section 408 Encroachment Permit – Central Valley Flood Protection Board (CVFPB).

## **SECTION III – ENVIRONMENTAL CHECKLIST AND DISCUSSION**

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### **LAND USE, POPULATION AND HOUSING, AGRICULTURAL RESOURCES AND ENERGY**

#### **Introduction**

CEQA requires the Lead Agency to examine the effects of a project on the physical conditions that exist within the area that would be affected by the project. CEQA also requires a discussion of any inconsistency between the proposed project and applicable general plans and regional plans.

This section of the IS/MND discusses land use, agricultural resources, energy, and wildfire, and the effect of the proposed project on these resources.

#### **Discussion**

##### Land Use

The proposed project would include pipe replacement and other associated improvements at five existing stormwater sump stations within the City of Sacramento. The proposed activities would not conflict with the existing land uses designations for the areas in which the existing sump stations and stormwater outfalls are located. Furthermore, the proposed project would not physically divide any established communities that are located within the vicinity of the existing stormwater outfalls.

The proposed project would not result in impacts related to land use.

##### Population and Housing

The proposed project would not include construction of housing or other uses with the potential to create a large number of jobs or result in an influx of new residents to the project area. The proposed project would not include the removal of any existing housing. As such, the proposed project would not displace a substantial number of existing housing or people and would not necessitate the construction of replacement housing elsewhere. Furthermore, the project would not increase the capacity of the City's existing stormwater discharge system relative to existing conditions and, thus, would not eliminate any obstacles to growth.

##### Agricultural Resources

The Master EIR discussed the potential impact of development under the 2035 General Plan on agricultural resources (see Master EIR, Chapter 6.2). In addition to evaluating the effect of the General Plan on sites within the City, the Master EIR noted that to the extent the 2035 General Plan accommodates future growth within the City limits, the conversion of farmland outside the City limits is minimized. (Master EIR, page 6.2-13) The Master EIR concluded that the impact of the 2035 General Plan on agricultural resources within the City was less than significant.

The proposed project entails the complete replacement of the pump discharge pipes for three drainage sump station facilities and installation of stairs for two drainage sump station facilities. All five of the sump station facilities are located within developed areas of the City of Sacramento

that are not currently used for agricultural production. In addition, the project would not alter the land uses in the vicinity of the existing sump station facilities.

The proposed project would not result in impacts to agricultural resources.

### Energy

The Master EIR discussed energy conservation and relevant General Plan policies in Section 6.3 (page 6-3). The discussion concluded that with implementation of the General Plan policies and energy regulation (e.g., Title 24), development allowed in the 2035 General Plan would not result in the inefficient, wasteful, or unnecessary consumption of energy. The Master EIR concluded that implementation of State regulations, coordination with energy providers, and implementation of 2035 General Plan policies would reduce the potential impacts from construction of new energy production or transmission facilities to a less-than-significant level.

The proposed project would not increase energy use associated with the City's sump station facilities relative to existing conditions. While the proposed project would involve a temporary increase in energy demand associated with the proposed trenching and pipe replacement activities, such energy demand would be relatively minor and would cease upon completion of the improvements.

Consistent with the Master EIR, as well as Section VI of CEQA Guidelines Appendix G, the proposed project would not result in impacts related to energy. Specifically, the project would not result in a potentially significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation and would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

### Wildfire

The Master EIR does not identify any significant impacts related to wildfire risk. Per the CAL FIRE Fire and Resources Assessment Program (FRAP), the City of Sacramento is located within a Local Responsibility Area (LRA). The City is not located within or adjacent to a State Responsibility Area (SRA) or a designated Very High Fire Hazard Severity Zone (VHFHSZ). Furthermore, the project sites are located within developed areas where a substantial wildland-urban interface does not exist. Thus, the risk of wildfire at the project sites is minimal. Based on the above, the proposed pipe replacements and other associated improvements would not create a substantial fire risk for existing development in the vicinity of the existing sump stations.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
1. <u>AESTHETICS</u> Would the proposal:			X
A) Create a source of glare that would cause a public hazard or annoyance?			X
B) Create a new source of light that would be cast onto oncoming traffic or residential uses?			X
C) Substantially degrade the existing visual character of the site or its surroundings?			X

### Environmental Setting

The existing sump station facilities are located alongside flood control levees within the City of Sacramento. In general, the visual character of the areas surrounding the sump station facilities is defined by ruderal grasses and riparian habitat associated with the waterways that receive stormwater discharge from the facilities, as well as levees, bikeways, roadways, and residential development. The existing sump station facilities do not generate light or glare; however, most of the facilities are located within the vicinity of existing light sources, including light from vehicle headlights, exterior lighting on buildings, and streetlights. The sump station facilities are not visible from any State Scenic Highways.<sup>1</sup>

### Standards of Significance

The significance criteria used to evaluate the project impacts to aesthetics are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, thresholds of significance adopted by the City in applicable general plans and previous environmental documents, and professional judgment. For purposes of this IS/MND, impacts to aesthetics may be considered significant if construction and/or implementation of the proposed project would result in the following impacts that remain significant after implementation of General Plan policies:

- Create a new source of substantial light or glare that is substantially greater than typical urban sources and could cause sustained annoyance or hazard for nearby sensitive receptors; or
- Substantially interfere with an important scenic resource or substantially degrade the view of an existing scenic resource.

### Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies

The Master EIR described the existing visual conditions in the City of Sacramento, and the potential changes to those conditions that could result from development consistent with the 2035 General Plan. See Master EIR, Chapter 4.13, Visual Resources.

<sup>1</sup> California Department of Transportation. *California State Scenic Highway System Map*. Available at: <https://www.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983>. Accessed August 2020.

The Master EIR identified potential impacts for light and glare (Impact 4.13-1) and concluded that impacts would be less than significant with implementation of applicable General Plan policies.

## **Answers to Checklist Questions**

### Questions A and B

According to the Master EIR, the City of Sacramento is mostly built out, and a large amount of widespread, ambient light from urban uses already exists. New development permitted under the 2035 General Plan would add sources of light that are similar to the existing urban light sources from any of the following: exterior building lighting, new street lighting, parking lot lights, and headlights of vehicular traffic. Sensitive land uses would generally be residential uses, especially single-family residential uses.

The proposed project would not result in the introduction of any new permanent sources of light or glare to the existing sump station facilities. While temporary lighting may be required during construction of the proposed facility improvements, such light sources would be typical of lighting used for other maintenance projects within the City, and any lighting would be directed at the proposed work areas, away from existing residences and other sensitive receptors. Therefore, the proposed project would have **no additional significant effects** regarding sources of light and glare.

### Question C

The City of Sacramento is primarily built out; however, new development associated with the 2035 General Plan could result in changes to important scenic resources as seen from visually sensitive locations. Important existing scenic resources include major natural open space features such as the American River and Sacramento River, including associated parkways. Another important scenic resource is the State Capitol (as defined by the Capitol View Protection Ordinance). Other potential important scenic resources include important historic structures listed on the Sacramento Register of Historic and Cultural Resources, California and/or National Registers.

Visually-sensitive public locations include viewpoints where a change to the visibility of an important scenic resource, or a visual change to the resource itself, would affect the general public. Visually-sensitive public locations include public plazas, trails, parks, parkways, or designated, publicly available and important scenic corridors (e.g., Capitol View Protection Corridor).

Policy ER 7.1.1 would guide the City to avoid or reduce substantial adverse effects of new development on views from public places to the Sacramento and American rivers and adjacent greenways and landmarks. With adherence to this policy, buildout of the 2035 General Plan would not substantially alter views of important scenic resources from visually sensitive areas. According to the Master EIR, with buildout of the 2035 General Plan, impacts related to interference with important existing scenic resources or degrading views of important existing scenic resources, as seen from a visually sensitive, public location would be less than significant.

The existing sump station facilities are located within the vicinity of public trail facilities, the American River, and other local waterways. The proposed project would include replacement of existing piping at the majority of the existing facilities. In addition, the project would include installation of temporary cofferdams at Sump 089 and Sump 151, installation of positive closure vaults at Sump 089, Sump 151, and Sump 155, installation of a retaining wall at Sump 155, replacement of asphalt paving in the vicinity of Sump 151 and Sump 155, and other minor

improvements, such as stair installation at Sumps 058 and 102. The proposed improvements would not substantially degrade the visual character or quality of the pump station facilities or their immediate surroundings. Upon completion of the proposed improvements, areas disturbed to replace existing piping would be revegetated, and the temporary cofferdams at Sump 89 and Sump 151 would be removed.

Based on the above, the proposed project would have ***no additional significant effects*** that were not evaluated in the Master EIR.

### **Mitigation Measures**

None required.

### **Findings**

The proposed project would have no additional project-specific environmental effects relating to Aesthetics. Implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>2. AIR QUALITY</b> <i>Would the proposal:</i>			X
A) Result in construction emissions of NO <sub>x</sub> above 85 pounds per day?			X
B) Result in operational emissions of NO <sub>x</sub> or ROG above 65 pounds per day?			X
C) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X
D) Result in any increase in PM <sub>10</sub> concentrations, unless all feasible Best Available Control Technology (BACT) and Best Management Practices (BMPs) have been applied, then increases above 80 pounds per day or 14.6 tons per year?		X	
E) Result in CO concentrations that exceed the 1-hour state ambient air quality standard (i.e., 20.0 ppm) or the 8-hour state ambient standard (i.e., 9.0 ppm)?			X
F) Result in exposure of sensitive receptors to substantial pollutant concentrations?			X
G) Result in TAC exposures create a risk of 10 in 1 million for stationary sources, or substantially increase the risk of exposure to TACs from mobile sources?			X
H) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X

## Environmental Setting

The environmental setting for the proposed project, including the existing climate and meteorological conditions, existing air quality conditions, and greenhouse gas (GHG) emissions, is discussed below.

### Climate and Meteorology

The City of Sacramento is located within the Sacramento Valley Air Basin (SVAB), which is a valley bounded by the North Coast Mountain Ranges to the west and the Northern Sierra Nevada Mountains to the east. The terrain in the valley is flat and approximately 25 feet above sea level.

Hot, dry summers and mild, rainy winters characterize the Mediterranean climate of the Sacramento Valley. Throughout the year, daily temperatures may range by 20 degrees Fahrenheit with summer highs often exceeding 100 degrees and winter lows occasionally below freezing. Average annual rainfall is approximately 20 inches and snowfall is very rare.

Summertime temperatures are normally moderated by the presence of the “Delta breeze” that arrives through the Carquinez Strait in the evening hours.

The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants in the valley. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions that trap cooler air and pollutants near the ground.

The warmer months in the SVAB (May through October) are characterized by stagnant morning air or light winds, and the Delta breeze that arrives in the evening out of the southwest. Usually, the evening breeze transports a portion of airborne pollutants to the north and out of the Sacramento Valley. During about half of the day from July to September, however, a phenomenon called the “Schultz Eddy” prevents this from occurring. Instead of allowing the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern to circle back south. This phenomenon exacerbates the pollution levels in the area and increases the likelihood of violating Federal or State standards. The Schultz Eddy normally dissipates around noon when the Delta breeze begins.

#### Air Quality Conditions

The SVAB is under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). Federal and State air quality standards have been established for six common air pollutants, known as criteria pollutants, because the criteria air pollutants could be detrimental to human health and the environment. The criteria pollutants include particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. At the federal level, Sacramento County is designated as severe nonattainment for the 8-hour ozone standard, nonattainment for the 24-hour PM<sub>2.5</sub> standard, and attainment or unclassified for all other criteria pollutants. At the State level, the area is designated as a serious nonattainment area for the 1-hour ozone standard, nonattainment for the 8-hour ozone standard, nonattainment for the particulate matter 10 microns in diameter (PM<sub>10</sub>) and particulate matter 2.5 microns in diameter (PM<sub>2.5</sub>) standards, and attainment or unclassified for all other State standards.

Nearly all development projects in the Sacramento region have the potential to generate air pollutants that may increase the difficulty of attaining federal and State AAQS. Therefore, for most projects, evaluation of air quality impacts is required to comply with CEQA. In order to help public agencies in evaluating air quality impacts, the SMAQMD has developed the *Guide to Air Quality Assessment in Sacramento County*. The SMAQMD’s guide includes recommended thresholds of significance, including mass emission thresholds for construction-related and operational ozone precursors, as the area is under nonattainment for the federal and State ozone AAQS. The SMAQMD’s guide also includes screening criteria for localized carbon monoxide (CO) emissions and thresholds for new stationary sources of toxic air contaminants (TACs).

In addition to criteria air pollutants, TACs are also a category of environmental concern. TACs are present in many types of emissions with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different TACs. In terms of health risks, the most volatile contaminants are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene and acetaldehyde. Gasoline vapors contain several TACs, including benzene, toluene, and xylenes. Public exposure to TACs

can result from emissions from normal operations as well as accidental releases. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure, which typically are associated with long-term exposure and the associated risk of contracting cancer. Health effects of exposure to TACs other than cancer include birth defects, neurological damage, and death.

Naturally occurring asbestos (NOA) was identified as a TAC in 1986 by CARB. Earth disturbance activity could result in the release of NOA to the air. NOA is located in many parts of California and is commonly associated with ultramafic rocks. According to mapping prepared by the California Geological Survey, the only area within Sacramento County that is likely to contain NOA is eastern Sacramento County. The project site is not located in an area identified as likely to contain NOA.

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. Sumps 155, 058, and 102 are located adjacent or within close proximity to existing single-family uses.

#### Greenhouse Gas (GHG) Emissions

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

In September 2006, Assembly Bill (AB) 32 was enacted, which requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. AB 32 delegated the authority for implementation to the CARB and directs the CARB to enforce the statewide cap. In accordance with AB 32, CARB prepared the *Climate Change Scoping Plan* (Scoping Plan) for California, which was approved in 2008 and subsequently revised in 2014 and 2017. The 2017 revision to the Scoping Plan updated the plan in compliance with Senate Bill (SB) 32. SB 32 codified emissions reduction targets for the year 2030, which had previously been established by Executive Order B-30-15.

The City adopted the City of Sacramento Climate Action Plan (CAP) on February 14, 2012 to comply with AB 32. The CAP identified how the City and the broader community could reduce Sacramento's GHG emissions and included reduction targets, strategies, and specific actions. In 2015, the City of Sacramento adopted the 2035 General Plan Update. The update incorporated measures and actions from the CAP into Appendix B, General Plan CAP Policies and Programs, of the General Plan Update. Appendix B includes all citywide policies and programs that are supportive of reducing GHG emissions.

## **Standards of Significance**

For purposes of this IS/MND, air quality impacts may be considered significant if construction and/or implementation of the proposed project would result in the following impacts that remain significant after implementation of 2035 General Plan policies:

- Construction emissions of NO<sub>x</sub> above 85 pounds per day;
- Operational emissions of NO<sub>x</sub> or ROG above 65 pounds per day;
- Violation of any air quality standard or contribute substantially to an existing or projected air quality violation;
- Any increase in PM<sub>10</sub> concentrations, unless all feasible Best Available Control Technology (BACT) and Best Management Practices (BMPs) have been applied, then increases above 80 pounds per day or 14.6 tons per year;
- CO concentrations that exceed the 1-hour State ambient air quality standard (i.e., 20.0 ppm) or the 8-hour State ambient standard (i.e., 9.0 ppm); or
- Exposure of sensitive receptors to substantial pollutant concentrations.

Ambient air quality standards have not been established for TACs. TAC exposure is deemed to be significant if:

- TAC exposures create a risk of 10 in 1 million for stationary sources, or substantially increase the risk of exposure to TACs from mobile sources.

A project is considered to have a significant effect relating to greenhouse gas emissions if the project fails to satisfy the requirements of the City's CAP.

## **Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies**

The Master EIR addressed the potential effects of the 2035 General Plan on ambient air quality and the potential for exposure of people, especially sensitive receptors such as children or the elderly, to unhealthful pollutant concentrations. See Master EIR, Chapter 4.2.

Policies in the 2035 General Plan Environmental Resources Element were identified as mitigating potential effects of development that could occur under the 2035 General Plan. Accordingly, Policy ER 6.1.1 calls for the City to work with the CARB and the SMAQMD to meet State and federal air quality standards; Policy ER 6.1.2 requires the City to review proposed development projects to ensure that the projects incorporate feasible measures that reduce construction and operational emissions; Policy ER 6.1.4 and ER 6.1.11 calls for coordination of City efforts with SMAQMD; and Policy ER 6.1.15 requires the City to give preference to contractors using reduced-emission equipment.

The Master EIR identified exposure to sources of TACs as a potential effect. Policies in the 2035 General Plan would reduce the effect to a less-than-significant level. The policies include ER 6.1.4, requiring coordination with SMAQMD in evaluating exposure of sensitive receptors to TACs, and impose appropriate conditions on projects to protect public health and safety, as well as Policy LU 2.7.5 requiring extensive landscaping and trees along freeways and design elements that provide proper filtering, ventilation, and exhaust of vehicle air emissions from buildings.

The Master EIR found that GHG emissions that would be generated by development consistent with the 2035 General Plan would contribute to climate change on a cumulative basis. Policies of

the General Plan identified in the Master EIR that would reduce construction-related GHG emissions include: ER 6.1.2, ER 6.1.11, and ER 6.1.15. The 2035 General Plan incorporates the GHG reduction strategy of the 2012 CAP, which demonstrates compliance mechanisms for achieving the City's adopted GHG reduction target of 15 percent below 2005 emissions by 2020. Policy ER 6.1.9 commits the City to assess and monitor performance of GHG emission reduction efforts beyond 2020, and progress toward meeting long-term GHG emissions reduction goals. Policy ER 6.1.8 also commits the City to evaluate the feasibility and effectiveness of new GHG emissions reduction measures in view of the City's longer-term GHG emissions reductions goal. The discussion of GHG emissions and climate change in the 2035 General Plan Master EIR are incorporated by reference in this IS/MND (CEQA Guidelines Section 15150).

The Master EIR identified numerous policies included in the 2035 General Plan that addressed GHG emissions and climate change. See Draft Master EIR, Chapter 4.14, and pages 4.14-1 et seq.

## Answers to Checklist Questions

### Question A

In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants that the area is designated nonattainment, the SMAQMD has established recommended thresholds of significance, including mass emission thresholds for construction-related and operational ozone precursors (i.e., reactive organic gases [ROG] and oxides of nitrogen [NO<sub>x</sub>]), as the area is under nonattainment for ozone. The SMAQMD's recommended thresholds of significance for ROG and NO<sub>x</sub> are in units of pounds per day (lbs/day) and are presented in Table 3.

Table 3 SMAQMD Thresholds of Significance for Ozone Precursors		
Pollutant	Construction Thresholds	Operational Thresholds
NO <sub>x</sub>	85 lbs/day	65 lbs/day
ROG	-	65 lbs/day
Source: Sacramento Metropolitan Air Quality Management District. SMAQMD Thresholds of Significance Table. Available at: <a href="http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable4-2020.pdf">http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable4-2020.pdf</a> . Accessed September 2020.		

Because construction equipment emits relatively low levels of ROG, and ROG emissions from other construction processes (e.g., asphalt paving, architectural coatings) are typically regulated by SMAQMD, SMAQMD has not adopted a construction emissions threshold for ROG. SMAQMD has, however, adopted a construction emissions threshold for NO<sub>x</sub>, as shown in Table 3, above.

In order to determine whether the proposed project would result in ozone emissions in excess of the applicable thresholds of significance presented above, the proposed project's construction-related NO<sub>x</sub> emissions have been estimated using SMAQMD's Road Construction Emissions Model (RoadMod), Version 9.0.0.

With regard to the analysis of construction-related emissions, implementation of the proposed project would involve construction activity within each of the identified sump locations. Although the exact timing of construction on each of the sump locations is not currently known, all of the proposed construction-activity is anticipated to occur over approximately four months. During the four-month construction period, construction at a maximum of two sites could occur simultaneously based on the involvement of up to two contractors and associated construction

crews. Although the ultimate schedule for project-construction is unknown, to provide a conservative approach to the estimation of project-related emissions, construction of the two sump sites with the largest anticipated area of disturbance was assumed to occur simultaneously. Assuming that construction of the two sump locations with the largest anticipated area of disturbance occurs simultaneously provides for the highest potential daily emissions. Should project construction proceed without construction work overlapping at two different sump stations, or if work at two smaller sump stations overlap, the maximum daily emissions would be less than the levels presented within this analysis.

SMAQMD's RoadMod requires the user to input information related to the area of disturbance, the length of time a project would occur, and, for linear non-roadway projects, a list of equipment that would be used during project construction. The sump location with the largest anticipated area of disturbance (according to the Biological Resources Evaluation and Botanical Inventory Report prepared for the proposed project by Sycamore Environmental Consultants, Inc.) would be Sump 089, with a temporary disturbance area of approximately 0.65 acres, and Sump 155 with a temporary disturbance area of approximately 0.21 acres. Based on information provided by the project engineer, work at both sumps was anticipated to include the use of the following pieces of equipment: excavator, crane, grader, compactor, tractor/loader/backhoe, paving equipment, and a concrete saw.

The results of the proposed project's emissions estimations were compared to the thresholds of significance above in order to determine the associated level of impact. All modeling results are included in Appendix A to this IS/MND.

Use of the aforementioned equipment, as well as vehicle use by construction employees, would generate emissions for the entire construction period. According to the CalEEMod results, the proposed project is estimated to result in maximum daily construction emissions of NO<sub>x</sub> as shown in Table 4.

<b>Table 4</b>		
<b>Maximum Unmitigated Project Construction NO<sub>x</sub> Emissions</b>		
<b>Sump Location</b>	<b>Project Emissions (lbs/day)</b>	<b>SMAQMD Threshold of Significance (lbs/day)</b>
089	18.11	85
155	18.11	85
<b>Total</b>	<b>36.22</b>	<b>85</b>
<i>Source: RoadMod, September 2020 (see Appendix A).</i>		

As shown in the table, the proposed project's maximum unmitigated construction-related NO<sub>x</sub> emissions would be below the applicable SMAQMD threshold of significance of 85 lbs/day either from separate completion of work at Sump 089 and 155 or simultaneous completion of such work. It should be noted that all projects under the jurisdiction of SMAQMD are required to comply with all applicable SMAQMD rules and regulations (a complete list of current rules is available at [www.airquality.org/rules](http://www.airquality.org/rules)). Accordingly, the proposed project is required to comply with all applicable SMAQMD rules and regulations for construction, including, but not limited to, Rule 403 (Fugitive Dust), Rule 404 (Particulate Matter), Rule 442 (Architectural Coatings), and Rule 453 (Cutback and Emulsified Asphalt Paving Materials). Furthermore, all projects are required to implement the SMAQMD's Basic Construction Emission Control Practices (BCECP). Compliance with SMAQMD rules and regulations and BCECP would help to ensure that construction emissions are minimized further from the levels presented in Table 4. Finally, because sump locations 089 and 155 represent the sumps with the largest potential area of disturbance, the total emissions presented in Table 4 provide a worst-case estimation of maximum daily emissions. In

practice, if work is completed on either of the foregoing sites simultaneously with a smaller sump site, emissions would likely be less than the maximum daily level presented above.

Given that NO<sub>x</sub> emissions associated with construction of the proposed project would be below the applicable SMAQMD threshold of significance, the project would have **no additional significant effects** that were not evaluated in the Master EIR.

#### Question B

The proposed project would not result in any changes in operational activity for the pumps; thus, the project would not have the potential to result in changes to existing operational emissions from any of the identified sump locations. Considering the lack of changes to operational activities of the pumps, the proposed project would have **no additional significant effects** that were not evaluated in the Master EIR.

#### Question C

Adopted SMAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with applicable air quality plans. As future attainment of AAQS is a function of successful implementation of SMAQMD's planning efforts, according to the SMAQMD Guide, by exceeding the SMAQMD's project-level thresholds for construction or operational emissions, a project could contribute to the region's nonattainment status for ozone and PM emissions and could be considered to conflict with or obstruct implementation of the SMAQMD's air quality planning efforts.

As discussed above and below, construction of the project would not result in emissions in excess of the SMAQMD's thresholds, and the project would not result in any changes to the level of long-term emissions associated with existing sump operations. As such, implementation of the proposed project would not contribute to the region's nonattainment status for ozone or PM emissions and would not conflict with or obstruct implementation of the SMAQMD's air quality planning efforts. Accordingly, the proposed project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and the project would have **no additional significant effects** that were not evaluated in the Master EIR.

#### Question D

As the region is designated nonattainment for PM<sub>10</sub> and PM<sub>2.5</sub>, the SMAQMD has adopted mass emissions thresholds of significance for PM<sub>10</sub> and PM<sub>2.5</sub>, which are presented in Table 5 below.

<b>Table 5</b>		
<b>SMAQMD Thresholds of Significance for PM<sub>10</sub> and PM<sub>2.5</sub></b>		
<b>Pollutant</b>	<b>Construction/Operational Thresholds (lbs/day)</b>	<b>Construction/Operational Thresholds (tons/yr)</b>
PM <sub>10</sub>	80	14.6
PM <sub>2.5</sub>	82	15

*Source: SMAQMD, April 2020.*

As noted for the analysis of operational emissions of ozone precursors presented in question B above, the proposed project would not result in any changes to existing emissions related to operation of the sumps. Consequently, the proposed project would not have the potential to result

in impacts related to operational emissions of PM<sub>10</sub> or PM<sub>2.5</sub>. The analysis presented below is focused on construction-related emissions.

In order to determine whether the proposed project, would result in PM emissions in excess of the applicable thresholds of significance presented above, the proposed project's construction PM<sub>10</sub> and PM<sub>2.5</sub> emissions have been estimated using RoadMod with the same assumptions discussed in question A above. The results of the RoadMod emissions estimation are presented in Table 6. As presented in the table, the estimated emissions of PM<sub>10</sub> and PM<sub>2.5</sub> would be below the applicable SMAQMD thresholds of significance.

<b>Table 6</b>				
<b>Maximum Unmitigated Project Emissions of PM<sub>10</sub> and PM<sub>2.5</sub></b>				
<b>Sump Location</b>	<b>Project Construction Emissions (lbs/day)</b>	<b>Construction Thresholds (lbs/day)</b>	<b>Project Construction Emissions (tons/yr)</b>	<b>Construction Thresholds (tons/yr)</b>
<b>PM<sub>10</sub></b>				
089	2.98	80	0.01	14.6
155	2.98	80	0.01	14.6
<b>Total</b>	<b>5.96</b>	<b>80</b>	<b>0.02</b>	<b>14.6</b>
<b>PM<sub>2.5</sub></b>				
089	1.19	82	0.01	15
155	1.19	82	0.01	15
<b>Total</b>	<b>2.38</b>	<b>82</b>	<b>0.02</b>	<b>15</b>

*Source: RoadMod, September 2020 (see Appendix A).*

Therefore, the proposed project is not expected to result in emissions of PM<sub>10</sub> or PM<sub>2.5</sub> in excess of SMAQMD's thresholds of significance. Nonetheless, the project would be required to comply with SMAQMD's Best Available Control Technology (BACT) determinations. The BACT determinations reflect the minimum emission rate/control technology that is required by SMAQMD for various source categories within the district.<sup>2</sup> In addition, as discussed previously, the project would be required to comply with SMAQMD's BCECP, which would help to ensure that construction emissions are minimized further from the levels presented in Table 6. Compliance with SMAQMD's BACT determinations and applicable BMPs would help ensure that the project would not have **additional significant environmental effects** beyond what was evaluated in the Master EIR.

#### Questions E through G

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The major pollutant concentrations of concern are localized CO emissions and TAC emissions, which are addressed in further detail below.

<sup>2</sup> Sacramento Metropolitan Air Quality Management District. *Best Available Control Technology*. Available at: [http://www.airquality.org/businesses/permits-registration-programs/best-available-control-technology-\(bact\)](http://www.airquality.org/businesses/permits-registration-programs/best-available-control-technology-(bact)). Accessed October 2020.

### *Localized CO Emissions*

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Per the SMAQMD Guide, emissions of CO are generally of less concern than other criteria pollutants, as operational activities are not likely to generate substantial quantities of CO, and the SVAB has been in attainment for CO for multiple years.<sup>3</sup> The proposed project would not involve operational changes that could result in long-term generation of CO. The use of construction equipment at each site would result in limited generation of CO; however, the total amount of CO emitted by construction equipment would be minimal and would not have the potential to result in health risks to any nearby receptors. Consequently, the proposed project is not anticipated to result in significant impacts to air quality related to localized CO emissions.

### *TAC Emissions*

The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook)<sup>4</sup> provides recommendations for siting new sensitive land uses near sources typically associated with significant levels of TAC emissions, including, but not limited to, freeways and high traffic roads, distribution centers, rail yards, chrome platers, dry cleaners, and gasoline dispensing facilities. The CARB has identified DPM from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Gasoline includes multiple TACs, which are released through various processes during the operation of gasoline dispensing facilities (GDFs). Such TACs include benzene, ethyl benzene, toluene, and xylene. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk.

During implementation of the proposed pipe replacement and associated improvements, the operation of heavy-duty diesel-powered equipment within the project sites would result in the emission of DPM. However, construction activities would be limited to an approximately four-month period and would require only limited ground-disturbing activities. Given the relatively limited scope of work at each of the sump station facilities, DPM emissions associated with the proposed project would be relatively minimal. The exposure period typically analyzed in health risk assessments is 30 years or greater, which is substantially longer than the four-month period associated with implementation of the proposed project. In addition, improvements at each of the project sites would be regulated by federal, State, and local regulations, including SMAQMD rules and regulations, and occurring intermittently throughout the course of a day. Considering the short-term nature of construction activities, the regulated and intermittent nature of the operation of construction equipment, and the highly dispersive nature of DPM, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low. For the aforementioned reasons, project construction would not be expected to expose sensitive receptors to substantial pollutant concentrations.

### *Conclusion*

Based on the above discussion, the proposed project would not expose any sensitive receptors to substantial concentrations of localized CO or TACs from construction or operation. Therefore,

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<sup>3</sup> Sacramento Metropolitan Air Quality Management District. *Guide to Air Quality Assessment, Chapter 4: Operational Criteria Air Pollutant and Precursor Emissions*. June 2020.

<sup>4</sup> California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.

the proposed project would have ***no additional significant effects*** related to the exposure of sensitive receptors to substantial pollutant concentrations that were not evaluated in the Master EIR.

#### Question H

GHG emissions from completion of the construction activity at sump 089 and 155 were calculated and determined to equal 12.83 tons of carbon dioxide equivalent (TCO<sub>2</sub>e). Sump 089 and 155 represent the two sites with the largest anticipated area of disturbance; thus, emissions from all other sites would likely be less than the estimated level of emissions from the two largest sumps. Nevertheless, if the conservative assumption is made that work on all sites will result in roughly equal levels of GHG emissions, the total level of emissions for project implementation would be approximately 102.64 TCO<sub>2</sub>e. For perspective, SMAQMD has concluded that construction projects resulting in GHG emissions of up to 1,100 metric tons of CO<sub>2</sub>e/yr would result in a less-than-significant impact related to GHG emissions. While SMAQMD's emissions thresholds provide a useful comparison to demonstrate the minimal nature of project-related emissions, potential impacts of the proposed project must be compared to the standards within the City's CAP and CAP for Internal Operations.

The goals and strategies that serve as CAP measures have been included in the City's 2035 General Plan Update. Most of the CAP measures are related to development projects, planning, and City operations such as municipal vehicle fleets, as these activities result in the majority of GHG emissions in the City. Due to the small proportion of citywide emissions generated by stormwater infrastructure projects, such as the proposed project, few measures within the City's CAP relate to the proposed project. Nevertheless, several measures that are indirectly related to the project are included in the City's CAP and discussed below.

In compliance with Policy LU 9.1.3, the proposed sump improvements have been designed to avoid the creation of any barriers that would disrupt existing connectivity along creek and river corridors. Thus, the project would not inhibit the continued connection of the City's open space system as called for in LU 9.1.3. Policy LU 2.6.5 encourages the reuse of existing structures within the City. Although the measure is primarily intended to relate to the reuse and renovation of buildings, the proposed project would comply with this measure through the reuse of existing sump infrastructure to the maximum extent practical. Where existing infrastructure cannot be reused the project would include replacement in-situ of such infrastructure, which would generally avoid creating new areas of disturbance. Thus, the project would be considered consistent with Policy LU 2.6.5. To comply with Policy ER 1.1.8, Clean Watershed, Mitigation Measure 3-1(b), discussed in the Biological Resources Section of this Initial Study, requires project construction to adhere to all relevant regulations related to the protection of water quality and alterations of streambeds. Implementation of Mitigation Measure 3-1(b) would ensure the project's compliance with Policy ER 1.1.8. Finally, Policy EC 2.1.28 directs the City to continue to manage climate change-related flood risks within the City. The proposed project is intended to provide continued stormwater control within the City, which would help to fulfill the intent of Policy EC 2.1.28.

The Master EIR concluded that buildout of the City's General Plan would not result in a conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. The proposed project would result in minor GHG emissions during project construction, but would be below SMAQMD's thresholds of significance for construction related emissions. In addition, the proposed project would comply with all relevant General Plan policies.

Considering the above, the proposed project would not conflict with the City's General Plan, policies, or regulations adopted for the purpose of reducing the emissions of GHG, and the proposed project

would have ***no additional significant effects*** related to the GHG emissions that were not evaluated in the Master EIR.

#### **MITIGATION MEASURES**

Implementation of the following mitigation measure would reduce potential impacts related to air quality to a *less-than-significant* level.

- 2-1            *The proposed project shall comply with all applicable SMAQMD Best Available Control Technology (BACT) determinations and Basic Construction Emission Control Practices (BCECP) in effect at the time of improvement plan approval.*

#### **FINDINGS**

The proposed project would have no additional project-specific environmental effects relating to air quality and GHG emissions. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

**SUMP STATION FACILITIES IMPROVEMENT PROJECT**  
INITIAL STUDY

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>3. BIOLOGICAL RESOURCES</b> Would the proposal:			
A) Create a potential health hazard, or use, production or disposal of materials that would pose a hazard to plant or animal populations in the area affected?			X
B) Result in substantial degradation of the quality of the environment, reduction of the habitat, reduction of population below self-sustaining levels of threatened or endangered species of plant or animal species?		X	
C) Affect other species of special concern to agencies or natural resource organizations (such as regulatory waters and wetlands)?		X	

## Environmental Setting

Although the majority of the City is developed with residential, commercial, and other urban development, valuable plant and wildlife habitat still exists. The natural plant and wildlife habitats are located primarily outside the City boundaries in the northern, southern and eastern portions of the City, but also occur along river and stream corridors and on a number of undeveloped parcels. Habitats that are present in the City include annual grasslands, riparian woodlands, oak woodlands, riverine, ponds, freshwater marshes, seasonal wetlands, and vernal pools.

The following site-specific environmental setting information is based on the Biological Resources Evaluation and Botanical Inventory Report (BRE) prepared for the proposed project by Sycamore Environmental Consultants, Inc. (Sycamore).<sup>5</sup> As part of the BRE, a general biological field survey, a botanical survey, and an aquatic resource delineation were prepared by Sycamore. In addition, the BRE included a literature and database review. Biological and botanical fieldwork was conducted on July 22 and 23, 2020 by Sycamore Environmental biologists. The Lathrop Staging Area was surveyed on August 26, 2020 and the La Riviera Staging Area was surveyed on August 28, 2020. The aquatic resource delineation was prepared in accordance with standard USACE Wetland Delineation Manual methods – the results of the delineation are incorporated into the BRE.

The BRE covered the entirety of the approximately nine-acre BSA, defined herein to include the areas anticipated to be disturbed by the proposed project and a portion of the receiving waterbody at the sump outfalls. The BSA includes the La Riviera and Lathrop staging areas.

The elevation in the BSA ranges from seven to 52 feet above sea level. Land use surrounding the project sites on the land side of the levees generally consists of residential neighborhoods and commercial buildings. Sump 089 is generally more rural, and is bordered by agricultural fields. All sump sites are bordered by a receiving waterbody at the sump outfall location. Sump 058 is located along Steelhead Creek, Sump 089 is located along Morrison Creek, and Sump 102 is

<sup>5</sup> Sycamore Environmental Consultants, Inc. *Biological Resources Evaluation and Botanical Inventory Report*. September 2020.

located along the NEMDC. Sump 151 is located along a channel on the American River floodplain and Sump 155 is located along the American River.

### **Standards of Significance**

For purposes of this environmental document, an impact would be significant if any of the following conditions or potential thereof, would result with implementation of the proposed project:

- Creation of a potential health hazard, or use, production or disposal of materials that would pose a hazard to plant or animal populations in the area affected;
- Substantial degradation of the quality of the environment, reduction of the habitat, reduction of population below self-sustaining levels of threatened or endangered species of plant or animal; or
- Affect other species of special concern to agencies or natural resource organizations (such as regulatory waters and wetlands).

### **Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies**

Chapter 4.3 of the Master EIR evaluated the effects of the 2035 General Plan on biological resources within the City. The Master EIR identified potential impacts in terms of degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of special-status birds, through the loss of both nesting and foraging habitat.

Policies in the 2035 General Plan were identified as mitigating the effects of development that could occur under the provisions of the 2035 General Plan. Policy ER 2.1.5 calls for the City to preserve the ecological integrity of creek corridors and other riparian resources; Policy ER 2.1.10 requires the City to consider the potential impact on sensitive plants for each project and to require pre-construction surveys when appropriate; and Policy ER 2.1.11 requires the City to coordinate its actions with those of CDFW, U.S. Fish and Wildlife Service (USFWS), and other agencies in the protection of resources.

The Master EIR concluded that policies in the General Plan, combined with compliance with the California Endangered Species Act, Natomas Basin HCP (when applicable) and CEQA would minimize the impacts on special-status species to a less-than-significant level (see Impact 4.3-1), and that the General Plan policies, along with similar compliance with local, state and federal regulations would reduce impacts to a less-than-significant level for habitat for special-status invertebrates, birds, amphibians and reptiles, mammals and fish (Impacts 4.3-3-6).

Given the prevalence of rivers and streams in the incorporated area, impacts to riparian habitat is a common concern. Riparian habitats are known to exist throughout the City, especially along the Sacramento and American rivers and their tributaries. The Master EIR discussed impacts of development adjacent to riparian habitat that could disturb wildlife species that rely on these areas for shelter and food, and could also result in the degradation of these areas through the introduction of feral animals and contaminants that are typical of urban uses. The CDFW regulates potential impacts on lakes, streams, and associated riparian (streamside or lakeside) vegetation through the issuance of LSAAs (per Fish and Game Code Section 1602), and provides guidance to the City as a resource agency. While there are no federal regulations that specifically mandate the protection of riparian vegetation, federal regulations set forth in Section 404 of the Clean Water Act address areas that potentially contain riparian-type vegetation, such as wetlands.

The General Plan calls for the City to preserve the ecological integrity of creek corridors, canals and drainage ditches that support riparian resources (Policy ER 2.1.5) and wetlands (Policy ER 2.1.6), and requires habitat assessments and impact compensation for projects (Policy ER 2.1.10). The City has adopted a standard that requires coordination with state and federal agencies if a project has the potential to affect other species of special concern or habitats (including regulatory waters and wetlands) protected by agencies or natural resource organizations (Policy 2.1.11).

Implementation of 2035 General Plan Policy ER 2.1.5 would reduce the magnitude of potential impacts by requiring a 1:1 replacement of riparian habitat lost to development. While this would help mitigate impacts on riparian habitat, large open areas of riparian habitat used by wildlife could be lost and/or degraded directly and indirectly through development under the 2035 General Plan. Given the extent of urban development designated in the General Plan, the preservation and/or restoration of riparian habitat would likely occur outside of the City limits. The Master EIR concluded that the permanent loss of riparian habitat would be a less-than-significant impact (Impact 4.3-7).

## **Answers to Checklist Questions**

### Question A

The use, handling, and storage of hazardous materials is regulated by both the Federal Occupational Safety and Health Administration (Fed/OSHA) and the California Occupational Safety and Health Administration (Cal/OSHA). Cal/OSHA is responsible for developing and enforcing workplace safety regulations.

The proposed discharge pipe replacements and associated improvements would not involve the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. While limited amounts of hazardous materials (i.e., paints, adhesives, sealants) could potentially be used during implementation of the proposed improvements, such materials would be used in accordance with established protocols and would not be likely to result in hazards to plant and animal populations. Therefore, the proposed project would have ***no additional significant effects*** that were not evaluated in the Master EIR.

### Question B

As mandated by the SAFCA and the USACE, sump station outfalls that penetrate and cross major levees are inspected on a five-year cycle. The project entails the complete replacement of the pump discharge pipes for three drainage sump station facilities (Sumps 089, 151, and 155) and installation of stairs on the waterside slope for two drainage sump station facilities (Sumps 058 and 102). The following sections provide an analysis of potential impacts to sensitive natural communities, special-status species, and trees.

### *Sensitive Natural Communities*

The BRE included an evaluation of sensitive natural communities within the BSA, based on the definitions provided in the Manual of California Vegetation, 2<sup>nd</sup> Edition, and the most recent CDFW California Natural Communities List. Natural communities, including those that are sensitive, and their acreages, are summarized in Table 7 below. Habitat mapping for the biological study area of each sump is shown on Figure 4 of the BRE, which is included as Appendix B to this IS/MND.

**SUMP STATION FACILITIES IMPROVEMENT PROJECT**  
INITIAL STUDY

**Table 7**  
**Natural Communities within the BSA**

Natural Community	Vegetation Alliances/Associations (CDFW Code/Rarity Rank) <sup>1</sup>	Sensitive? <sup>2</sup>	Area in BSA (Acres) <sup>3</sup>	Temp. Impact (Acres) <sup>3</sup>	Permanent Impacts (Acres)
<b>Upland Communities</b>					
Nonnative Annual Grassland	<i>Avena</i> spp. – <i>Bromus</i> spp. Semi-Natural Alliance (42.027.00/No Rank)	No	2.19	0.76	<0.01 (187 cubic feet)
Developed/ Disturbed	None recognized	No	5.19	--	--
Riparian Forest	<i>Quercus lobata</i> Alliance (71.040.00/G3 S3) <i>Salix exigua</i> Alliance (61.209.00/G5 S4) <i>Salix gooddingii</i> – <i>Salix laevigata</i> Alliance (61.216.00/G4 S3) <i>Populus fremontii</i> / <i>Vitus californica</i> Association (61.130.13/G4 S3)	Yes (Riparian)	0.5	0.08	<0.01 (67 cubic feet)
Riparian Scrub Shrub	<i>Rubus armeniacus</i> Alliance (63.906.01/No Rank)	Yes (Riparian)	0.05	0.02	<0.01 (38 cubic feet)
Temporarily Disturbed	None recognized	No	0.41	--	--
Existing RSP	None recognized	No	0.14	0.02	--
<b>Aquatic Communities</b>					
Steelhead Creek	None recognized	Yes (Water)	0.11	0	--
American River Floodplain Channel	None recognized	Yes (Water)	0.06	0.06	--
American River	None recognized	Yes (Water)	0.15	0.05	--
Morrison Creek	None recognized	Yes (Water)	0.14	0.07	--
Sump 058 Outfall Channel	None recognized	Yes (Water)	0.01	0	--
<b>Total:</b>			<b>8.95</b>	<b>1.06</b>	<b>0.01</b>
<sup>1</sup> Vegetation alliances based on descriptions and classification methods in Sawyer et al. (2009) and A Manual of California Vegetation, Online Version (CNPS 2020b). Alliance codes and ranks are from CDFW (2019d). Rarity ranks of State (S) 1 – 3 are considered imperiled. Communities may lack recognized alliances if they lack vegetation, occupy a small area, or are dominated by nonnatives. <sup>2</sup> Sensitive natural communities include wetlands, waters, riparian vegetation, and vegetation alliances ranked S1 – S3. Waters listed here are potentially jurisdictional under the Clean Water Act, per the aquatic resources delineation report (Sycamore Environmental 2020). <sup>3</sup> Acreages were calculated using AutoCAD or ArcMap functions. Temporary impacts are summed across all sump sites. Impacts are not calculated for disturbed/developed areas.					
<b>Source: Sycamore Environmental Consultants, Inc., 2020.</b>					

Sensitive natural communities within the BSA that could be temporarily impacted by the proposed project are described further below. Other sensitive natural communities within the BSA that will not be impacted during project activities include Arcade Creek, Steelhead Creek, and Sump 058 Outfall Channel.

#### Riparian Forest

A total of 0.5-acre of riparian forest occurs in the BSA, at seven sumps. At Sump 058, the riparian forest community is dominated by Fremont cottonwood (*Populus fremontii*),

northern California black walnut (*Juglans hindsii*), and box elder (*Acer negundo*). At Sump 089, the community is dominated by northern California black walnut and box elder. At Sump 102, the community is dominated by Goodding's black willow (*Salix gooddingii*), northern California black walnut, and Oregon ash (*Fraxinus latifolia*). At Sump 103, the community is dominated by valley oak (*Quercus lobata*), Oregon ash, Goodding's black willow, and willowherb (*Epilobium ciliatum*). At Sump 151, the community is dominated by Hinds' willow (*Salix exigua*). At Sump 155, the community is dominated by white alder (*Alnus rhombifolia*), Fremont cottonwood, and box elder. During implementation of the proposed project, approximately 0.08-acre of riparian forest could be temporarily impacted.

#### Riparian Scrub Shrub

A total of 0.05-acre of riparian scrub shrub occurs in the BSA, exclusively at Sump 155. The community is dominated by Himalayan blackberry (*Rubus armeniacus*) that occurs adjacent to the riparian forest community along the American River. During implementation of the proposed project, approximately 0.02-acre of riparian scrub shrub could be temporarily impacted.

#### American River Floodplain Channel

A total of 0.06-acre of the American River floodplain channel occurs in the BSA. Only Sump 151 outfalls into the American River Floodplain Channel. The American River Floodplain Channel generally flows east along the levee toe approximately 0.4-mile, then southward another 0.4-mile where the Channel drains into the American River. The American River floodplain, including the Floodplain Channel, is classified by the Federal Emergency Management Agency (FEMA) as "AE", or areas subject to one percent annual chance flood. During such flood events, the American River floodplain (including the American River Floodplain Channel) would become inundated, and flows would then travel westward with the American River (including the floodplain channel) during those events. The American River Floodplain Channel is an intermittent channel and sensitive natural community.

At Sump 151, the banks of the American River floodplain channel consist of the concrete headwall, rock slope protection, emergent wetland vegetation and riparian forest. Vegetation on the banks consist of Himalayan blackberry, Hinds' willow, California wild grape, and cherry plum (*Prunus cerasifera*). The channel bed consists of a scour pool lined with boulders, cobble and mud. The portion of the channel bed at the sump outfall lacks vegetation. Vegetation on the channel bed adjacent to the BSA consists of smartweed (*Persicaria* sp.), barnyard grass (*Echinochloa* sp.), California button willow (*Cephalanthus occidentalis*), and yellow bristle grass (*Setaria pumila* ssp. *pumila*). At the time of field work conducted by Sycamore, the portion of the American River Floodplain Channel within the BSA was stagnant and contained up to three feet of water. During implementation of the proposed project, approximately 0.06-acre of the American River Floodplain Channel could be temporarily impacted.

Potential impacts to the American River Floodplain Channel are discussed further under Question 'C' below.

### American River

A total of 0.15-acre of the American River occurs in the BSA. Sump 155 outfalls into the American River. The American River is a large, fast-flowing river that enters the City of Sacramento from the east and flows west until it joins the Sacramento River. The Sacramento River flows south into the San Francisco Bay Delta and eventually into the Pacific Ocean. The American River is a perennial channel and sensitive natural community.

At Sump 155, the earthen banks of the American River are vegetated with grassland, riparian shrubs, and riparian forest. Vegetation on the banks consists of white alder, Fremont cottonwood, northern California black walnut, box elder, Himalayan blackberry, summer mustard (*Hirschfeldia incana*), Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), ripgut grass (*Bromus diandrus*), goose grass (*Galium aparine*), mugwort (*Artemisia douglasiana*), and wild oat (*Avena fatua*). The portion of the riverbed in the BSA consists of boulders and cobble rocks. Gravel substrate is not present on the riverbed in the BSA, and the riverbed lacks vegetation. The portion of the river adjacent to Sump 155 is relatively shallow and fast-flowing. At the time of field work conducted by Sycamore, the portion of the American River within the BSA contained up to two feet of water, with deeper portions of the river outside the BSA estimated to be up to five feet in depth. During implementation of the proposed project, approximately 0.02-acre of the American River channel could be temporarily impacted.

Potential impacts to the American River channel are discussed further under Question 'C' below.

### Morrison Creek

A total of 0.14-acre of Morrison Creek occurs in the BSA. Sump 089 outfalls into Morrison Creek. Morrison Creek flows south and west. Morrison Creek is generally pumped into the Sacramento River at another City sump approximately 1.7 miles southwest of Sump 089. In some years, large precipitation events may cause Morrison Creek to overflow into Beach Lake. Morrison Creek is a perennial channel and sensitive natural community.

At Sump 089, the banks of Morrison Creek consist of rock slope protection (RSP), dirt, and patches of riparian forest and emergent wetland vegetation. A complex of small mammal burrows occurs on the upper banks within the BSA. Vegetation on the upper banks consists of northern California black walnut, Oregon ash, radish (*Raphanus sativus*), black mustard (*Brassica nigra*), deervetch (*Acmispon americanus* var. *americanus*), box elder, and summer mustard. Vegetation at the edge of Morrison Creek consists of dallis grass (*Paspalum dilatatum*), cocklebur (*Xanthium strumarium*), pennyroyal (*Mentha pulegium*), nutsedge (*Cyperus eragrostis*), kickxia (*Kickxia* sp.), curly dock (*Rumex crispus*), and smartweed. The creek bed consists of mud and is patchily vegetated with false loosestrife (*Ludwigia* sp.) and common tule (*Schoenoplectus acutus* var. *occidentalis*). At the time of field work conducted by Sycamore, the portion of Morrison Creek within the BSA was flowing slowly. The deepest portions of the creek were estimated to be approximately five feet deep. During implementation of the proposed project, approximately 0.07-acre of the Morrison Creek channel could be temporarily impacted.

Potential impacts to Morrison Creek are discussed further under Question 'C' below.

### *Special-Status Species*

As part of the BRE, USFWS file data, California Natural Diversity Database (CNDDDB)/California Native Plant Society (CNPS) records, and field surveys were used to determine the special-status species that could occur in the BSA.

Special-status species include those plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal and State Endangered Species Acts. Both acts afford protection to listed and proposed species. In addition, CDFW Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, USFWS Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally do not have special legal status, they are given special consideration under CEQA. In addition to regulations for special-status species, most birds in the U.S., including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under the MBTA, destroying active nests, eggs, and young is illegal. In addition, plant species on CNPS Lists 1 and 2 are considered special-status plant species and are protected under CEQA.

Based on the results of the USFWS file data, CNDDDB, and CNPS records review, a total of 15 special-status plant species and 27 special-status wildlife species have been documented to occur in the three USGS quadrangles that include the project sites: Florin, Sacramento East, and Rio Linda. The area encompassed by the three quadrangles is referred to hereafter as the project region. Based on the results of the field surveys conducted by Sycamore, 12 of the special-status plant species and 18 of the special-status wildlife species were eliminated from further consideration due to the disturbed nature of the BSA and the lack of suitable habitat (see Appendix B of the BRE, included as Appendix B to this IS/MND).

Special-status species for which suitable habitat is present in the BSA are listed in Table 8 below. Special-status species for which suitable habitat is not present, or whose distributional limits preclude the possibility of their occurrence in the BSA, are not discussed further in this analysis.

#### Plants

As shown in Table 9, the BSA includes potential habitat for three special-status plant species: bristly sedge, wooly rose-mallow, and Sanford's arrowhead. However, special-status plant species were not observed in the BSA during the protocol botanical survey conducted by Sycamore in July 2020, during the evident and identifiable period. Therefore, implementation of the proposed project would not result in substantial adverse effects to special-status plants.

#### Wildlife

As shown in Table 8, the BSA includes potential habitat for a total of nine-special-status wildlife species that have been documented to occur in the project region. In addition, the BSA includes suitable habitat for nesting birds protected by the MBTA. Such species are described in further detail below.

**Table 8**  
**Special-Status Species with Potential to Occur**

Special-Status Species	Common Name	Federal Status <sup>a</sup>	State Status <sup>a</sup> & other codes <sup>b</sup>	Source <sup>c</sup>	Habitat Present?/ Species Observed?
<b>Plants</b>					
<i>Carex comosa</i>	Bristly sedge	--	--/2B.1	2	Yes/No
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	Woolly rose-mallow	--	--/1B.2	2	Yes/No
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	--	--/1B.2	2	Yes/No
<b>Invertebrates</b>					
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle (VELB)	CH, T	--	1, 2	Yes/No
<b>Fish</b>					
<i>Oncorhynchus mykiss</i>	California Central Valley steelhead DPS	CH, T	--	1, 2	Yes/No
<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run Chinook salmon ESU	CH, T	T	1, 2	Yes/No
<b>Reptiles</b>					
<i>Emys marmorata</i>	Western pond turtle	--	SSC	2	Yes/No
<i>Thamnophis gigas</i>	Giant garter snake	T	T	1, 2	Yes/No
<b>Birds</b>					
<i>Athene cunicularia</i>	Burrowing owl	--	SSC	2	Yes/No
<i>Buteo swainsoni</i>	Swainson's hawk	--	T	2	Yes/Yes
<i>Elanus leucurus</i>	White-tailed kite	--	FP	2	Yes/No
<i>Melospiza melodia</i>	Song sparrow, "Modesto Population"	--	SSC	2	Yes/No
Nesting Birds (MBTA or California Fish and Game Code regulated)		--	--	3	Yes/Yes

<sup>a</sup> **Listing Status:** Federal status determined from USFWS list. State status determined from CDFW (2019a,b,c). Codes used in table are: **E** = Endangered; **T** = Threatened; **P** = Proposed; **C** = Candidate; **R** = California Rare; **CH** = Critical Habitat has been designated.

<sup>b</sup> **Other Codes:** Other codes determined from USFWS letter; CDFW (2019a,b,c). Codes used in the table are as follows:

- **SSC** = CDFW Species of Special Concern; **FP** = CDFW Fully Protected; **Prot** = CDFW Protected; **CH** = Critical habitat designated.
- **CNPS List** (plants only): **1A** = Presumed Extinct in California; **1B** = Rare or Endangered (R/E) in California and elsewhere; **2** = R/E in California and more common elsewhere; **3** = Need more information; **4** = Plants of limited distribution.
- **CNPS List Decimal Extensions:** **.1** = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat); **.2** = Fairly endangered in California (20 to 80 percent of occurrences threatened); **.3** = Not very endangered in California (< 20% of occurrences threatened or no current threats known).

<sup>c</sup> **Source:** **1** = USFWS letter. **2** = CNDDDB. **3** = Observed or included by Sycamore.

**Source: Sycamore Environmental Consultants, Inc., September 2020.**

### *Valley Elderberry Longhorn Beetle*

The VELB is a small (0.5 to 0.8-inch long) wood-boring beetle found only in association with elderberry (*Sambucus* sp.), its obligate larval host plant. Eggs are laid on living elderberry shrubs. The first larval instar bores through the center of the elderberry stem and develops for one to two years while feeding on the elderberry pith. Prior to pupation, the larva chews an 'exit hole' through the bark and plugs the hole with wood shavings. Exit holes are circular or slightly oval, and 0.28 to 0.39-inch in diameter. After creating an

exit hole, the larva crawls back into its pupal chamber, metamorphoses, and emerges as an adult. Adults emerge, mate, and lay eggs in the spring and summer (March to July), typically when elderberry shrubs are flowering.

In the Central Valley, elderberry shrubs occur most commonly in riparian forests, riparian forest margins, and grassy savannas. Elderberries also occur in oak woodland, mixed chaparral-foothill woodland, and other contexts. Healthy riparian systems supporting dense elderberry clumps are the primary habitat of VELB. Loss of riparian habitat is the primary threat to VELB. The USFWS recognizes habitat for VELB as including both riparian and non-riparian areas where elderberry shrubs are present. Riparian habitat includes all areas that are either influenced by surface or subsurface water flows along streams, rivers, and canals (including the land side of levees) and areas dominated by typically riparian species and non-native vegetation.

The USFWS Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle outlines procedures for determining occupancy in riparian and non-riparian contexts. The USFWS considers elderberry shrubs in riparian contexts within the range of VELB to be 'suitable habitat, likely occupied' regardless whether exit holes are observed. In non-riparian contexts, the USFWS may consider elderberry shrubs to be unoccupied based on the results of exit hole surveys and an analysis of regional context, including proximity to riparian areas and known VELB populations.

A total of 13 CNDDDB records of VELB have been documented within the project region. The closest record (Occurrence #277) is from 2006, approximately 720 feet southwest of Sump 058.

Elderberry shrubs observed at Sump 155 and the Lathrop staging area provide potential habitat for VELB. The elderberry shrub at Sump 155 is located adjacent to a levee access road on the landside levee toe; the dripline is approximately six feet west of the access road. The shrub is approximately 90 feet south of the sump station fence and approximately 85 feet south of the proposed limits of excavation. The elderberry shrub at Sump 155 contained approximately 10 VELB exit holes and is assumed to be occupied. The elderberry shrubs at the Lathrop Staging Area are located behind and adjacent to the staging area's western fence. The Lathrop staging area is adjacent to USFWS-designated VELB critical habitat to the north. The elderberry shrubs behind the western fence of the Lathrop staging area are potentially occupied by VELB. The shrubs are located over 20 feet to the west of where staging would occur during project implementation.

Elderberry shrubs were not observed at the other sump sites.

Improvement activities associated with the proposed project at Sump 155 would not require trimming or cutting the elderberry shrub. However, given that the proposed project would include disturbance within the vicinity of the Sump 155 shrub, as well as storage of equipment in the vicinity of the shrubs at the edge of the Lathrop staging area, the proposed project has the potential to result in adverse effects to VELB.

#### *California Central Valley Steelhead Distinct Population Segment*

The California Central Valley steelhead distinct population segment (DPS), referred to hereafter as CCV steelhead, is a federal threatened species. The CCV steelhead DPS includes all naturally spawned anadromous populations below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries,

excluding steelhead from San Francisco and San Pablo Bays and their tributaries. The CCV steelhead DPS includes two artificial propagation programs: the Coleman National Fish Hatchery, and Feather River Hatchery steelhead hatchery programs. The Nimbus Fish Hatchery along the American River artificially spawns CCV steelhead; however, such individuals are not considered to be a part of the Evolutionary Significant Unit (ESU). According to redd surveys from 2002 to 2007, some CCV steelhead naturally spawn in the American River below Nimbus Dam.

A total of three CNDDDB records of CCV steelhead have been documented within the project region. The closest record (Occurrence #5) is from 2012, located in the American River adjacent to Sump 155. In addition, CCV steelhead are known to occur in Steelhead Creek. The American River, its floodplain, and Steelhead Creek within the BSA are designated critical habitat for CCV steelhead.

Suitable migration habitat occurs within the BSA at Sumps 058, 102, 155, and Sump 151 during 100-year flood events. Suitable juvenile rearing habitat also occurs at Sumps 058 and 155. Ground-disturbing activities associated with implementation of the proposed sump station improvements could result in adverse effects to the species if sediment-laden runoff from the disturbance areas is discharged to the adjacent waterways, or if in-water work results in disturbance of CCV steelhead habitat. Thus, implementation of avoidance and minimization measures to protect perennial and intermittent channels in the BSA would be necessary to reduce potential impacts to CCV steelhead to a less-than-significant level.

#### *Central Valley Spring-Run Chinook Salmon ESU*

Central Valley spring-run Chinook salmon ESU, hereafter SR Chinook, is a State and federal threatened species. The SR Chinook ESU includes all naturally spawned populations of SR Chinook in the Sacramento River and its tributaries, including the Feather River, the Feather River Hatchery SR Chinook program, and unobstructed perennial tributaries to the Sacramento River. Construction of low elevation dams in the foothills of the Sierras on the San Joaquin, Mokelumne, Stanislaus, Tuolumne, and Merced rivers, is thought to have extirpated SR Chinook salmon from these watersheds of the San Joaquin River, as well as on the American River of the Sacramento River basin.

Records of CNDDDB occurrences of SR Chinook in the creeks adjacent to the sump sites, including in the lower American River, do not exist. The closest record (Occurrence #17) is from 2004 in the Barge Canal in the Sacramento River Deep Water Ship Channel in West Sacramento near Jefferson Boulevard. One adult and 26 juveniles were captured on January 14, February 3 and 24, March 21, and May 25. The American River at Sump 155 within the BSA is designated critical habitat for SR Chinook. The remaining sumps are outside of this species' range and, thus, the proposed work at such sump stations is not anticipated to result in impacts to the species. Given that ground-disturbing activities and in-water work associated with implementation of the proposed sump station improvements at Sump 155, including removal of the concrete apron at the outfall structure, could result in adverse effects to the species, implementation of avoidance and minimization measures to protect perennial and intermittent channels in the BSA would be necessary to reduce potential impacts to SR Chinook to a less-than-significant level.

### *Western Pond Turtle*

Western pond turtle (WPT) is a State species of special concern. The species is associated with permanent or nearly permanent water in a wide variety of habitat types, such as ponds, lakes, streams, irrigation ditches, and permanent pools along intermittent streams. Currently, WPT occurs throughout California west of the Sierra-Cascade crest. The species is absent from desert regions, except along the Mojave River and its tributaries. Elevation range extends from near sea level to 4,690 feet. A total of five CNDDDB records of WPT exist within the project region. The closest record (Occurrence #633) is from 2004, approximately 1.3 miles southeast of Sump 089.

Suitable habitat for WPT occurs on the water side of the levees at all project sites. The species was not observed during the biological survey conducted by Sycamore. Nonetheless, given the presence of suitable habitat, ground-disturbing activities associated with implementation of the proposed sump station improvements could result in adverse effects to WPT.

### *Giant Garter Snake*

Giant garter snake (GGS) is a federal and state threatened species. Historically, GGS inhabited natural wetlands, but now it mostly inhabits agricultural wetlands and other waterways, such as irrigation and drainage canals, riceland, marshes, sloughs, ponds, small lakes, low gradient streams with silt substrates, and adjacent uplands. The current (extant) range of the GGS extends from Chico in Butte County southward to the Mendota Wildlife Area in Fresno County.

A total of 10 CNDDDB records of GGS have been documented within the project region. The closest record (Occurrence #198) is from 2005, approximately 0.7-mile southeast of Sump 089. Known GGS populations do not exist in the portion of Morrison Creek adjacent to Sump 089. Nevertheless, GGS could occur in and along Morrison Creek adjacent to Sump 089. Morrison Creek contains water with emergent vegetation and suitable prey during the GGS active season. The levee slope provides basking habitat and contains small mammal burrows suitable for winter refugia. Aerial imagery shows that there is habitat connectivity between the BSA and the CNDDDB known records within five miles south of the BSA, including Occurrence #198, approximately 0.7-mile to the southeast.

Sumps 058, 102, 151, and 155 are located in areas that have been modeled as 'low probability of GGS occurrence' based on various environmental attributes known to be correlated with occupancy, including land cover, land use, and soil type. Habitat suitability of Steelhead Creek is primarily limited by dense riparian canopy (typical for the lower portions of Steelhead Creek south of the confluence with Arcade Creek), and the assumed presence of large predatory fishes. Habitat suitability of Arcade Creek is limited by the lack of water during snake's active season (Arcade Creek was mostly dry during the July 2020 fieldwork), and by dense riparian canopy. Habitat suitability of the American River and its floodplain channels is limited by scouring flows, dense riparian vegetation, and lack of emergent vegetation, and the presence of large predatory fishes. Thus, GGS is not likely to occur in the vicinity of Sumps 058, 102, 151, or 155 or at the staging areas.

Given that Sump 089 includes suitable habitat for GGS, ground-disturbing activities associated with implementation of the proposed sump station improvements could result in an adverse effect to the species.

### *Burrowing Owl*

Burrowing owl is a state species of special concern. Nesting sites are of concern to CDFW. Burrowing owls primarily inhabit open, dry grassland and desert habitats, such as grasses, forbs, and open shrub stages of pinyon-juniper and ponderosa pine habitats. Main habitat components include burrows for roosting and nesting, and relatively short vegetation with sparse shrubs and taller vegetation. Burrowing owls most commonly use ground squirrel burrows, but they may also use badger, coyote, and fox holes or dens; or human-made structures such as culverts, piles of concrete rubble, pipes and nest boxes. Burrowing owls are a year-round resident in most of California, particularly in the Central Valley, San Francisco Bay region, Carrizo Plain, and Imperial. The species is generally absent from the humid coastal counties north of Marin County and from mountainous areas above 5,300 feet. Burrowing owls are a semi-colonial species that breed in California from March through August, though breeding can begin as early as February and extend into December.

A total of 26 CNDDDB records of burrowing owl have been documented within the project region. The nearest record (Occurrence #61) is from 1974, approximately 480 feet south of Sump 155. The record describes 16 burrows and 13 nesting colonies on the Sacramento State University campus and on the west (land) side of the adjacent levee in 1974.

The open grassland on levee slopes provide potential foraging habitat at all sump sites. However, burrowing owls, or sign of burrowing owl, were not observed within 500 feet of the BSA during the biological surveys conducted as part of the BRE. Burrows potentially suitable for nesting occur at Sump 089. Sump 089 was covered by comprehensive nesting raptor surveys conducted by Sacramento Regional County Sanitation District Bufferlands biologists between February and May 2020. The surveys did not detect burrowing owls within an approximately five square mile area around Sump 089.

Nonetheless, given that Sump 089 includes suitable nesting habitat for burrowing owl, ground-disturbing activities associated with implementation of the proposed sump station improvements could result in adverse effects to the species if the species is present within or adjacent to Sump 089 prior to initiation of ground disturbance.

### *Swainson's Hawk*

Swainson's hawk is a state threatened species. Swainson's hawks nest in open riparian habitat, in scattered trees, or in small groves in sparsely vegetated flatlands. Nesting areas are usually located near water, but are occasionally found in arid regions. Typical habitat includes open desert, grassland, or cropland containing scattered, large trees or small groves. Swainson's hawk is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Swainson's hawks breed and forage in California's Central Valley in spring and summer. Migrating individuals move south through the southern and central interior of California in September and October, some migrating as far as South America.

A total of 56 CNDDDB records of Swainson's hawk have been documented within the project region. The closest record (Occurrence #931) is from 2001, approximately 200 feet south of Sump 058. The next closest record (Occurrence #2213) is from 2012, approximately 550 feet south of Sump 151. According to raptor survey data collected in 2020 by the Sacramento Regional County Sanitation District, two Swainson's hawk nests

were observed within 0.5-mile of Sump 089. The closest nest was located approximately 0.25-mile southwest of Sump 089. Suitable nesting habitat occurs at all sump station facilities within the BSA. In addition, Swainson's hawks were observed flying overhead the BSA at Sump 089 during the biological survey conducted by Sycamore. Given that the BSA includes suitable nesting habitat for Swainson's hawk, ground-disturbing activities associated with implementation of the proposed sump station improvements could result in adverse effects to the species if the species is present within or adjacent to the BSA prior to initiation of ground disturbance.

The areas of annual grassland within the BSA at Sumps 089, 102, 151, and 155 are suitable foraging habitat for Swainson's hawk, while smaller or more disturbed grassland patches at Sump 058 provide marginal foraging habitat. Larger expanses of suitable foraging habitat, including along the adjacent levee slopes, surround or are within less than 500 feet of the BSA at all of the sump sites.

#### *White-Tailed Kite*

White-tailed kite nest trees can be located in a variety of wooded habitats including riparian areas, oak woodlands, eucalyptus groves, and scattered isolated trees. Guidance from the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) notes that trees over 20 feet tall provide suitable nesting habitat. Areas with substantial groves of dense, broad-leaved deciduous trees are used for nesting and roosting. Nests are typically located from 20 to 100 feet above the ground near the top of dense oak, willow, or other tree stands, and are often located near an open foraging area with a dense population of voles. The species is rarely found away from agricultural areas. White-tailed kite forages in cultivated lands (field crops, grain and hay, and cultivated/pasture land), annual grasslands and wetland areas. The species preys mostly on voles and other small, diurnal mammals, occasionally on birds, insects, reptiles, and amphibians. White-tailed kites breed from February to October, with peak activity from May to August. White-tailed kites are a year-round resident of coastal and valley lowlands in cismontane California; the species is absent from higher elevations in the Sierra Nevada, the Modoc Plateau, and from most desert regions.

A total of 12 CNDDDB records of white-tailed kite have been documented within the project region. The closest record (Occurrence #142) is from 2009, approximately 0.5-mile southeast of Sump 151. Trees within the BSA or within 500 feet of the BSA provide nesting habitat for white-tailed kite at all sump sites. The areas of annual grassland within the BSA at Sumps 089, 102, 151, and 155 are suitable foraging habitat for white-tailed kite, while smaller or more disturbed grassland patches at Sump 058 provide marginal foraging habitat. Larger expanses of suitable foraging habitat, including along the adjacent levee slopes, surround or are within less than 500 feet of the BSA at all of the sump sites.

White-tailed kites were not observed within the BSA or flying overhead the BSA during the biological survey. Nonetheless, given that the BSA includes suitable nesting habitat for white-tailed kite, ground-disturbing activities associated with implementation of the proposed sump station improvements could result in adverse effects to the species if the species is present within or adjacent to the BSA prior to initiation of ground disturbance.

#### *Modesto Population of Song Sparrow*

The Modesto Population of song sparrow, referred to hereafter as Modesto song sparrow, is a state species of special concern. Modesto song sparrow is a year-round resident that

prefers emergent freshwater marshes dominated by tules and cattails, as well as riparian willow thickets. Modesto song sparrows also nest in riparian forests of valley oak with sufficient understory of blackberry, along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites. The Modesto song sparrow thrives where extensive wetlands remain. The species may also breed in sparsely vegetated irrigation canals. The Modesto song sparrow is endemic to California, with established populations in the Sacramento Valley, Sacramento-San Joaquin River Delta, and northern San Joaquin Valley. The species is most abundant in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta. They are almost entirely absent from the mainstem and tributaries of the Sacramento River above Sacramento.

A total of four CNDDDB records of Modesto song sparrow have been documented within the project region. The closest record (Occurrence #83) is a coarsely mapped polygon based on a siting in 1900. The record overlaps the BSA at several of the sump sites (all except for Sump 089). Suitable nesting habitat occurs within the BSA at Sumps 058, 102, and 151; the remaining sump station facilities within the BSA lack suitable habitat.

Modesto song sparrow was not observed during the biological survey conducted by Sycamore. Nonetheless, given that the BSA includes suitable nesting habitat for Modesto song sparrow, ground-disturbing activities associated with implementation of the proposed sump station improvements at Sumps 058, 102, and 151 could result in adverse effects to the species if the species is present within or adjacent to the BSA prior to initiation of ground disturbance.

#### *Other Nesting Bird Species*

The federal MBTA of 1918 protects most birds and their nests, including most non-migratory birds in California. Any disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the federal MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a 'take' of the species under federal law.

California Fish and Game Code Section 3503 protects most birds and their nests. Fish and Game Code Section 3503.5 further protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds of prey). Birds of prey include raptors, falcons, and owls. In 2019, the State of California enacted the California MBTA. The State MBTA prohibits the take or possession of any bird or any part of birds listed under the State MBTA as of January 2020. The California Fish and Game Code continues to use a broad definition of take in the application of the State MBTA, including incidental take.

The BSA provides potential nesting habitat for birds listed under the federal/State MBTA and/or regulated by the California Fish and Game Code. Depending on the species, birds may nest on trees, shrubs, in or on the ground, and on artificial structures such as buildings, poles, and signs. Furthermore, numerous birds listed under the federal/State MBTA or regulated by California Fish and Game Code were observed during the surveys. Active nests of barn swallows were observed on the sump structures at Sumps 89 and 102. Other nests could become established in the BSA during future nesting seasons. Nesting or attempted nesting by migratory birds and birds-of-prey is anticipated from 1 February to 30 September. Project disturbance occurring during the nest season could lead to active nest destruction or abandonment for birds protected by the MBTA.

### *Protected Trees*

The City of Sacramento requires a permit to perform regulated work on “City Trees” or “Private Protected Trees” (which includes trees formerly referred to as “*Heritage Trees*”). City trees include trees partially or completely located in a City park, on City-owned property, or on a public right-of-way, including any street, road, sidewalk, park strip, mow strip or alley. Private protected trees are defined as trees designated to have special historical value, special environmental value, or significant community benefit, and is located on private property. The City defines Private Protected Trees as follows:<sup>6</sup>

- All native trees 12-inch diameter at standard height (DSH) or greater. Native trees include: coast, interior, valley and blue oaks, California sycamore, and buckeye.
- All trees 32-inch DSH or greater with an existing single family or duplex dwelling.
- All trees 24-inch DSH or greater on undeveloped land or any other type of property such as commercial, industrial, and apartments.

Per the BRE, the BSA includes a total of 38 trees, all of which are considered City Trees. As part of the proposed project, a total of six trees are anticipated for removal: two trees at Sump 089 and four trees at Sump 155. Removal of trees could impact protected birds should they be nesting prior to removal.

### *Conclusion*

Based on the above, the proposed project would not result in adverse effects to special-status plants. However, the project could result in temporary impacts to 0.08-acre of riparian forest and 0.02-acre of riparian scrub shrub, both of which are sensitive natural communities regulated by CDFW. In addition, ground-disturbing activities associated with the proposed project have the potential to result in temporary impacts to VELB, CCV steelhead, SR Chinook, WPT, CGS, burrowing owl, Swainson’s hawk, white-tailed kite, Modesto song sparrow, and other nesting bird species protected by the federal/State MBTA. Thus, the proposed project could result in **additional significant environmental effects** related to substantial degradation of the quality of the environment, reduction of the habitat, or reduction of a population below self-sustaining levels for threatened or endangered species of plant or animal species beyond what was analyzed in the Master EIR. Implementation of Mitigation Measures 3-1 through 3-8 below would mitigate the potential impacts to a *less-than-significant* level.

### Question C

As noted above and shown in Table 7, 0.11-acre of Steelhead Creek, 0.06-acre of the American River Floodplain Channel, 0.15-acre of the American River, and 0.14-acre of Morrison Creek are located within the BSA. All waterways are potentially jurisdictional under Section 404 of the Clean Water Act and Section 408 of the Clean Water Act. In addition, work within the streambank of the waterways is subject to the jurisdiction of the CDFW per Section 1602 of the California Fish and Game Code. The proposed project would not have the potential to result in impacts to Steelhead Creek within the BSA. However, the proposed pipe replacements and associated improvements have the potential to result in temporary impacts to 0.06-acre of the American River Floodplain Channel, 0.02-acre of the American River, and 0.07-acre of Morrison Creek. Therefore, the proposed project could result in **additional significant environmental effects** to regulatory

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<sup>6</sup> City of Sacramento. *Tree Permits & Ordinances*. Available at: <https://www.cityofsacramento.org/Public-Works/Maintenance-Services/Trees/Permits-Ordinances>. Accessed July 2018.

waters or wetlands beyond what was analyzed in the Master EIR. Implementation of Mitigation Measure 3-1(b) below would mitigate the impact to a *less-than-significant* level.

### **Mitigation Measures**

Implementation of the following mitigation measures would reduce impacts related to biological resources to *less-than-significant* levels.

#### Sensitive Natural Communities

3-1(a)      *The following avoidance and minimization measures shall be noted on project improvement plans and implemented within the BSA:*

- *Removal of trees and riparian vegetation shall be minimized to the extent possible.*
- *To protect avoided riparian forest, riparian scrub shrub, retained trees, and other sensitive natural communities, prior to construction, environmentally sensitive area (ESA) fencing or equivalent demarcation approved by the engineer shall be placed along the limits of construction in the BSA to exclude construction activities. Trucks and other vehicles shall not be allowed to park beyond, nor shall equipment be stored beyond, the fencing. Vegetation trimming/mowing or ground-disturbing activities shall not be permitted beyond the fencing.*
- *For all sumps, the City shall obtain a Streambed Alteration Agreement from the CDFW in compliance with Fish and Game Code Section 1602. The City and its contractor shall be required to comply with terms of the Agreement and provide any required documentation of proof of compliance to CDFW.*

3-1(b)      *The following avoidance and minimization measures shall be implemented within the BSA:*

- *The project contractor shall comply with the provisions of Title 9, Chapters 9.31 through 9.35 of the City of Sacramento Code (Grading, Erosion and Sediment Control Ordinance). Code compliance includes preparation of an Erosion and Sediment Control Plan.*
- *BMPs to control soil erosion, sediment transport, and runoff pollution shall be implemented during construction per the City's Administrative and Technical Procedures Manual for Grading and Erosion and Sediment Control (City of Sacramento 2013).*
- *Construction activities on the water side of the levee would not occur during the flood season, as determined by the Central Valley Flood Protection Board (CVFPB) – typically November 1 through April 15 or July 15 as specifically determined by the CVFPB for each sump site. The project would adhere to further work period restrictions in applicable permits and requirements from CDFW, USFWS, and the National Marine Fisheries Service (NMFS), unless the applicable permitting agencies approve work window modification.*
- *Equipment shall be refueled and serviced at designated construction staging areas. All construction material shall be stored and contained in designated areas located away from aquatic resources to prevent transport*

*of materials into adjacent waterways. Appropriate BMPs shall be installed to collect any discharge, and adequate materials for spill cleanup shall be kept on site. Construction vehicles and equipment shall be properly maintained to prevent contamination of soil or water from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease.*

- *For all sump sites, the City shall obtain a Streambed Alteration Agreement from CDFW in compliance with California Fish and Game Code Section 1602 and an Encroachment Permit permission in compliance with Section 408 of the Clean Water Act from the CVFPB. For Sumps 089 and 155, the City shall obtain approval from USACE for Project coverage under Nationwide Permits, in compliance with Section 404 of the Clean Water Act and a Water Quality Certification from the Central Valley Regional Water Quality Control Board in compliance with Section 401 of the Clean Water Act. The City and its contractor shall be required to comply with terms of all permits and provide any required documentation of proof of compliance to the permitting agencies.*

Valley Elderberry Longhorn Beetle

3-2(a)      *Implement Mitigation Measure 3-1(a) above.*

3-2(b)      *The following avoidance and minimization measures shall be implemented at Sump 155 and the Lathrop staging area per the USFWS 2017 Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus) (VELB):*

- *Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) shall avoid elderberry shrubs by a minimum of 20 feet from the drip-line. Areas within 20 feet of elderberry shrubs at the Lathrop staging area and areas west of the levee access road at Sump 155 shall be designated as ESAs. Construction personnel, equipment, or material storage shall not be allowed within the ESAs. Brightly colored construction fencing shall be installed at least 20 feet from elderberry shrubs to demarcate the ESA at the Lathrop staging area and along the length of the western edge of the levee access road at Sump 155. The fencing shall include signage prohibiting entry by construction personnel. At Sump 155, signage shall prohibit vehicle or equipment parking along the access road within 20 feet of the elderberry shrub.*
- *A qualified biologist shall provide training for all contractors, work crews, and any on-site personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance.*

California Central Valley Steelhead and Central Valley Spring-Run Chinook

3-3            *Implement Mitigation Measure 3-1(b) above.*

Western Pond Turtle

3-4(a)      *Implement Mitigation Measure 3-1(b) above.*

3-4(b)      *The following avoidance and minimization measures shall be implemented at Sump 089:*

- *A qualified biologist shall conduct a preconstruction survey for Western Pond Turtle (WPT) within 48 hours prior to the onset of vegetation removal or ground disturbance. The survey shall cover the waterside of the levee. If a WPT is located during the survey, the biologist shall be given sufficient time prior to construction to relocate the WPT to the closest suitable habitat where individuals will not be affected by construction.*
- *If WPT are found during construction, construction activities with potential to harm the individual(s) shall stop and a qualified biologist shall be notified. Construction shall resume when the biologist has either relocated the WPT out of the construction zone to nearby suitable habitat, or, after thorough inspection, determined that the WPT has moved away from the construction zone.*
- *Environmental awareness training shall be conducted by a qualified biologist prior to the onset of project work. Construction personnel shall be trained on how to identify WPT, and how to proceed if WPT is encountered. If a WPT is encountered in the work area, construction should stop and a qualified biologist shall be notified. The training shall be repeated for new personnel as they arrive at the site. Upon completion of training, employees shall sign a form stating that they attended the training and understand all the protection measures. Copies of the signed forms shall be provided to the City of Sacramento within two weeks of training completion.*

#### Giant Garter Snake

3-5      *The following measures, based on the Programmatic Biological Opinion between the USACE and USFWS for effects on Giant Garter Snake (GGS) (the Programmatic; USFWS 1997), shall be implemented at Sump 089:*

- *A USFWS-approved biologist shall conduct a preconstruction clearance survey within 24 hours prior to construction activities within identified GGS aquatic and adjacent upland habitat. If construction activities stop for a period of two weeks or more, another preconstruction clearance survey shall be conducted within 24 hours prior to resuming construction activity.*
- *All construction activity involving disturbance of GGS habitat shall be restricted to the snake's active season, May 1 through October 1. During this period, the potential for direct mortality is reduced because snakes are expected to move and avoid danger.*
- *In areas where construction is to take place, encourage giant garter snakes to leave the site on their own by dewatering all irrigation ditches, canals, or other aquatic habitat (i.e., removing giant garter snake aquatic habitat) between April 15 and September 30. Dewatered habitat must remain dry, with no water puddles remaining, for at least 15 consecutive days prior to excavating or filling of the habitat. If a site cannot be completely dewatered, netting and salvage of giant garter snake prey items may be necessary to discourage use by snakes.*
- *Conduct environmental awareness training for all construction personnel.*
- *If a live GGS is encountered during construction activities, immediately notify the project's biological monitor, USFWS, and CDFW. The monitor*

*shall stop construction in the vicinity of the snake, monitor the snake, and allow the snake to leave on its own. The monitor shall remain in the area for the remainder of the workday to ensure the snake is not harmed or, if the snake leaves the site, does not return. If the GGS does not leave on its own, the qualified biologist shall contact the USFWS for guidance.*

- *Temporary fencing exclusion fencing shall be installed around work area in GGS habitat.*

#### Burrowing Owl

3-6 *A qualified biologist shall conduct Take Avoidance Surveys at Sump 089 in accordance with Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFW 2012). An initial Take Avoidance Survey shall be conducted no less than 14 days prior to initiating ground disturbance activities and a final survey shall be conducted within 24 hours prior to ground disturbance. The preconstruction survey for burrowing owls shall include all potential burrowing owl habitat within 500 feet of the project. Portions of the survey area located on private land shall be surveyed from all publicly accessible areas. If active burrowing owl burrows are found, the following measures shall be implemented at Sump 089:*

- *During the non-breeding season (September 1 through January 31), the biologist shall establish a 160-foot ESA around the burrow. During the breeding season (February 1 through August 31), the biologist shall establish a 300-foot ESA around the burrow in consultation with CDFW.*
- *The size of the ESA may be reduced if the biologist monitors the construction activities and determines that disturbance to the burrowing owl is not occurring. Reduction of ESA size depends on the location of the burrow relative to the proposed disturbance area, project activities during the time the burrow is active, and other project-specific factors.*
- *If the burrow is located within the construction zone and it is during the non-breeding season, the burrowing owl shall be passively excluded from the burrow using one-way doors, as described in the Exclusion Plan of Appendix E of the CDFW's 2012 Staff Report on Burrowing Owl Mitigation.*
- *If the burrow is located within the construction zone and it is during the breeding season, the burrow owl shall only be passively excluded if it has been confirmed that the owl has not begun egg laying and incubation, the clutch was unsuccessful, or juveniles from the occupied burrows are foraging independently and are capable of independent survival.*

#### Swainson's Hawk

3-7(a) *Implement Mitigation Measure 3-8 below.*

3-7(b) *The following measure shall be implemented at each of the sump stations within the BSA and at the proposed staging areas:*

- *A qualified biologist shall conduct surveys of the BSA and staging areas for Swainson's hawk in accordance with the 2000 Swainson's Hawk Technical Advisory Committee (TAC) guidelines in the year prior to tree removal. The survey area shall extend 0.25 miles out from the BSA/staging areas. If a Swainson's hawk nest is still active on or within 0.25-mile of the*

*BSA/staging areas at the time of project initiation, protective buffers shall be established around the nest in accordance with CDFW guidance to avoid take.*

White-Tailed Kite, Modesto Song Sparrow, and other Nesting Bird Species

3-8            *The following measure shall be implemented at each of the sump stations within the BSA and at the proposed staging areas:*

- *To minimize effects to nesting birds, trees and shrubs scheduled for removal shall be removed during the non-breeding season, between September 2 and February 14.*
- *A preconstruction survey for nesting birds shall be conducted prior to any work initiated between 15 February and 1 September. A qualified biologist shall conduct the survey within 14 days prior to initiation of construction activities. The survey shall cover areas within 250 feet of the proposed disturbance area for birds of prey and 100 feet of the disturbance area for migratory birds.*
- *If an active nest of a bird of prey, migratory bird, or other protected bird species is discovered, then construction within 250 feet of the nest shall stop until a qualified biologist confirms where work may resume without threat of nest abandonment. The biologist shall establish a minimum 250-foot ESA around nests of a bird of prey. A minimum 100-foot ESA shall be established around nests of migratory or other protected bird species. No construction activity shall be allowed in the ESA until the biologist determines the nest is no longer active or that a smaller ESA shall protect the active nest. Buffer sizes may be adjusted at the discretion of the biologist depending on the species of bird, the location of the nest relative to the proposed disturbance area, the existing level of disturbance, and other site-specific conditions.*

NBHCP Compliance

3-9            *Prior to approval of improvement plans, the City's New Growth Manager, serving as the City's HCP Designee, shall be contacted to ensure that the requirements of the Natomas Basin Habitat Conservation Plan (NBHCP) are complied with during implementation of improvements within the NBHCP area.*

**Findings**

All additional significant environmental effects of the proposed project relating to biological resources can be mitigated to less-than-significant levels. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

**SUMP STATION FACILITIES IMPROVEMENT PROJECT**  
INITIAL STUDY

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>4. CULTURAL RESOURCES</b> Would the project:			
A) Cause a substantial adverse change in the significance of a historical or archaeological resource as defined in § 15064.5?		X	
B) Directly or indirectly destroy a unique paleontological resource?		X	

### Environmental Setting

The City of Sacramento and the surrounding area are known to have been occupied by Native American groups for thousands of years prior to settlement by non-Native peoples. Archaeological materials, including human burials, have been found throughout the City. Human burials outside of formal cemeteries often occur in prehistoric contexts. Areas of high sensitivity for archaeological resources, as identified in the 2035 General Plan Background Report, are located within close proximity to the Sacramento and American rivers and other watercourses.

The 2035 General Plan land use diagram designates a wide swath of land along the American River as Parks, which limits development and impacts on sensitive prehistoric resources. High sensitivity areas may be found in other areas related to the ancient flows of the rivers, with differing meanders than found today; however, all such areas are outside of the immediate project vicinity. The 2035 General Plan Background Report also defines moderate sensitivity areas, which are areas such as creeks, other watercourses, and high spots near waterways where the discovery of villages is unlikely, but campsites or special use sites may have existed. Moderate areas are often disturbed by siltation, or development, however discovery of new archaeological resources is still possible.

According to a Cultural Resources Inventory prepared for the proposed project by Sycamore Environmental Consultants, Inc.,<sup>7</sup> the project vicinity is a highly developed urban area that includes open space such as agricultural and recreational lands, as well as residential, commercial, and municipal developments. Generally, the areas in the vicinity of the project sites have been subject to extensive development, including railroad lines, roadways, and commercial and residential buildings. The Area of Potential Effects (APE) evaluated in the Cultural Resources Inventory included the footprint of all five drainage sump station facilities, associated pipelines to be repaired or replaced, staging areas, and the immediate surroundings. The vertical APE includes the maximum depth of anticipated ground-disturbance of 10 feet.

The Sacred Lands File (SLF) search, California Historical Resources Information System (CHRIS) records search, and field survey conducted as part of the Cultural Resources Report are described below.

<sup>7</sup> Natural Investigations Company. *Cultural Resources Inventory for the Pump Outfalls Replacement Project, Sacramento, Sacramento County, California*. August 2020. This Confidential Appendix is on file with the City of Sacramento.

### SLF Search

As part of the Cultural Resources Report, Natural Investigations contacted the Native American Heritage Commission (NAHC) requesting a search of their SLF for traditional tribal cultural resources within or near the APE. The results of the search returned by the NAHC on August 5, 2020 were positive for tribal cultural resources in the project vicinity.

### CHRIS Record Search

A CHRIS record search was conducted by the North Central Information Center (NCIC) to determine whether prehistoric or historic cultural resources have been previously recorded within the project sites, the extent to which the project sites have been previously surveyed, and the number and type of cultural resources within a 0.5-mile radius of the project sites. The archival search of the archaeological and historical records, national and state databases, and historic maps included the following sources:

- National Register of Historic Places: listed properties;
- California Register of Historical Resources: listed resources;
- Historic Property Data File for Sacramento County;
- Archaeological Determinations of Eligibility;
- California Inventory of Historical Resources;
- California Historical Landmarks; and
- California Points of Historical Interest.

The CHRIS search results indicate that 18 prior cultural resources studies have been completed within the APE and seven cultural resources have been previously recorded within the APE associated with the proposed project, two of which have been re-recorded as contributing elements of an historic district. Twenty-three additional resources have been recorded outside the project limits but within the 0.5-mile search radius. The seven previously recorded resources, along with one relevant historic landscape district, are described in the following sections:

#### *P-34-000490 - Reclamation District 1000 East Levee*

The Reclamation District (RD) 1000 East Levee was constructed in 1911 by the Natomas Company. The levee runs for approximately 18 miles on the eastern bank of the Sacramento River, between Natomas Park and the southern end of Gardenland in North Sacramento. The levee is a contributing element of the RD 1000 Rural Historic Landscape District (P-34-005251) which was determined eligible for listing on the NRHP under Criterion A at the State level of significance as one of the earliest reclamation districts in the Sacramento Valley. The period of significance of the district is 1911 to 1939. The State Historic Preservation Officer (SHPO) concurred with a finding that the levee is a contributing element of the district in 1994.

#### *P-34-000508 – American River North Levee*

The American River North Levee is an 11.5-mile segment (Unit 118.2) of the American River Levees (Unit 118). The levee runs eastward along the northern bank of the American River from its confluence with the Sacramento River. According to the Cultural Resources Inventory (page 32), previous evaluation of the levee completed in 2001 concluded that the levee is not eligible for listing on the NRHP. It was noted that while the levee does represent an important part of the history of early water management in the region, maintenance and improvement related impacts have been so severe and so extensive that the resource no longer retains the integrity needed to

convey the levee's significance. In 2009, the USACE obtained SHPO concurrence regarding the ineligibility of the resource for listing on the NRHP/CRHR.

*P-34-000509 - American River South Levee*

The American River South Levee is an 11.3-mile segment (Unit 118.1) of the American River Levees (Unit 118) that runs eastward along the southern bank of the American River from its confluence with the Sacramento River. The levee was included in the Sacramento River Flood Control Project (SRFCP) approved in 1914 and implemented throughout the first half of the 20th century. Upgrading of the levee to the standards of the USACE was completed in 1948. A previous evaluation of the American River South Levee concluded that the levee is significant under NRHP/CRHR Criterion A/1 within the context of regional flood management and for the levee's association with the SRFCP. The period of significance begins in 1917, when U.S. Congress approved the Flood Control Act, the first comprehensive plan for flood management in California. The period ends in 1968.

*P-34-001363 - Morrison Creek Levee*

The Morrison Creek Levee is an approximately 5.5-mile long channelized segment of Morrison and Beacon (Union House) Creeks. The levee was constructed in approximately 1961 and is within the jurisdiction of the City of Sacramento and is not a part of the USACE levee system. The levee serves as the boundary between the Delta Shores development to the north and the Sacramento Regional County Sanitation District facility to the south. The resource was evaluated in 2002 and was determined to be ineligible for listing on the NRHP and the CRHR. The SHPO subsequently concurred with the ineligibility recommendation.

*P-34-005349 - West Levee of the Natomas East Main Drainage Canal*

The subject resource is a large levee forming the western bank of the 14.51-mile long Natomas East Main Drainage Canal. The canal intercepts the water from the creek and conveys the water to the Sacramento River. The canal is a contributing element of the RD 1000 Rural Historic Landscape District (P-34-005251) and the integrity of location, materials, and design of the levee have been retained in most areas.

*P-34-005227 – City of Sacramento Well 159*

The subject resource is a water facility with two components owned and operated by the City of Sacramento. The well component is comprised of a utility building, prefabricated storage shed, electrical pulley system, and chemical treatment structure. A non-historical component of the resource is Sump 102, which is comprised of a modern utility building and three pumps.

*P-35-005251 - The Reclamation District 1000 Rural Historic Landscape District*

The RD 1000 Rural Historic Landscape District is significant at the State level for the period from 1911 to 1939. The establishment of the district as part of a regional reclamation plan resulted in the social, economic, and physical transformation of the region, from the original flood plain to a distinctly different open rural landscape consisting of levees, canals and roads intersecting to form large, blocks of fields. RD 1000 was among the first and largest of the major reclamation districts in the State. The features and spatial patterns that characterized the reclamation landscape during the period of significance are characteristic of the landscape today. The district was determined eligible for listing in the NRHP under Criterion A at the State level of significance as one of the earliest reclamation districts in the Sacramento Valley. The associated resources within

the APE are the RD 1000 East Levee (P-34-000490) and the West Levee of the Natomas East Main Drainage Canal (P-34-005349). Both are contributing elements of the district and are discussed above.

#### *P-34-005225 - Sacramento River Tribal Cultural Landscape*

This resource is an expansive Tribal Cultural Landscape (TCL) encompassing the whole of the Lower Sacramento River environment. The lands were known ethnographically as *Hoyo Sayo/Tah Sayo* by the Nisenan and as *Waka-ce/Waka-Ly* by the Plains Miwok. The primary character defining elements of the landscape are the waterways, tule habitats, fisheries, and other natural resources which would have sustained Native populations prehistorically and historically. A previous evaluation of the resource concluded that the landscape is eligible for listing on the NRHP/CRHR under Criterion A/1 for the landscape's association with the cultural practices and beliefs of the Nisenan and Plains Miwok, and the landscape's ability to help maintain the cultural identity of the living descendants and contribute to our understanding of the broader patterns of prehistory. The landscape has retained sufficient integrity of location, setting, feeling, and association to convey its significance.

#### Field Survey

An intensive pedestrian survey of the APE, including all project sites, was conducted by Natural Investigations archaeologist, Phil Hanes, on July 24, 2020. The APE was surveyed intensively using transects spaced no greater than 15-meters apart. During the survey, all visible ground surfaces were carefully examined for cultural material (e.g., flaked stone tools, tool-making debris, stone milling tools, or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), and historic-era debris (e.g., metal, glass, ceramics). Ground disturbances (e.g., animal burrows, dirt roads, etc.) were also visually inspected. A digital camera was used to take photographs of the APE, a Munsell Soil Color Chart used to record soil color, and a handheld BE-3300-GPS global positioning system (GPS) unit with sub-meter accuracy was used to record locational data.

Previously unrecorded prehistoric or historic cultural resources were not identified during the field survey. The seven previously recorded historic cultural resources were revisited and existing California Department of Parks and Recreation (DPR) 523 Series site forms were updated for each. Detailed results of the field survey are provided in Appendix C to this IS/MND.

#### **Standards of Significance**

For purposes of this IS/MND, cultural resources impacts may be considered significant if construction and/or implementation of the proposed project would result in one or more of the following:

- Cause a substantial change in the significance of a historical or archaeological resource as defined in CEQA Guidelines Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource; or
- A substantial adverse change in the significance of such resources.

Section 21083.2 of the statute and Section 15064.5 of the CEQA Guidelines provide instructions for a lead agency to consider the effects of Projects on historical resources and cultural resources. A historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (Public Resources Code [PRC] Section 21084.1), a

resource included in a local register of historical resources (PRC Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (PRC Section 15064.5[a][3]).

To be considered eligible for inclusion in the National Register of Historic Places (NRHP) or the CRHR, a resource must meet the following eligibility criteria:

- (1)/(A) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the U.S.;
- (2)/(B) It is associated with the lives of persons important to local, California, or national history;
- (3)/(C) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- (4)/(D) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. The resource must be at least 50 years old, except in exceptional circumstances.

### **Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies**

The Master EIR evaluated the potential effects of development under the 2035 General Plan on prehistoric and historic resources. See Chapter 4.4.

General Plan policies identified as reducing such effects call for identification of resources on project sites (Policy HCR 2.1.1), implementation of applicable laws and regulations (Policy HCR 2.1.2), early consultation with owners and land developers to minimize effects (Policy HCR 2.1.10), and encouragement of adaptive reuse of historic resources (Policy HCR 2.1.14). Demolition of historic resources is deemed a last resort (Policy HCR 2.1.15).

The Master EIR concluded that implementation of the 2035 General Plan would have a significant and unavoidable effect on historic resources and archaeological resources (Impacts 4.4-1, 2).

### **Answers to Checklist Questions**

#### Question A

As noted above, the SAFCA and USACE require the inspection of sump station outfalls that penetrate and cross major levees on a five-year cycle. As a result of this mandate, all five sump station facilities that would be improved as part of the proposed project have been subject to regular maintenance repairs and replacements in the past. Correspondingly, any project-related effects on known cultural resources would generally be restricted to areas previously disturbed or altered by recent facility maintenance and modernization. The project's potential effects related to each of the seven previously recorded cultural resources and one tribal cultural landscape within the APE are described below.

#### *P-34-000490 - Reclamation District 1000 East Levee*

At the time of the field survey, the approximately 18-foot segment of the *Reclamation District 1000 East Levee (P-34-000490)* within the APE at Sump 58 and the 22-foot segment at Sump 102

were under active construction. Related ground-disturbances included vegetation removal, heavy equipment traffic, and trench excavation. Both small segments of the levee have been thoroughly modernized and are well-maintained. Project-related work would occur within an approximately 18-foot segment of the levee at Sump 058. Improvements at Sump 058 would be limited to the replacement of 90 linear feet of pipe. Improvements to Sump 102 would be limited to installation of stairs on the waterside slope. All work is expected to occur at previously disturbed locations within the footprint of existing utilities. New impacts to the resource are not expected to result from the proposed work. Given the extent of past disturbances and modernization at the two locations, the proposed project is not expected to reduce the ability of the levee to convey its significance or change the levee's status as a contributing element of the RD 1000 Rural Historic Landscape District (P-34-005251).

*P-34-000508 - American River North Levee*

The American River North Levee (P-34-000508) has been determined ineligible for listing in the NRHP/CRHR. Unlike most of the levees within the APE, the areal extent of past maintenance-related disturbances and alterations to P-34-000508 has been considerable and the resource has not retained the integrity needed to convey its significance. The approximately 62-foot segment of the levee within the APE at Sump 151 just east of Lathrop Way has been modernized and is well-maintained. In 2009, the USACE obtained SHPO concurrence regarding the ineligibility of the resource. Furthermore, the Lathrop staging area is located entirely outside the footprint of the resource, approximately 200 feet to the northeast; thus, use of the staging area would not impact the resource in any way.

*P-34-000509 - American River South Levee*

Though the American River South Levee (P-34-000509) has been subject to standard repairs, the areal extent of major improvements has been limited; thus, the overall condition has not significantly changed as a result of past maintenance work. The approximately 20-foot segment of the levee within the APE at Sump 155 near 6007 Camellia Avenue is one of the few areas along the levee that has undergone marked alterations and improvements. Project-related work would occur within an approximately 20-foot segment of the levee at Sump 155. Improvements would include the replacement of a gate riser structure and 250 square feet of existing paving, construction of a retaining wall at the existing sump station, and the installation of a total of 531 feet of replacement piping. All work is expected to occur at previously disturbed locations within the footprint of existing utilities and structures. The La Riviera staging area is located entirely outside the footprint of the resource, approximately 650 feet to the south; thus, use of the staging area would not impact the resource in any way.

Given the nature of past disturbances and alterations of the small segment of the resource within the APE, the proposed project is not expected to reduce the levee's ability to convey significance or change the levee's eligibility for listing in the NRHP/CRHR (P-34-005251).

*P-34-001363 - Morrison Creek Levee*

Though the Morrison Creek Levee (P-34-001363) has been subject to standard repairs, the levee's condition has not significantly changed since the last record update completed in 2014. The approximately 34-foot segment of the levee within the APE at Sump 89, near 8357 Beach Lake Road, has been modernized and is well-maintained. As noted previously, the resource was determined to be ineligible for listing on the NRHP and the CRHR. Thus, disturbance in the vicinity of the levee as part of the proposed project would not result in a significant impact.

*P-34-005227 - City of Sacramento Well 159*

As part of the Cultural Resources Inventory, P-34-005227 was evaluated for inclusion in the NRHP/CRHR as follows:

- Criterion A/1: Background research does not indicate that the facility is associated with any events that have made a significant contribution to the broad patterns of national, regional, or California history and cultural heritage. The vast majority of the facility is entirely modern or has been substantially upgraded and altered, and the few remaining original components are of very late-historic construction. Known association between the facility and any historical events occurring during the period of the facility's early use does not exist. Thus, the resource is recommended as ineligible for NRHP/CRHR listing under Criterion A/1.
- Criterion B/2: The facility is not known to be associated with persons important in local, regional, or national history. Thus, the resource is recommended as ineligible for NRHP/CRHR listing under Criterion B/2.
- Criterion C/3: The facility does not appear to embody the distinctive characteristics of a type, period, region, or method of construction, or to represent the work of an important creative individual, or possesses high artistic values. The resource represents a type of water management facility that is extremely common throughout the Central Valley. The resource has also been subject to numerous historical and modern improvements which have left very few original components intact. Thus, the resource is recommended as ineligible for NRHP/CRHR listing under Criterion C/3.
- Criterion D/4: The informational value of the resource appears to be exhausted in historical source material, including various City of Sacramento technical documents and project plans, modern geospatial data, and existing site records that thoroughly document the salient features of the resource. Thus, the resource is recommended as ineligible for NRHP/CRHR listing under Criteria D/4.
- Integrity: As discussed above, the resource has been subject to extensive historical and modern alterations and improvements. Most of the components of Well 59 have been modified or replaced, including the utility building, storage shed, and treatment structure. Additionally, all components of Sump 102 are modern. The concrete staircase formerly leading from the station to the outfall has been demolished and removed since the last recording of the facility in 2017. The extensive modifications to the original 1968 well facility, the subsequent addition of the sump station in modern times, and the deconstruction and removal of various character-defining elements together have significantly reduced the integrity of the resource. Because the resource does not appear to be eligible for listing on either the NRHP or the CRHR under any criteria, the resource is not significant for NEPA or CEQA purposes and the question of integrity does not apply.

The condition of P-34-005227 has not significantly changed since the last recording, with the exception that the concrete stairs leading from the pump station to the outfall have since been demolished and removed. Only components of the well are original; all other elements of the facility have been added and/or altered extensively over the years. The proposed project would not alter or disturb any portion of the well. Instead, the project would involve the installation of stairs on the waterside slope. As discussed above, the resource was determined to be ineligible for listing on the NRHP and the CRHR. Thus, disturbance in the vicinity of the well as part of the proposed project would not result in a significant impact.

*P-34-005349 - West Levee of the Natomas East Main Drainage Canal*

As is the case with all of the levees discussed above, P-34-005349 has been subject to regular repairs, though the areal extent of major improvements has been limited, and the overall condition has not significantly changed as a result of maintenance work. The approximately 22-foot segment of the levee within the APE at Sump 102 near 300 Bowman Avenue has been subject to extensive past disturbances and was under active construction including trenching and vegetation clearing at the time of the field survey. Project improvements at the sump location would be limited to the installation of stairs on the waterside slope. Given the intensive past improvement to the small segment of the levee, proposed project-related work is not expected to reduce the levee's ability to convey significance or change the levee's status as a contributing element of the RD 1000 Rural Historic Landscape District (P-34-005251).

*P-34-005251 - The Reclamation District 1000 Rural Historic Landscape District*

The elements of the RD 1000 Rural Historic Landscape District within the APE are the RD 1000 East Levee (P-34-000490) and West Levee of the Natomas East Main Drainage Canal (P-34-005349). Both of resources are contributing elements of the district and are discussed individually above.

*P-34-005225 - Sacramento River TCL*

Given that the proposed project is restricted to the footprint of existing features of the built environment, such as sumps, pipelines, outfalls, and levees, the project is not expected to cause any significant new impacts to the natural resources comprising the Sacramento River TCL (P-34-005225).

*Conclusion*

Based on the above, seven discrete cultural resources are known to be present within the project APE. Of the seven resources, four are either individually eligible for listing in the NRHP/CRHR or are contributing elements of a NRHP/CRHR-eligible historic landscape district (P-34-000490, -000509, -005349, and -005225). Proposed project improvements at the four locations would be restricted to areas previously disturbed or modified by past facility maintenance and modernization work. Thus, project improvements would not affect the properties in a way that would alter any of the characteristics that qualify them for inclusion in the NRHP/CRHR or diminish their integrity. For the aforementioned reasons, no effect on historic properties or historical resources is expected.

The remaining three cultural resources (P-34-000508, -001363, and -005227) have been found ineligible for listing in the NRHP/CRHR. Cultural resources that have been determined ineligible for NRHP/CRHR inclusion do not constitute historic properties as defined under NHPA Section 300308 or historical resources as defined under CEQA Section 15064.5 and so require no further consideration. As none of these resources are archaeological or indigenous, the potential designations of unique archaeological resource as defined under CEQA Section 21083.2(g) and tribal cultural resources as defined under Public Resources Code Section 21074 do not apply.

Regarding unknown cultural resources, the potential exists for unknown resources to exist below the surface of the APE. If present, such resources could be disturbed as a result of the proposed ground-disturbing activities. Therefore, the proposed project could result in **additional significant environmental effects** related to damaging or destroying prehistoric cultural resources beyond

what was analyzed in the Master EIR. Implementation of Mitigation Measures 4-1 through 4-3 would mitigate the impact to a *less-than-significant* level.

#### Question B

Review of recent geologic mapping indicates the project APE is underlain by Holocene-age (11,650 years ago to the present) alluvium and basin deposits. Portions of the APE along the American River and eastern end of Arcade Creek are underlain by Late Holocene-age (4,000 years ago to the present) alluvium (Qha). Portions of the APE further west along Arcade Creek and along Steelhead Creek are underlain by slightly older Late Holocene-age basin deposits (Qhb). None of the geologic units known to contain fossils in the Central Valley are present within the APE. Holocene-age deposits (Qha and Qhb), such as those along the American River and Arcade and Steelhead Creeks, are considered to have a low paleontological resource potential. Because the fossilization processes take place over millions of years, such geologically immature deposits are unlikely to have fossilized the remains of organisms. Given that fossils or unique geologic features have not been recorded within the APE, and the underlying alluvium and basin deposits are unlikely to contain fossilized remains, the paleontological resource sensitivity within the APE based on the applicable Society for Vertebrate Paleontology (SVP) criteria is estimated to be low. Nonetheless, while unlikely, the potential exists for unknown paleontological resources to be uncovered during ground-disturbing activities associated with the proposed project. Therefore, the proposed project could result in ***additional significant environmental effects*** related to directly or indirectly destroying unique paleontological resources beyond what was analyzed in the Master EIR. Implementation of Mitigation Measure 4-4 would mitigate the impact to a *less-than-significant* level.

#### **Mitigation Measures**

Implementation of the following mitigation measures would reduce potential impacts related to cultural resources to *less-than-significant* levels.

##### **4-1            *Conduct Cultural Resources and Tribal Cultural Resources Sensitivity and Awareness Training Program Prior to Ground-Disturbing Activities.***

*The City shall require the project contractor to provide a cultural resources and tribal cultural resources sensitivity and awareness training program (Worker Environmental Awareness Program [WEAP]) for all personnel involved in project construction, including field consultants and construction workers. The WEAP shall be developed in coordination with an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology, as well as culturally affiliated Native American tribes. The City may invite Native American representatives from interested culturally affiliated Native American tribes to participate. The WEAP shall be conducted before any project-related construction activities begin at the project site. The WEAP shall include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The WEAP shall also describe appropriate avoidance and impact minimization measures for cultural resources and tribal cultural resources that could be located at the project sites and shall outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The WEAP shall emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of*

*significance to Native Americans and will discuss appropriate behaviors and responsive actions, consistent with Native American tribal values.*

**4-2      *Archaeological and Native American Monitoring and the Discovery of Cultural Materials and/or Human Remains.***

*Prior to authorization to proceed, a Secretary of the Interior-qualified archaeologist shall prepare a Cultural Resources Monitoring Plan. Monitoring shall be required during initial ground-disturbing activities, according to a schedule outlined in the Cultural Resources Monitoring Plan. The plan shall include (but not be limited to) the following components:*

- *Person(s) responsible for conducting monitoring activities, including an archaeological monitor and a Native American monitor;*
- *Person(s) responsible for overseeing and directing the monitors;*
- *How the monitoring shall be conducted and the required format and content of monitoring reports, including schedule for submittal of monitoring reports and person(s) responsible for review and approval of monitoring reports;*
- *Protocol for notifications in case of encountering cultural resources, as well as methods of dealing with the encountered resources (e.g., collection, identification, curation);*
- *Methods to ensure security of cultural resources sites, including protocol for notifying local authorities (i.e. Sheriff, Police) should site looting and other illegal activities occur during construction.*

*During the course of the monitoring, the archaeologist and Native American monitor may adjust the frequency – from continuous to intermittent – based on the conditions and professional judgment regarding the potential to impact cultural and tribal cultural resources.*

**4-3      *In the Event that Tribal Cultural Resources Are Discovered During Construction, Implement Procedures to Evaluate Tribal Cultural Resources and Implement Avoidance and Minimization Measures to Avoid Significant Impacts.***

*If archaeological resources, or tribal cultural resources, are encountered in the project area during construction, the following performance standards shall be met prior to continuance of construction and associated activities that may result in damage to or destruction of tribal cultural resources:*

- *Each resource will be evaluated for California Register of Historical Resources (CRHR) eligibility through application of established eligibility criteria (California Code of Regulations 15064.636), in consultation with consulting Native American Tribes.*

*If a tribal cultural resource is determined to be eligible for listing on the CRHR, the City will avoid damaging effects to the resource in accordance with California PRC Section 21084.3, if feasible. If the City determines that the project may cause a significant impact to a tribal cultural resource, and measures are not otherwise*

*identified in the consultation process, the following are examples of mitigation capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to the resource. These measures may be considered to avoid or minimize significant adverse impacts and constitute the standard by which an impact conclusion of less-than significant may be reached:*

- i. Avoid and preserve resources in place, including, but not limited to, planning construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.*
- ii. Treat the resource with culturally appropriate dignity taking into account the Tribal cultural values and meaning of the resource, including, but not limited to, the following:*
  - 1. Protect the cultural character and integrity of the resource.*
  - 2. Protect the traditional use of the resource.*
  - 1. Protect the confidentiality of the resource.*
  - 2. Establish permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or using the resources or places.*
  - 3. Rebury the resource in place.*
  - 4. Protect the resource.*

*Avoidance and preservation in place is the preferred manner of mitigating impacts to tribal cultural resources and archaeological resources and will be accomplished, if feasible, by several alternative means, including:*

- Planning construction to avoid tribal cultural resources, archaeological sites and/ or other resources; incorporating sites within parks, green-space or other open space; covering archaeological sites; deeding a site to a permanent conservation easement; or other preservation and protection methods agreeable to consulting parties and regulatory authorities with jurisdiction over the activity.*
- Recommendations for avoidance of Tribal Cultural Resources and Native American archaeological sites will be reviewed by the City representative, interested culturally affiliated Native American Tribes and other appropriate agencies, in light of factors such as costs, logistics, feasibility, design, technology and social, cultural and environmental considerations, and the extent to which avoidance is consistent with project objectives. Avoidance and design alternatives may include realignment within the project area to avoid cultural resources, modification of the design to eliminate or reduce impacts to cultural resources or modification or realignment to avoid highly significant features within a cultural resource.*
- Native American Representatives from interested culturally affiliated Native American Tribes will be allowed to review and comment on these analyses and shall have the opportunity to meet with the City representative and its representatives who have technical expertise to identify and recommend feasible avoidance and design alternatives, so*

*that appropriate and feasible avoidance and design alternatives can be identified.*

- *If the discovered resource can be avoided, the construction contractor(s), will install protective fencing outside the site boundary, including a 100 foot buffer area, before construction restarts. The boundary of a Tribal Cultural Resource or a Native American archaeological site will be determined in consultation with interested culturally affiliated Native American Tribes and such Tribes will be invited to monitor the installation of fencing. Use of temporary and permanent forms of protective fencing will be determined in consultation with Native American Representatives from interested culturally affiliated Native American Tribes.*
- *The construction contractor(s) will maintain the protective fencing throughout construction to avoid the site during all remaining phases of construction. The area will be demarcated as an “Environmentally Sensitive Area”.*
- *Native American Representatives from interested culturally affiliated Native American Tribes and the City representative will also consult to develop measures for long term management of any discovered Tribal Cultural Resources. Consultation will be limited to actions consistent with the jurisdiction of the City and taking into account ownership of the subject property. To the extent that the City has jurisdiction, routine operation and maintenance within Tribal Cultural Resources retaining tribal cultural integrity shall be consistent with the avoidance and minimization standards identified in this mitigation measure.*

*To implement these avoidance and minimization standards, the following procedures shall be followed in the event of the discovery of a tribal cultural resource:*

- *If any tribal archaeological resources or Native American materials, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or Native American architectural remains or articulated or disarticulated human remains are discovered on the project site, work shall be suspended within 100 feet of the find (based on the apparent distribution of cultural resources), and the construction contractor shall immediately notify the project’s City representative.*
- *The City shall coordinate the investigation of the find with a qualified (meeting the Secretary of the Interior’s Qualification Standards for Archaeology) archaeologist approved by the City and with one or more interested culturally affiliated Native American Tribes that respond to the City’s invitation. As part of the site investigation and resource assessment, the City and the archaeologist shall consult with interested culturally affiliated Native American Tribes to assess the significance of the find, make recommendations for further evaluation and treatment as necessary and provide proper management recommendations should potential impacts to the resources be determined by the City to be significant. A written report detailing the site assessment, coordination activities, and management recommendations shall be provided to the City representative by the qualified archaeologist. These recommendations will be documented in the project record. For any*

- recommendations made by interested culturally affiliated Native American Tribes which are not implemented, a justification for why the recommendation was not followed will be provided in the project record.*
- *The City shall consider management recommendations for tribal cultural resources, including Native American archaeological resources, that are deemed appropriate, including resource avoidance or, where avoidance is infeasible in light of project design or layout or is unnecessary to avoid significant effects, preservation in place or other measures. The contractor shall implement any measures deemed by the City to be necessary and feasible to avoid or minimize significant impacts to the cultural resources. These measures may include inviting an interested culturally affiliated Native American Tribe to monitor ground-disturbing activities whenever work is occurring within 100 feet of the location of a discovered Tribal Cultural Resource or Native American archaeological site.*
  - *If an adverse impact to tribal cultural resources, including Native American archaeological resources, occurs then consultation with interested culturally affiliated Tribes regarding mitigation contained in the Public Resources Code sections 21084.3(a) and (b) and CEQA Guidelines section 15370 shall occur, in order to identify mitigation for the impact.*

4-4

***Implement Procedures in the Event of the Inadvertent Discovery of Native American Human Remains.***

*If an inadvertent discovery of Native American human remains is made at any time during project-related construction activities or project planning, the City will implement the procedures listed in Mitigation Measure 4-1. The following performance standards shall be met prior to implementing or continuing actions such as construction, that may result in damage to or destruction of human remains: In accordance with the California Health and Safety Code, if human remains are encountered during ground-disturbing activities, the City shall immediately halt potentially damaging excavation in the area of the burial and notify the Sacramento County Coroner and a professional archaeologist to determine the nature of the remains. The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (California Health and Safety Code Section 7050.5[b]). If the Coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]). After the Coroner's findings have been made, the archaeologist and the NAHC-designated Most Likely Descendant (MLD), in consultation with the landowner, shall determine the ultimate treatment and disposition of the remains. The responsibilities of the City for acting upon notification of a discovery of Native American human remains are identified in California PRC Section 5097.9 et seq.*

*If the human remains are of historic age and are determined to be not of Native American origin, the City will follow the provisions of the California Health and Safety Code Section 7000 (et seq.) regarding the disinterment and removal of non-Native American human remains.*

- 4-5      *Should paleontological resources be identified during any phase of project implementation, the construction manager shall cease operation at the site of the discovery and immediately notify the City of Sacramento Community Development Department. A qualified paleontologist shall be retained to salvage of the resource following the standards of the Society for Vertebrate Paleontology (SVP) and curation with a certified repository such as the California Museum of Paleontology (UCMP). Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.*

## **Findings**

All additional significant environmental effects of the proposed project relating to cultural resources can be mitigated to a less-than-significant level. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>5. GEOLOGY AND SOILS</b>  A) Would the project allow a project to be built that will either introduce geologic or seismic hazards by allowing the construction of the project on such a site without protection against those hazards?			X

## Environmental Setting

### *Seismicity*

The Sacramento 2035 General Plan Master EIR identifies all of the City of Sacramento as being subject to potential damage from earthquake groundshaking at a maximum intensity of VII on the Modified Mercalli scale (SGP Master EIR, Table 6.5-6). The closest potentially active faults to the project area include the Foothills Fault System, located approximately 23 miles from Sacramento; the Great Valley fault, located 26 miles from Sacramento; Concord-Green Valley Fault, located approximately 38 miles from Sacramento; and the Hunting Creek-Berryessa Fault, located 38 miles from Sacramento. The Foothills Fault System is considered capable of generating an earthquake with a Richter-Scale magnitude of 6.5; the Great Valley Fault is capable of generating an earthquake with a magnitude of 6.8; the Concord-Green Valley fault is capable of generating an earthquake with a magnitude 6.9, and the Hunting Creek-Berryessa Fault could generate a 6.9 magnitude earthquake. A major earthquake on any of these faults could cause strong groundshaking in the project area.

### *Topography*

Terrain in the City of Sacramento features very little relief and the potential for slope instability within the City is minor due to the relatively flat topography of the area. The primary topographical features within each of the project sites are existing levee structures.

### *Regional Geology*

The City of Sacramento lies near the southern end of the Sacramento Valley portion of the Great Valley Geomorphic Province. The Great Valley is bordered to the north by the Cascade and the Klamath Ranges, to the west by the Coast Ranges, to the east by the Sierra Nevada Mountain Range, and to the south by the transverse ranges. The valley was formed by the tilting of the Sierran Block, with the western side dropping to form the valley and the eastern side being uplifted to the form the Sierra Nevada Mountain Range. The valley is characterized by a thick sequence of sediments derived from erosion of the adjacent Sierra Nevada Mountain Range to the east and the Coast Range to the west. These sedimentary rocks are mainly Cretaceous in age. The depths of the sediments vary from a thin veneer at the edges of the valley to depths in excess of 50,000 feet near the western edge of the valley. In the vicinity of the City, these sediments are approximately 15,000 feet deep.

## **Standards of Significance**

For the purposes of this IS/MND, an impact is considered significant if it allows a project to be built that will either introduce geologic or seismic hazards by allowing the construction of the project on such a site without protection against those hazards.

## **Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies**

Chapter 4.5 of the Master EIR evaluated the potential effects related to seismic hazards, underlying soil characteristics, slope stability, erosion, existing mineral resources and paleontological resources in the City. Implementation of identified policies in the 2035 General Plan reduced all effects to a less-than-significant level. Policy EC 1.1.1 requires regular review of the City's seismic and geologic safety standards, and Policy EC 1.1.2 requires geotechnical investigations for project sites to identify and respond to geologic hazards, when present.

## **Answers to Checklist Questions**

### Question A

#### *Geologic Hazards*

The project sites are not located on or in the vicinity of an Alquist-Priolo Fault Zone; therefore, the potential for fault rupture on the project sites is considered to be low. In addition, the project sites are located in areas of the City of Sacramento that are topographically flat. Seismically-induced landslides or landslides induced by soil failure typically occur on slopes with gradients of 30 percent or higher. Thus, the potential for seismically-induced or soil failure landslides at the project sites is relatively limited, and would not be exacerbated by the proposed improvements.

Soil liquefaction is a phenomenon primarily associated with the saturated soil layers located close to the ground surface. These soils lose strength during ground shaking generated by seismic events. Due to the loss of strength, the soil acquires "mobility" sufficient to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sands that lie relatively close to the ground surface. However, loose sands that contain a significant number of fines (minute silt and clay fraction) may also liquefy. The project sites are not located within a State-Designated Seismic Hazard Zone for liquefaction. Although the project sites are not within a State-Designated Seismic Hazard Zone, areas within the Sacramento region that include unconsolidated water-saturated sediments may experience liquefaction during seismic events. Thus, the potential for liquefaction to occur at the project sites during seismic events may exist. However, the levee structures within which the proposed improvements would occur have been engineered to withstand seismic events. Given that the proposed improvements would be limited to pipe replacement and various other minor improvements at existing sump station facilities, the proposed project would not exacerbate potential soil liquefaction risks.

Consistent with the conclusions of the Master EIR, the proposed project would not result in new significant impacts related to seismic hazards.

#### *Soil Hazards*

All on-site improvements would be required to comply with CBSC regulations governing seismically-resistant construction and construction techniques to protect people and property

from hazards associated with excavation cave-ins and falling debris/construction materials. Chapter 18 of the CBC provides regulations regarding site demolition, excavations, foundations, retaining walls, and grading, including, but not limited to, requirements for seismically-resistant design, foundation investigation, stable cut and fill slopes, and excavation, shoring, and trenching. The CBSC also defines different building regions in California and ranks them according to their seismic hazard potential. Seismic Zone 1 has the least seismic potential and Zone 4 has the highest seismic potential. The City of Sacramento is in Seismic Zone 3; accordingly, the proposed improvements would be required to comply with all design standards applicable to Seismic Zone 3.

Chapter 15.88 of the Municipal Code (Grading and Erosion and Sediment Control) is used to regulate grading on property within the City of Sacramento to safeguard life, limb, health, property and the public welfare; to avoid pollution of watercourses with nutrients, sediments, or other materials generated by surface runoff from construction activities; to comply with the City's National Pollution Discharge Elimination System Permit; and, to ensure graded sites within the City comply with all applicable City standards and ordinances. Given that the proposed improvements would consist of repair and maintenance of levees for local drainage control performed by a government agency, the proposed project would qualify for an exemption from the Grading and Erosion and Sediment Control Ordinance per Section 15.88.070(J) of the City's Municipal Code. Nonetheless, for all project sites, BMPs would be implemented to prevent debris from entering waterways. Standard City BMPs include the use of straw bales, sandbags, gravel traps, and filters; erosion control measures such as vegetation and physical stabilization; and sediment control measures such as fences, dams, barriers, berms, traps, and basins.

New development on the project sites would not include the use of septic tanks or alternative wastewater disposal systems; therefore, impacts would not occur due to inadequate soils being able to support such wastewater storage/disposal systems.

### *Levee Stability*

As mandated by the SAFCA and the USACE, sump station outfalls that penetrate and cross major levees within the City of Sacramento are inspected on a five-year cycle. The proposed project entails the complete replacement of the pump discharge for three drainage sump station facilities and partial improvements at two drainage sump station facilities. The proposed project would not alter current operations and maintenance at the sump station facilities.

The extents of the complete discharge pipe replacements include replacement from the pump discharge across the levee to the outfall structure, including through the headwall. The area around the existing pipes would be excavated and the pipes would be cored out through the headwall on the waterside of the levee. The outfall structure itself would not be replaced or reconstructed as part of the proposed project. To remove pipes in the levee, trenches that are approximately twice the width of each pipe would be excavated from the landside to the waterside of the levee (for pipes that are close together, one wider trench may be used to accommodate multiple pipes) below the pipes. The fill beneath the pipes would be built back up to the bottom of the new pipes, which may be installed at a higher elevation than the removed pipes. Where installation of positive closure vaults at the hinge point of the levee is required, the vault area would be excavated to the bottom of the levee, then built back up from the bottom of the vault. The vault is poured, cast-in-place concrete and would be partially buried.

The partial improvements at Sumps 058 and 102 exclude any improvements within the levee section. Work would be limited to installation of stairs on the waterside slopes.

The proposed project would not require import or export of soils from the project sites. Any soils from the existing levee requiring excavation as part of the proposed project would be used to backfill the excavated area upon completion of the pipe replacements. Given that the existing soils have been previously determined to be suitable for the stability of the existing levees, use of such soils as backfill material would not result in new or exacerbated soil stability issues at the levees. Based on the above, the proposed project would not adversely affect the geotechnical stability of the levees.

### *Conclusion*

Based on the above, the proposed project would provide sufficient protections to ensure that new or exacerbated geologic or seismic hazards do not occur. In addition, the project would not adversely affect the stability of the City's levee system. As such, ***no additional significant environmental effects*** would occur beyond what was analyzed in the Master EIR.

### **Mitigation Measures**

None required.

### **Findings**

The proposed project would have no additional project-specific environmental effects relating to Geology and Soils. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>6. HAZARDS</b> Would the project:			
A) Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated soil during construction activities?			X
B) Expose people (e.g., residents, pedestrians, construction workers) to asbestos-containing materials or other hazardous materials?			X
C) Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated groundwater during dewatering activities?			X

### Environmental Setting

The City of Sacramento Fire Department is the first responder for fire, accident, and hazardous materials emergencies in the project region. The Department maintains two Hazardous Materials (HazMat) Program teams at fire stations in the project region; Truck 5 is stationed in Downtown at 8<sup>th</sup> and Broadway, and Truck 20 is stationed at Arden Way and Del Paso Boulevard. The HazMat Teams respond to hazardous materials incidents. All members of the HazMat Teams are trained in accordance with National Fire Protection Association standards and are certified by the California Specialized Training Institute as Hazardous Materials Specialists. The teams would be expected to respond to any hazardous materials release at the project sites.

The project sites, nor the proposed staging areas are not currently used for storage of any hazardous materials.

### Standards of Significance

For the purposes of this IS/MND, an impact is considered significant if the proposed project would:

- Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated soil during construction activities;
- Expose people (e.g., residents, pedestrians, construction workers) to asbestos-containing materials or other hazardous materials; or
- Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated groundwater during dewatering activities.

### Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies

The Master EIR evaluated effects of development on hazardous materials, emergency response and aircraft crash hazards (see Chapter 4.6). Implementation of the General Plan may result in the exposure of people to hazards and hazardous materials during construction activities, and exposure of people to hazards and hazardous materials during the life of the General Plan. Impacts identified related to construction activities and operations were found to be less than significant. Policies included in the 2035 General Plan, including PHS 3.1.1 (investigation of sites

for contamination) and PHS 3.1.2 (preparation of hazardous materials actions plans when appropriate) were effective in reducing the identified impacts.

## **Answers to Checklist Questions**

### Question A

The project sites are not included on a list of hazardous materials sites compiled by the County pursuant to Government Code 65962.5.<sup>8</sup> Known contaminated soils do not occur on the project sites according to the Department of Toxic Substances Control. In addition, the proposed pipe replacements and associated improvements would occur primarily within areas that have been subject to prior disturbance associated with levee maintenance and stormwater drainage improvements. Accordingly, the proposed improvements would not result in the exposure of residents, pedestrians, construction workers, or other persons in the project area to contaminated soil. **No additional significant environmental effects** would occur beyond what was analyzed in the Master EIR.

### Question B and C

Naturally-occurring asbestos (NOA) exists in many parts of California. Earth disturbing activities, such as those associated with construction activities, could release NOA into the air, if NOA is present in the area of disturbance. According to mapping prepared by the California Geological Survey, the only area within Sacramento County that is likely to contain NOA is eastern Sacramento County; thus, the project sites are not located in an area identified as likely to contain NOA.<sup>9</sup> In addition, the proposed project would not include demolition of any structures that could have been constructed with asbestos-containing materials. Therefore, the proposed project is not anticipated to result in the release of, or exposure of persons to, asbestos.

Furthermore, ground-disturbing activities associated with the proposed project are not anticipated to reach the groundwater table. While dewatering would be required during pipeline replacement at Sump 089 along Morrison Creek, only surface water would be dewatered.

Accordingly, the proposed project would not result in the exposure of residents, pedestrians, construction workers, or other persons in the project area to asbestos-containing materials, contaminated groundwater, or other hazardous waste. **No additional significant environmental effects** would occur beyond what was analyzed in the Master EIR.

## **Mitigation Measures**

None required.

## **Findings**

The proposed project would have **no additional project-specific environmental effects** relating to Hazards. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

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<sup>8</sup> State Water Resources Control Board. *GeoTracker*. Available at: <https://geotracker.waterboards.ca.gov/>. Accessed September 2020.

<sup>9</sup> Department of Conservation, California Geological Survey. *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California*. 2006.

**SUMP STATION FACILITIES IMPROVEMENT PROJECT**  
INITIAL STUDY

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>7. HYDROLOGY AND WATER QUALITY</b> Would the project:			
A) Substantially degrade water quality and violate any water quality objectives set by the State Water Resources Control Board, due to increases in sediments and other contaminants generated by construction and/or development of the project?			X
B) Substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood?			X

### Environmental Setting

The City of Sacramento's Grading Ordinance requires that development projects comply with the requirements of the City's Stormwater Quality Improvement Plan (SQIP). The SQIP outlines the priorities, key elements, strategies, and evaluation methods of the City's Stormwater Management Program. The Program is based on the NPDES municipal stormwater discharge permit. The comprehensive Program includes pollution reduction activities for construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations. In addition, before the onset of any construction activities, where the disturbed area is one acre or more in size, projects are required to obtain coverage under the NPDES General Construction Permit and include erosion and sediment control plans. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater and other non-point source runoff. Measures that reduce or eliminate post-construction-related water quality problems range from source controls, such as reduced surface disturbance, to treatment of polluted runoff, such as detention or retention basins. The City's SQIP and the *Stormwater Quality Design Manual for the Sacramento Region* (Sacramento Stormwater Quality Partnership 2014) include BMPs to be implemented to mitigate impacts from new development and redevelopment projects.

Section 13.08.145 of the Sacramento City Municipal Code (Mitigation of drainage impacts; design and procedures manual for water, sanitary sewer, storm drainage, and water quality facilities) requires that when a property would contribute drainage to the storm drain system or combined sewer system, all stormwater and surface runoff drainage impacts resulting from the improvement or development must be fully mitigated to ensure that the improvement or development does not affect the function of the storm drain system or combined sewer system, and that an increase in flooding or in water surface elevation that adversely affects individuals, streets, structures, infrastructure, or property does not occur.

### Standards of Significance

For purposes of this IS/MND, impacts due to hydrology and water quality may be considered significant if construction and/or implementation of the proposed project would result in the following impacts that remain significant after implementation of General Plan policies:

- Substantially degrade water quality and violate any water quality objectives set by the State Water Resources Control Board, due to increases in sediments and other contaminants generated by construction and/or development of the proposed project; or

- Substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood.

### **Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies**

Chapter 4.7 of the Master EIR evaluates the potential effects of the 2035 General Plan as they relate to surface water, groundwater, flooding, stormwater and water quality. Potential effects include water quality degradation due to construction activities (Impacts 4.7-1, 4.7-2), and exposure of people to flood risks (Impacts 4.7-3). Policies within the 2035 General Plan, include a directive for regional cooperation (Policies ER 1.1.2, EC 2.1.1), comprehensive flood management (Policy EC 2.1.23), and construction of adequate drainage facilities with new development (Policy ER 1.1.1 to ER 1.1.10). The Master EIR concluded that implementation of such policies would reduce all impacts to a less-than-significant level.

### **Answers to Checklist Questions**

#### Question A

Construction activities associated with implementation of the proposed sump station facility improvements have the potential to result in discharge of sediment or other pollutants to the waterways adjacent to the improvement areas. This potential will be lessened by the fact that, for all sumps, work would be completed during the summer months outside the flood season for each location.

The SWRCB adopted a statewide NPDES permit for storm water discharges associated with construction activity. Dischargers whose projects disturb one or more acres of soil are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation.

Because the proposed project would involve a total excavation area of less than one acre, a SWPPP would not be required as part of the proposed project. However, for all sites, BMPs would be implemented to prevent debris from entering waterways. Standard City BMPs include the use of straw bales, sandbags, gravel traps, and filters; erosion control measures such as vegetation and physical stabilization; and sediment control measures such as fences, dams, barriers, berms, traps, and basins. City staff inspects and enforces the erosion, sediment and pollution control requirements in accordance with City codes.

Implementation of BMPs would ensure that construction activities associated with the proposed project would not result in substantial degradation to water quality or violation of any water quality objectives due to increases in sediments and other contaminants. Therefore, ***no additional significant environmental effect*** would occur related to substantial degradation of water quality or violation of any water quality objectives set by the SWRCB, due to increases in sediments and other contaminants generated during implementation of the proposed sump station improvements.

#### Question B

The floodplain is the area that is inundated during a flood event and is often physically discernable as a broad, flat area created by historical floods. In addition to the FEMA, the SAFCA was formed

to address the Sacramento area's vulnerability to catastrophic flooding. As mandated by the SAFCA and the USACE, sump station outfalls that penetrate and cross major levees within the City of Sacramento are inspected on a five-year cycle.

Consistent with SAFCA and USACE requirements, the proposed project would include the complete replacement of the pump discharge pipes for three drainage sump station facilities and partial improvements at two drainage sump station facilities, in addition to other minor improvements.

The Central Valley Flood Protection Board will need to issue an encroachment permit for the completion of work related to the sumps. California Code of Regulations, Title 23, Section 15, includes a list of potential impacts that could be cause for reasons of denial of a permit from the CVFPB. The following section addresses Title 23, Section 15, in relation to the proposed sump improvements. As stated in Section 15(a), the board may deny a permit for any of the following reasons:

- (1) Jeopardize directly or indirectly the physical integrity of levees or other works;

*Permanent:* The integrity of the levees will be maintained after construction is complete. There is no permanent impact to integrity of the levees with proposed work.

*Temporary:* During construction at Sump 155 a deep levee excavation is required to replace the gravity pipe and install the gate riser structure. This work will be performed during dry season; therefore, there will be no impact to levee integrity during flood season.

- (2) Obstruct, divert, redirect, or raise the surface level of design floods or flows, or the lesser flows for which protection is provided;

*Permanent:* As part of the American River Common Features Project, the USACE is installing up to 11 miles of additional bank protection over the next three years. Sump 155 is within the USACE site 2-1, which is the first construction project on the Lower American River along the west bank. The erosion protection work includes 5,500 feet of stream bank protection and stabilization of the existing levee to protect critical infrastructure against the effects of erosion during large flood events. Both projects are anticipated for construction in 2022; therefore, the City's design efforts have been coordinated with the USACE erosion protection details that will be impacted by City improvements. The City has worked in collaboration with the USACE Erosion – Lower American River (LAR) Project design team to include sections of their riprap armoring plan at Sump 155. This includes a bench of riprap beneath the OHWM. The total hydraulic blockage under the 200-year WSE for Sump 155 improvements is 1.7 percent of the overall cross-section of the American River; however, USACE's LAR Project intends to mitigate this impact by reducing the fill on the waterside slope of the east bank levee so that there is an overall net zero change to the cross section of the channel. There will be no impact to the design flood elevation after USACE LAR Project.

Blockage calculations were prepared by Peterson Brustad Inc. to demonstrate that percentages would not exceed one percent. The calculations are shown in Table 9.

<b>Table 9</b> <b>Hydraulic Blockage Summary By Sump</b>		
<b>Sump No.</b>	<b>Hydraulic Blockage</b>	<b>Notes</b>
S155	1.87%	The City's project was developed in collaboration with the USACE Erosion Lower American River (LAR) Project design team to include sections of their riprap armoring plan at Sump 155. This includes a bench of riprap beneath the ordinary high water mark. USACE's LAR Project intends to mitigate this impact by reducing the fill on the waterside slope of the east bank levee so that there is an overall net zero change to the cross section of the channel. There will be no permanent impact to the hydraulic cross section.
S089	0.643%	Hydraulic blockage is less than 1%
S151	0%	All improvements below the 200-year WSE are below grade and do not impact the hydraulic cross section
<i>Source: Peterson Brustad Inc., February 2021</i>		

*Temporary:* A temporary cofferdam will be installed at Sump 089, which will temporarily restrict flow in the waterway; however, this work will only occur during the dry season, as required by Mitigation Measure 3-1(b). There will be no impact to the design flood elevation during the flood season.

- (3) Cause significant adverse changes in water velocity or flow regimen;

*Permanent:* The only potential impact (Sump 155) is being mitigated with a net zero impact (reference discussion for item 2). There will be no permanent impact on flow.

*Temporary:* A temporary cofferdam will be installed at Sump 089, which will temporarily restrict flow in the waterway; however, this work will only occur during the dry season, as required by Mitigation Measure 3-1(b). There will be no impact to flow during the flood season.

- (4) Impair the inspection of floodways or project works;

*Permanent:* There will be no adverse impacts to the ability to inspect project works. With respect to Sump 089, the improvements would result in improved inspection because the outfall structure will no longer be submerged.

*Temporary:* The levee crown will only be disturbed during construction, which will be restricted to the dry season. There will be no impact to inspection abilities during flood season.

- (5) Interfere with the maintenance of floodways or project works;

*Permanent:* There will be no adverse impacts to the maintenance of floodways or project works.

*Temporary:* The levee crown will only be disturbed during construction, which will be restricted to the dry season. No impact to maintenance would occur during flood season.

- (6) Interfere with the ability to engage in flood fighting, patrolling, or other flood emergency activities;

*Permanent:* There will be no adverse impacts to the ability to flood fight or perform emergency activities.

*Temporary:* The levee crown will only be disturbed during construction, which will be restricted to dry season. No impact to flood-related activities would occur during flood season.

- (7) Increase the damaging effects of flood flows; or

*Permanent:* There will be no permanent impacts that would increase the damaging effects of flood flows.

*Temporary:* There will be no temporary impacts that would increase the damaging effects of flood flows.

- (8) Be injurious to, or interfere with, the successful execution, functioning, or operation of any adopted plan of flood control.

*Permanent:* There will be no permanent impacts that would interfere with any adopted plan of flood control.

*Temporary:* There will be no temporary impacts that would interfere with any adopted plan of flood control.

- (9) Adversely affect the State Plan of Flood Control, as defined in the Water Code.

*Permanent:* There will be no permanent impacts that would affect the State Plan of Flood Control.

*Temporary:* There will be no temporary impacts that would affect the State Plan of Flood Control.

In addition, Section 131, Vegetation, of Title 23, includes requirements for vegetation removal along levees. The majority of standards pertain to restrictions related to proposed vegetation plantings, in particular, plantings on the levee crown. The proposed project does not include any planting of vegetation. A maximum of two trees may need to be removed as a result of the proposed improvements to Sump 089 and up to four trees at Sump 155; and the removal will be done in accordance with standards set forth in Title 23, Section 131.

Based on the above, the proposed project would not result in reasons for CVFPB permit denial, set forth in CCR Title 23, Section 15, nor place housing or structures within a 100-year flood hazard area, and **no additional significant environmental effect** would occur relative to flooding impacts analyzed in the Master EIR.

### **Mitigation Measures**

None required.

## **Findings**

The proposed project would have no additional project-specific environmental effects relating to Hydrology and Water Quality. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

**SUMP STATION FACILITIES IMPROVEMENT PROJECT**  
INITIAL STUDY

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>8. NOISE</b> Would the project:			
A) Result in exterior noise levels in the project area that are above the upper value of the normally acceptable category for various land uses due to the project's noise level increases?			X
B) Result in residential interior noise levels of 45 dBA L <sub>dn</sub> or greater caused by noise level increases due to the project?			X
C) Result in construction noise levels that exceed the standards in the City of Sacramento Noise Ordinance?			X
D) Permit existing and/or planned residential and commercial areas to be exposed to vibration-peak-particle velocities greater than 0.5 inches per second due to project construction?			X
E) Permit adjacent residential and commercial areas to be exposed to vibration peak particle velocities greater than 0.5 inches per second due to highway traffic and rail operations?			X
F) Permit historic buildings and archaeological sites to be exposed to vibration-peak-particle velocities greater than 0.2 inches per second due to project construction and highway traffic?			X

## Environmental Setting

### Noise

Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard by the human ear. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz). Discussing sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel (dB) scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference defined as 0 dB. Other sound pressures are compared to the reference pressure and the logarithm is taken to keep the numbers in practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. A strong correlation exists between the way humans perceive sound and A-weighted sound levels. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment for community exposures. All sound levels expressed as dB in this section are A-weighted sound levels, unless noted otherwise.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level ( $L_{eq}$ ), over a given

time period (usually one hour). The  $L_{eq}$  is the foundation of the composite noise descriptors, day-night average level ( $L_{dn}$ ) and the community noise equivalent level (CNEL), and shows very good correlation with community response to noise for the average person. The median noise level descriptor, denoted  $L_{50}$ , represents the noise level which is exceeded 50 percent of the hour. In other words, half of the hour ambient conditions are higher than the  $L_{50}$  and the other half are lower than the  $L_{50}$ .

The  $L_{dn}$  is based upon the average noise level over a 24-hour day, with a +10 dB weighting applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because  $L_{dn}$  represents a 24-hour average,  $L_{dn}$  tends to disguise short-term variation in the noise environment. Where short-term noise sources are an issue, noise impacts may be assessed in terms of maximum noise levels, hourly averages, or other statistical descriptors.

Another common descriptor is the CNEL. The CNEL is similar to the  $L_{dn}$ , except CNEL has an additional weighting factor. Both average noise energy over a 24-hour period. The CNEL applies a +5 dB weighting to events that occur between 7:00 PM and 10:00 PM, in addition to the +10 dB weighting between 10:00 PM and 7:00 AM associated with  $L_{dn}$ .

### Vibration

Vibration is like noise in that vibration involves a source, a transmission path, and a receiver. While vibration is related to noise, vibration differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and a frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating. Vibration can be measured in terms of acceleration, velocity, or displacement. Vibration magnitude is measured in vibration decibels (VdB) relative to a reference level of 1 micro-inch per second peak particle velocity (ppv), the human threshold of perception. The background vibration level in residential areas is usually 50 VdB or lower. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible. The range of environmental interest is typically from 50 VdB to 90 VdB (or 0.12 inch per second ppv), the latter being the general threshold where structural damage can begin to occur in fragile buildings.

### Sensitive Receptors

Noise-sensitive receptors include land uses such as single-family residences, churches, or other uses which are considered particularly sensitive to noise level increases. Sump 155, Sump 58, and Sump 102 are each located within the vicinity of existing single-family residences. Sump 89 and Sump 151 are not located within the vicinity of any noise-sensitive uses.

### **Standards of Significance**

For purposes of this IS/MND, impacts due to noise may be considered significant if construction and/or implementation of the proposed project would result in the following impacts that remain significant after implementation of General Plan policies:

- Result in exterior noise levels in the project area that are above the upper value of the normally acceptable category for various land uses due to the project's noise level increases;
- Result in residential interior noise levels of 45 dBA  $L_{dn}$  or greater caused by noise level increases due to the project;
- Result in construction noise levels that exceed the standards in the City of Sacramento Noise Ordinance;
- Permit existing and/or planned residential and commercial areas to be exposed to vibration-peak-particle velocities greater than 0.5 inches per second due to project construction;
- Permit adjacent residential and commercial areas to be exposed to vibration peak particle velocities greater than 0.5 inches per second due to highway traffic and rail operations; or
- Permit historic buildings and archaeological sites to be exposed to vibration-peak-particle velocities greater than 0.2 inches per second due to project construction and highway traffic.

### **Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies**

The Master EIR evaluated the potential for development under the 2035 General Plan to increase noise levels in the community. New noise sources include vehicular traffic, aircraft, railways, light rail and stationary sources. The General Plan policies establish exterior (Policy EC 3.1.1) and interior (Policy EC 3.1.3) noise standards. A variety of policies provide standards for the types of development envisioned in the 2035 General Plan. See Policy EC 3.1.8, which requires new mixed-use, commercial and industrial development to mitigate the effects of noise from operations on adjoining sensitive land use, and Policy 3.1.9, which calls for the City to limit hours of operations for parks and active recreation areas to minimize disturbance to nearby residences. Notwithstanding application of the General Plan policies, noise impacts for exterior noise levels (Impact 4.8-1) and interior noise levels (Impact 4.8-2), and vibration impacts (Impact 4.8-4) were found to be significant and unavoidable.

### **Answers to Checklist Questions**

#### Questions A and B

The City of Sacramento provides noise standards and criteria applicable to new operational noise sources. Specifically, the City of Sacramento General Plan Noise Element establishes exterior noise level criteria for determining the compatibility of land uses. For residential land uses, exterior noise levels below 60 dB  $L_{dn}$  are considered "Normally Acceptable". Exterior noise levels between 60 and 70 dB  $L_{dn}$  are classified "Conditionally Acceptable" and are acceptable on the condition that all feasible noise attenuation measures have been attempted. For areas where exterior noise levels are between 70 and 75 dB  $L_{dn}$ , which is considered "Normally Unacceptable", new construction or development is discouraged. New construction or development should not be undertaken at locations where exterior noise levels exceed 75 dB  $L_{dn}$  due to traffic or stationary sources. With regards to interior noise levels, interior noise levels for residential land uses that exceed 45 dB are considered unacceptable. In addition, maximum instantaneous interior noise levels due to rail operations should not be allowed to exceed 50 dB in bedrooms and 55 dB in other habitable rooms. Table 4.8-4 of the Master EIR includes an analysis of traffic noise levels associated with various roadways within the City of Sacramento, including noise contours. The traffic noise levels presented therein are based on traffic volumes projected for buildout of the 2035 General Plan.

The proposed project would be limited to pipe replacement and other improvements at existing sump station facilities. Upon completion of the improvements, the proposed project would not result in any long-term increase in operational noise levels associated with the sump stations. Therefore, ***no additional significant environmental effect*** would occur related to operational noise.

#### Question C

Per Section 8.68.060 of the City of Sacramento Municipal Code, exterior noise levels at agricultural and residential properties shall not exceed 55 dB between 7:00 AM and 10:00 PM or exceed 50 dB between 10:00 PM and 7:00 AM. Section 8.86.060(B) sets additional criteria for cumulative exposure to intrusive sound within any given hour. Section 8.68.070 of the Municipal Code provides specific noise standards for indoor noise at apartments, condominiums, townhouses, duplexes, and multi-unit dwellings. Section 8.68.080 of the Municipal Code provides exemptions from such noise standards for noise sources due to the erection (including excavation), demolition, alteration or repair of any building or structure between the hours of 7:00 AM and 6:00 PM, Monday through Saturday, and between 9:00 AM and 6:00 PM on Sundays.

Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time.

Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. In the case of the proposed project, construction activities associated with the proposed pipe replacements and other improvements would not require extensive ground disturbance, and would be limited to a relatively short period (approximately four months). In addition, construction activity would be dispersed between the five separate sump station facilities; thus, construction noise generated at each individual site would be relatively minor. While the project would generate a limited amount of vehicle traffic associated with workers driving to and from the project sites during implementation of the improvements, construction traffic associated with the proposed project would be temporary (approximately four months) and would not result in substantially increased traffic on local roadways such that traffic noise at sensitive receptors would increase.

The City's Municipal Code regulates noise and provides that construction noise during specified hours would be exempt from the City's noise controls (Title 8 – Health and Safety, Chapter 8.68 of the Municipal Code). As noted above, construction activities that occur between 7:00 AM and 6:00 PM, Monday through Saturday, and between 9:00 AM and 6:00 PM on Sundays are exempt from the applicable noise standards. Construction activities associated with the proposed project would comply with such hourly limits and, thus, would be exempt from the City's noise standards.

Based on the above, ***no additional significant environmental effect*** would occur related to construction noise.

#### Questions D through F

For structural damage, the California Department of Transportation (Caltrans) uses a vibration limit of 0.5 inches/second, peak particle velocity (in/sec PPV), for buildings structurally sound and designed to modern engineering standards; 0.2 in/sec PPV for buildings that are found to be

structurally sound but where structural damage is a major concern; and a conservative limit of 0.08 in/sec PPV for ancient buildings or buildings that are documented to be structurally weakened.<sup>10</sup> Accordingly, the City uses a threshold of significance for vibration levels of 0.5 in/sec PPV for residential and commercial areas, and 0.2 in/sec PPV for historic buildings and archaeological sites.

The primary vibration-generating activities associated with implementation of the proposed project would occur during excavation of the area around the existing pipes at the sump station facilities and placement of fill after the pipes are replaced. Construction activities would be temporary, and construction equipment would operate intermittently throughout the course of a day, would be restricted to daytime hours per the City's Municipal Code, and would likely only occur over portions of the project sites at a time.

Table 10 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. Implementation of the proposed project would not require use of vibration-generating equipment at a distance 25 feet or closer to an existing structure. The only potentially sensitive structure located within close proximity to the proposed activities is Well 159 at Sump 102, which is comprised of a utility building, prefabricated storage shed, electrical pulley system, and chemical treatment structure. The proposed improvements at this location are limited to installation of stairs on the waterside slope, which would not generate substantial vibration.

<b>Table 10</b>	
<b>Vibration Source Levels for Construction Equipment</b>	
<b>Equipment</b>	<b>PPV at 25 ft (in/sec)</b>
Large Bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003
<i>Source: Caltrans, Transportation and Construction Vibration: Guidance Manual. September 2013.</i>	

The proposed project would primarily involve use of loaded trucks, jackhammers, excavators, tractors/backhoes/loaders, concrete saws, graders, plate compactors, paving equipment, and a crane. Typical vibration levels for excavators, concrete saws, graders, plate compactors, and cranes are not identified in the referenced Caltrans Transportation and Construction Vibration: Guidance Manual; however, use of such equipment is anticipated to result in vibration source levels equivalent to, or less than, the most vibration-intensive equipment listed in the table above. While the proposed project may involve the use of jackhammers and loaded trucks, use of other more vibration-intensive equipment such as large bulldozers and tools for caisson drilling would not be required.

Based on the vibration source levels shown in the table, construction equipment anticipated to be used at the project site would not exceed the 0.5 in/sec PPV threshold for residential and commercial areas or the 0.2 in/sec PPV threshold used for exposure to historic buildings and archaeological sites.

Based on the above, the proposed project would not expose any residential or commercial areas, or historic buildings or archaeological sites to excessive vibration levels, and ***no additional significant environmental effect*** would occur.

<sup>10</sup> California Department of Transportation. *Transportation and Construction Vibration Guidance Manual*. September 2013.

**Mitigation Measures**

None required.

**Findings**

The proposed project would have no additional project-specific environmental effects relating to Noise. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>9. PUBLIC SERVICES</b>  A) Would the project result in the need for new or altered services related to fire protection, police protection, school facilities, or other governmental services beyond what was anticipated in the 2035 General Plan?			X

### Environmental Setting

The Sacramento Fire Department (SFD) provides fire protection services to the entire City and some small areas just outside the City boundaries within the County limits. Police protection services are provided by the Sacramento Police Department (SPD) for areas within the City. The SPD provides law enforcement protection to the proposed project sites from the Sacramento Police Department located at 300 Richards Boulevard. In addition to the SPD and Sheriff's Department, the California Highway Patrol and the Regional Transit Police Department provide police protection within the City of Sacramento.

### Standards of Significance

For the purposes of this IS/MND, an impact would be considered significant if implementation of the proposed project would result in the need for new or altered services related to fire protection, police protection, school facilities, roadway maintenance, or other governmental services beyond what was anticipated in the 2035 General Plan.

### Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies

The Master EIR evaluated the potential effects of the 2035 General Plan on various public services. These include police, fire protection, schools, libraries and emergency services (Chapter 4.10). The General Plan provides that adequate staffing levels for police and fire are important for the long-term health, safety and well-being of the community (Goal PHS 1.1, PHS 2.1). The Master EIR concluded that effects of development that could occur under the General Plan would be less than significant.

### Answers to Checklist Questions

#### Question A

The proposed project would be limited to pipe replacement and associated improvements at existing sump station facilities throughout the City of Sacramento. The proposed improvements would not have the potential to induce growth or otherwise result in the need for new or altered services related to fire protection, police protection, school facilities, or other governmental services beyond what was anticipated in the 2035 General Plan. Thus, ***no additional significant environmental effects*** would occur beyond what was analyzed in the Master EIR.

### Mitigation Measures

None required.

## **Findings**

The proposed project would have no additional project-specific environmental effects relating to Public Services. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

# SUMP STATION FACILITIES IMPROVEMENT PROJECT

INITIAL STUDY

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
10. <u>RECREATION</u> Would the project:			
A) Cause or accelerate substantial physical deterioration of existing area parks or recreational facilities?			X
B) Create a need for construction or expansion of recreational facilities beyond what was anticipated in the 2035 General Plan?			X

## Environmental Setting

The City of Sacramento Parks and Recreation Department maintains all parks and recreational facilities within the City of Sacramento. Residential and non-residential projects that are built in the City of Sacramento are required to pay a park development impact fee per Chapter 18.56 of the Sacramento City Code. The fees collected pursuant to Chapter 18.56 are primarily used to finance the construction of neighborhood and community park facilities.

## Standards of Significance

For purposes of this IS/MND, impacts to recreational resources are considered significant if the proposed project would do either of the following:

- Cause or accelerate substantial physical deterioration of existing area parks or recreational facilities; or
- Create a need for construction or expansion of recreational facilities beyond what was anticipated in the 2035 General Plan.

## Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies

Chapter 4.9 of the Master EIR considered the effects of the 2035 General Plan on the City's existing parkland, urban forest, recreational facilities and recreational services. The General Plan identified a goal of providing an integrated park and recreation system in the City (Goal ERC 2.1). Impacts were considered less than significant after application of the applicable policies (Impacts 4.9-1 and 4.9-2).

## Answers to Checklist Questions

### Questions A and B

The proposed project would be limited to pipe replacement and associated improvements at existing sump station facilities. Thus, the project would not increase use of existing parks or demand for parks or other recreational facilities, accelerate substantial deterioration of existing parks and recreational facilities, or require the construction or expansion of recreational facilities beyond what was anticipated in the 2035 General Plan. Thus, ***no additional significant environmental effects*** would occur beyond what was analyzed in the Master EIR.

### **Mitigation Measures**

None Required.

### **Findings**

The proposed project would have no additional project-specific environmental effects relating to Recreation. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

**SUMP STATION FACILITIES IMPROVEMENT PROJECT**  
INITIAL STUDY

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>11. TRANSPORTATION AND CIRCULATION</b> Would the project:			
A) Roadway segments: degrade peak period level of service (LOS) from A, B, C or D (without the project) to E or F (with project) or the LOS (without project) is E or F, and project generated traffic increases the Volume to Capacity Ratio (V/C ratio) by 0.02 or more.			X
B) Intersections: degrade peak period level of service from A, B, C or D (without project) to E or F (with project) or the LOS (without project) is E or F, and project generated traffic increases the peak period average vehicle delay by five seconds or more?			X
C) Freeway facilities: off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway; project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service; project traffic increases that cause the freeway level of service to deteriorate beyond level of service threshold defined in the Caltrans Route Concept Report for the facility; or the expected ramp queue is greater than the storage capacity?			X
D) Transit: adversely affect public transit operations or fail to adequately provide for access to public transit?			X
E) Bicycle facilities: adversely affect bicycle travel, bicycle paths or fail to adequately provide for access by bicycle?			X
F) Pedestrian: adversely affect pedestrian travel, pedestrian paths or fail to adequately provide for access by pedestrians?			X
G) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X

## Environmental Setting

Access to each of the sump station facilities is provided by multi-use paths along the tops of the adjacent levees and paved roadways in the vicinity of the facilities. Specific roadways providing access to each of the sump station facilities are noted in Table 1 of this IS/MND. Access to the sump station facilities is regularly maintained by the City of Sacramento to provide for upkeep of, and upgrades to, the facilities. Access to the La Riviera staging area is from a driveway along the north side of La Riviera Drive. Access to the Lathrop staging area is from a driveway at the west side of Lathrop Way.

## **Standards of Significance**

For purposes of this IS/MND, impacts resulting from changes in transportation or circulation may be considered significant if construction and/or implementation of the proposed project would result in the following impacts that remain significant after implementation of General Plan policies or mitigation from the General Plan MEIR:

### Study Intersections

For intersections, a significant impact would occur under the following circumstances:

- The traffic generated by a project degrades peak period level of service from acceptable (without project) to unacceptable (with project); or
- The LOS (without project) is already, or is projected to be, unacceptable, and project generated traffic increases the peak period average vehicle delay by five seconds or more.

### Transit

Impacts to the local transit system would be considered significant if the proposed project would result in the following:

- Adversely affect public transit operations; or
- Fail to adequately provide for access to public transit.

### Bicycle Facilities

Impacts to bicycle facilities would be considered significant if the proposed project would result in the following:

- Adversely affect bicycle travel, bicycle paths; or
- Fail to adequately provide for access by bicycle.

### Pedestrian Circulation

Impacts to pedestrian facilities would be considered significant if the proposed project would result in the following:

- Adversely affect pedestrian travel, pedestrian paths; or
- Fail to adequately provide for access by pedestrians.

### Vehicle Miles Travelled

Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Per Section 15064.3, analysis of vehicle miles travelled (VMT) attributable to a project is the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in Section 15064.3 (b)(2) regarding roadway capacity, a project's effect on automobile delay does not constitute a significant environmental impact under CEQA. As of July 1, 2020, VMT is to be used for determination of transportation impacts. The City of Sacramento has not yet adopted a quantitative significance threshold for VMT.

## Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies

Transportation and circulation were discussed in the Master EIR in Chapter 4.12. Various modes of travel were included in the analysis, including vehicular, transit, bicycle, pedestrian and aviation components. The analysis included consideration of roadway capacity and identification of levels of service, and effects of the 2035 General Plan on the public transportation system. Provisions of the 2035 General Plan that provide substantial guidance include Mobility Goal 1.1, calling for a transportation system that is effectively planned, managed, operated and maintained, promotion of multimodal choices (Policy M 1.2.1), identification of level of service standards (Policy M 1.2.2), support for state highway expansion and management consistent with the Sacramento Area Council of Governments Metropolitan Transportation Plan/Sustainable Communities Strategy (SACOG MTP/SCS) (Policy M 1.5.6) and development that encourages walking and biking (Policy LU 4.2.1).

While the General Plan includes numerous policies that direct the development of the City's transportation system, the Master EIR concluded that General Plan development would result in significant and unavoidable effects.

### Answers to Checklist Questions

#### Questions A through C

The proposed project would be limited to pipe replacement and other improvements at existing sump station facilities. While the project would generate a limited amount of vehicle traffic associated with workers driving to and from the project sites during construction of the improvements, construction traffic associated with the proposed project would be temporary (approximately four months) and would not result in substantially increased traffic on local roadways.

Based on the above, the proposed project would not conflict with the applicable City and County minimum LOS policies. In addition, the project would not result in substantial risks related to vehicle queuing at the study intersections. Therefore, ***no additional significant environmental effects*** would occur related to intersection operations beyond what was analyzed in the Master EIR.

#### Questions D through F

The proposed project would not result in increased demand for transit services. In addition, the proposed improvements would not affect any existing pedestrian, bicycle, or transit facilities in the vicinity of the project sites and would not conflict with any facilities planned per the City's Bicycle and Pedestrian Master Plans.

Considering that the proposed project would not result in a project-specific impact related to transit services or bicycle and pedestrian facilities, ***no additional significant environmental effects*** would occur beyond what was analyzed in the Master EIR.

#### Question G

Upon completion of the proposed improvements, the proposed project would not include any operational trip generation and resultant VMT. Consequently, the project would not have the potential to substantially increase annual VMT in the project region. Thus, the project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), related to VMT analysis, and ***no additional significant environmental effects*** would occur.

### **Mitigation Measures**

None required.

### **Findings**

The proposed project would have no additional project-specific environmental effects relating to Transportation and Circulation. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

**SUMP STATION FACILITIES IMPROVEMENT PROJECT**  
INITIAL STUDY

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<p><b>12. TRIBAL CULTURAL RESOURCES</b> 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:</p> <p>A) 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)?</p>		X	
<p>B) A resource determined by the lead 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>		X	

### Environmental Setting

The City of Sacramento and the surrounding area are known to have been occupied by Native American groups for thousands of years prior to settlement by non-Native peoples. Archaeological materials, including human burials, have been found throughout the City. Human burials outside of formal cemeteries often occur in prehistoric contexts. Areas of high sensitivity for archaeological resources, as identified in the 2035 General Plan Background Report, are located within close proximity to the Sacramento and American rivers and other watercourses.

The 2035 General Plan land use diagram designates a wide swath of land along the American River as Parks, which limits development and impacts on sensitive prehistoric resources. High sensitivity areas may be found in other areas related to the ancient flows of the rivers, with differing meanders than found today; however, all such areas are outside of the immediate project vicinity. The 2035 General Plan Background Report also defines moderate sensitivity areas, which are areas such as creeks, other watercourses, and high spots near waterways where the discovery of villages is unlikely, but campsites or special use sites may have existed. Moderate areas are often disturbed by siltation, or development; however, discovery of new archaeological resources is still possible.

### Standards of Significance

For purposes of this IS/MND, tribal cultural resource impacts may be considered significant if construction and/or implementation of the proposed project would result in a substantial adverse change in the significance of a tribal cultural resource that is:

- 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
- A resource determined by the lead 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

### **Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies**

The Master EIR evaluated the potential effects of development under the 2035 General Plan on prehistoric and historic resources. See Chapter 4.4.

General Plan policies identified as reducing such effects call for identification of resources on project sites (Policy HCR 2.1.1), implementation of applicable laws and regulations (Policy HCR 2.1.2), early consultation with owners and land developers to minimize effects (Policy HCR 2.1.10) and encouragement of adaptive reuse of historic resources (Policy HCR 2.1.14). Demolition of historic resources is deemed a last resort (Policy HCR 2.1.15).

The Master EIR concluded that implementation of the 2035 General Plan would have a significant and unavoidable effect on historic resources and archaeological resources (Impacts 4.4-1, 2).

### **Answers to Checklist Questions**

#### Questions A and B

Tribal cultural resources are generally defined by Public Resources Code 21074 as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe. The City notified all applicable Native American tribes per the requirements of AB 52.

As noted previously, a SLF search and CHRIS search were conducted for the project APE as part of the Cultural Resources Inventory prepared for the proposed project. The CHRIS search did not identify any known tribal cultural resources in the APE. The results of the search returned by the NAHC on August 5, 2020 were positive for tribal cultural resources in the project vicinity. While the SLF search for the APE identified the potential presence of tribal cultural resources, subsequent outreach to local tribes conducted by Natural Investigations did not yield any further information confirming such resources.

It should be noted that per the Cultural Resources Inventory, the APE is located within the Sacramento River TCL (P-34-005225). The TCL encompasses the whole of the Lower Sacramento River environment. The lands were known ethnographically as *Hoyo Sayo/Tah Sayo* by the Nisenan and as *Waka-ce/Waka-Ly* by the Plains Miwok. The primary character defining elements of the landscape are the waterways, tule habitats, fisheries, and other natural resources which would have sustained Native populations prehistorically and historically.

An intensive pedestrian survey of the APE, including all project sites, was conducted by Natural Investigations on July 24, 2020 as part of the Cultural Resources Inventory. The pedestrian survey did not identify any tribal cultural resources within the APE. Thus, ground-disturbing activities associated with implementation of the proposed project would not result in disturbance of known

tribal cultural resources. In addition, given that the proposed project is restricted to the footprint of existing features of the built environment, such as sumps, pipelines, outfalls, and levees, the project is not expected to cause any significant new impacts to the natural resources comprising the Sacramento River TCL (P-34-005225). However, unknown resources below the surface could be encountered during ground disturbing activities. Therefore, the proposed project could result in **additional significant environmental effects** related to damaging or destroying tribal cultural resources beyond what was analyzed in the Master EIR. Implementation of Mitigation Measures 4-1 through 4-5 would mitigate the potential impact to a *less-than-significant* level.

### **Mitigation Measures**

Implementation of the following mitigation measure would reduce potential impacts related to tribal cultural resources to a *less-than-significant* level.

12-1            *Implement Mitigation Measures 4-1 through 4-5.*

### **Findings**

All additional significant environmental effects of the proposed project relating to tribal cultural resources can be mitigated to a less-than-significant level. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>13. UTILITIES AND SERVICE SYSTEMS</b> Would the project:			
A) Result in the determination that adequate capacity is not available to serve the project's demand in addition to existing commitments?			X
B) Require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental impacts?			X

### Environmental Setting

The existing sump stations are used to collect and discharge stormwater runoff into adjacent waterways. The existing sump station facilities do not currently receive water, wastewater, or natural gas service from the City of Sacramento. Electricity for the existing facilities is provided by the Sacramento Municipal Utilities District (SMUD).

The City of Sacramento does not provide commercial solid waste collection services. Rather, commercial garbage, recycling or yard waste services are provided by a franchised hauler authorized by the Sacramento Solid Waste Authority to collect commercial garbage and commingled recycling within the City. Kiefer Landfill, located at 12701 Kiefer Boulevard in Sloughhouse, California, is the primary location for the disposal of waste by the City of Sacramento. According to the Master EIR, the landfill is permitted to accept up to 10,815 tons per day and the current peak and average daily disposal is much lower than the permitted amount. The landfill is anticipated to be capable of adequately serving the area, including the anticipated population growth, until the year 2065.

### Standards of Significance

For the purposes of this IS/MND, an impact would be considered significant if the project resulted in the following:

- Result in the determination that adequate capacity is not available to serve the project's demand in addition to existing commitments; or
- Require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental impacts.

### Summary of Analysis under the 2035 General Plan Master EIR and Applicable General Plan Policies

The Master EIR evaluated the effects of development under the 2035 General Plan on water supply, sewer and storm drainage, solid waste, electricity, natural gas and telecommunications. See Chapter 4.11.

The Master EIR evaluated the impacts of increased demand for water that would occur with development under the 2035 General Plan. Policies in the General Plan would reduce the impact generally to a less-than-significant level (see Impact 4.11-1) but the Master EIR concluded that

the potential increase in demand for potable water in excess of the City's existing diversion and treatment capacity, and which could require construction of new water supply facilities, would result in a significant and unavoidable effect (Impact 4.11-2). Effects related to potential expansion of wastewater treatment facilities were identified as less than significant (Impact 4.11-4). Impacts on solid waste facilities were less than significant (Impact 4.11-5).

## **Answers to Checklist Questions**

### Questions A and B

The proposed pipe replacements and associated improvements at the existing sump station facilities would not result in an increase in demand for utilities. The environmental effects associated with construction of the proposed utility replacement and improvement are evaluated throughout this IS/MND. Upon completion of the improvements, electricity demands at the sump station facilities would not substantially increase relative to existing conditions. In addition, the project would not require the extension of new utilities or substantial expansion of existing utilities. Thus, the proposed project would result ***no additional significant environmental effects*** beyond what was analyzed in the Master EIR.

### **Mitigation Measures**

None required.

### **Findings**

The proposed project would have no additional project-specific environmental effects relating to Utilities and Service Systems. Therefore, implementation of the proposed project would have no additional significant environmental effects beyond what was previously analyzed in the Master EIR.

## MANDATORY FINDINGS OF SIGNIFICANCE

Issues:	Effect remains significant with all identified mitigation	Effect can be mitigated to less than significant	No additional significant environmental effect
<b>14. MANDATORY FINDINGS OF SIGNIFICANCE</b>			
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?			X
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 with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			X
C) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X

### Answers to Checklist Questions

#### Question A

Implementation of the proposed project would have the potential to adversely impact special-status animals and previously undiscovered cultural resources and/or human remains. However, the proposed project would implement and comply with applicable Sacramento 2035 General Plan policies, as discussed throughout this IS/MND. With implementation of the mitigation measures required by this IS/MND, compliance with City of Sacramento 2035 General Plan policies, and application of standard BMPs during construction, the proposed project would not result in any of the following: 1) degrade the quality of the environment; 2) substantially reduce or impact the habitat of fish or wildlife species; 3) cause fish or wildlife populations to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; or 6) eliminate important examples of the major periods of California history or prehistory. Therefore, the proposed project would result in ***no additional significant environmental effects*** beyond what was analyzed in the Master EIR.

#### Question B

The proposed project would not include any new development that would have the potential to contribute to cumulative impacts. While the proposed pipe replacements and associated

improvements to the existing sump station facilities would result in minor short-term increases in emissions of criteria pollutants and GHGs, as well as short-term noise level increases, such effects would cease upon completion of the improvements. Applicable policies from the 2035 General Plan would be implemented as part of the proposed project, as well as the project-specific mitigation measures included in this IS/MND, to reduce the proposed project's contribution to potential cumulative impacts. The potential impacts of the proposed project would be individually limited and would not be cumulatively considerable. As demonstrated in this IS/MND, all potential environmental impacts that could occur as a result of project implementation would be reduced to a less-than-significant level with implementation of project-specific mitigation measures and/or compliance with applicable 2035 General Plan policies. Given that the improvements are considered a necessary component of levee maintenance and flood prevention within the City of Sacramento, the project would not result in new growth or other cumulative effects beyond what was included in the cumulative analysis of City buildout in the Master EIR. When viewed in conjunction with other closely related past, present or reasonably foreseeable future projects, implementation of the proposed project would not contribute to cumulative impacts in the City of Sacramento, and would result in ***no additional significant environmental effects*** beyond what was analyzed in the Master EIR.

#### Question C

Implementation of the proposed project could result in impacts related to biological resources and cultural resources during the construction period. However, the proposed project would be required to implement the project-specific mitigation measures within this IS/MND, as well as applicable policies of the 2035 General Plan, to reduce any potential direct or indirect impacts that could occur to human beings or various resources and, as demonstrated in this IS/MND, with implementation of the identified mitigation measures, all impacts would be reduced to less-than-significant levels. Therefore, the proposed project would not have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly, and ***no additional significant environmental effects*** would occur beyond what was analyzed in the Master EIR.

## **SECTION IV - ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED**

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The environmental factors checked below would potentially be affected by the proposed project.

	Aesthetics		Noise
	Air Quality		Public Services
X	Biological Resources		Recreation
X	Cultural Resources		Transportation/Circulation
	Geology and Soils	X	Tribal Cultural Resources
	Hydrology and Water Quality		Utilities and Service Systems
	Hazards		

## **SECTION V - DETERMINATION**

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**On the basis of the Initial Study:**

I find that (a) the proposed project is an anticipated subsequent project identified and described in the 2035 General Plan Master EIR; (b) the proposed project is consistent with the 2035 General Plan land use designation and the permissible densities and intensities of use for the project site; (c) that the discussions of cumulative impacts, growth inducing impacts, and irreversible significant effects in the Master EIR are adequate for the proposed project; and (d) the proposed project will have additional significant environmental effects not previously examined in the Master EIR. A Mitigated Negative Declaration will be prepared. Mitigation measures from the Master EIR will be applied to the proposed project as appropriate, and additional feasible mitigation measures and alternatives will be incorporated to revise the proposed project before the negative declaration is circulated for public review, to avoid or mitigate the identified effects to a level of insignificance. (CEQA Guidelines Section 15178(b))

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Signature

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Date

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Scott Johnson, Senior Planner  
Printed Name

## REFERENCES CITED

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The following documents are referenced information sources used for the analysis within this IS/MND:

1. California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.
2. California Department of Conservation Division of Land Resource Protection Farmland Mapping and Monitoring Program. *Sacramento County Important Farmland Map*. 2016.
3. California Department of Transportation. *California State Scenic Highway System Map*. Available at: <https://www.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983>. Accessed August 2020.
4. California Department of Transportation. *Transportation and Construction Vibration Guidance Manual*. September 2013.
5. City of Sacramento. *Climate Action Plan*. Adopted February 14, 2012.
6. City of Sacramento. *Sacramento 2030 General Plan Draft Master EIR*. August 2014.
7. City of Sacramento. *Sacramento 2035 General Plan*. Adopted on March 3, 2015.
8. City of Sacramento. *Tee Permits & Ordinances*. Available at: <https://www.cityofsacramento.org/Public-Works/Maintenance-Services/Trees/Permits-Ordinances>. Accessed July 2018.
9. City of Sacramento. *Zoning Code*. Current through August 2020.
10. Department of Conservation, California Geological Survey. *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California*. 2006.
11. Sacramento Metropolitan Air Quality Management District. *Air Quality Pollutants and Standards*. Available at: <http://www.airquality.org/Air-Quality-Health/Air-Quality-Pollutants-and-Standards>. Accessed September 2020.
12. Sacramento Metropolitan Air Quality Management District. *Guide to Air Quality Assessment in Sacramento County*. Available at: <http://www.airquality.org/businesses/ceqa-land-use-planning/ceqa-guidance-tools>. Accessed September 2020.
13. Sacramento Metropolitan Air Quality Management District. *SMAQMD Thresholds of Significance Table*. Available at: <http://www.airquality.org/ceqa/CH2ThresholdsTables5-2015.pdf>. May 2015. Accessed September 2020.
14. State Water Resources Control Board. *GeoTracker*. Available at: <https://geotracker.waterboards.ca.gov/>. Accessed September 2020.
15. Sycamore Environmental Consultants, Inc. *Biological Resources Evaluation and Botanical Inventory Report*. September 2020.
16. Natural Investigations Company. *Cultural Resources Inventory for the Pump Outfalls Replacement Project, Sacramento, Sacramento County, California*. August 2020.

## **APPENDIX A**

### **AIR QUALITY AND GREENHOUSE GAS MODELING RESULTS**

## **Sump 089 RoadMod Emissions Estimates**

### Lead Construction Emissions Model Excel Worksheet


This report will provide you with a summary of the model results. The model will calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities.

The model will calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities.

### Version 3.0.0

This report will provide you with a summary of the model results. The model will calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities.

The model will calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities.



THIS REPORT WAS PREPARED BY THE AIR QUALITY MANAGEMENT DISTRICT FOR THE AIR QUALITY MANAGEMENT DISTRICT. THE REPORT WAS PREPARED BY THE AIR QUALITY MANAGEMENT DISTRICT FOR THE AIR QUALITY MANAGEMENT DISTRICT. THE REPORT WAS PREPARED BY THE AIR QUALITY MANAGEMENT DISTRICT FOR THE AIR QUALITY MANAGEMENT DISTRICT.

### Input Data

Project Information

Project Name	0001
Project Location	0002
Project Description	0003
Project Start Date	0004
Project End Date	0005
Project Duration (Days)	0006
Project Duration (Hours)	0007
Project Duration (Minutes)	0008
Project Duration (Seconds)	0009
Project Duration (Milliseconds)	0010
Project Duration (Nanoseconds)	0011
Project Duration (Picoseconds)	0012
Project Duration (Femtoseconds)	0013
Project Duration (Attoseconds)	0014
Project Duration (Zeptoseconds)	0015
Project Duration (Yoctoseconds)	0016
Project Duration (Xenoseconds)	0017
Project Duration (Planck Times)	0018
Project Duration (Heisenberg Times)	0019
Project Duration (Schrödinger Times)	0020
Project Duration (Einstein Times)	0021
Project Duration (Bohr Times)	0022
Project Duration (Rydberg Times)	0023
Project Duration (Fermi Times)	0024
Project Duration (Dirac Times)	0025
Project Duration (Weyl Times)	0026
Project Duration (Clifford Times)	0027
Project Duration (Klein Times)	0028
Project Duration (Gordon Times)	0029
Project Duration (Dirac Times)	0030
Project Duration (Weyl Times)	0031
Project Duration (Clifford Times)	0032
Project Duration (Klein Times)	0033
Project Duration (Gordon Times)	0034
Project Duration (Dirac Times)	0035
Project Duration (Weyl Times)	0036
Project Duration (Clifford Times)	0037
Project Duration (Klein Times)	0038
Project Duration (Gordon Times)	0039
Project Duration (Dirac Times)	0040
Project Duration (Weyl Times)	0041
Project Duration (Clifford Times)	0042
Project Duration (Klein Times)	0043
Project Duration (Gordon Times)	0044
Project Duration (Dirac Times)	0045
Project Duration (Weyl Times)	0046
Project Duration (Clifford Times)	0047
Project Duration (Klein Times)	0048
Project Duration (Gordon Times)	0049
Project Duration (Dirac Times)	0050
Project Duration (Weyl Times)	0051
Project Duration (Clifford Times)	0052
Project Duration (Klein Times)	0053
Project Duration (Gordon Times)	0054
Project Duration (Dirac Times)	0055
Project Duration (Weyl Times)	0056
Project Duration (Clifford Times)	0057
Project Duration (Klein Times)	0058
Project Duration (Gordon Times)	0059
Project Duration (Dirac Times)	0060
Project Duration (Weyl Times)	0061
Project Duration (Clifford Times)	0062
Project Duration (Klein Times)	0063
Project Duration (Gordon Times)	0064
Project Duration (Dirac Times)	0065
Project Duration (Weyl Times)	0066
Project Duration (Clifford Times)	0067
Project Duration (Klein Times)	0068
Project Duration (Gordon Times)	0069
Project Duration (Dirac Times)	0070
Project Duration (Weyl Times)	0071
Project Duration (Clifford Times)	0072
Project Duration (Klein Times)	0073
Project Duration (Gordon Times)	0074
Project Duration (Dirac Times)	0075
Project Duration (Weyl Times)	0076
Project Duration (Clifford Times)	0077
Project Duration (Klein Times)	0078
Project Duration (Gordon Times)	0079
Project Duration (Dirac Times)	0080
Project Duration (Weyl Times)	0081
Project Duration (Clifford Times)	0082
Project Duration (Klein Times)	0083
Project Duration (Gordon Times)	0084
Project Duration (Dirac Times)	0085
Project Duration (Weyl Times)	0086
Project Duration (Clifford Times)	0087
Project Duration (Klein Times)	0088
Project Duration (Gordon Times)	0089
Project Duration (Dirac Times)	0090
Project Duration (Weyl Times)	0091
Project Duration (Clifford Times)	0092
Project Duration (Klein Times)	0093
Project Duration (Gordon Times)	0094
Project Duration (Dirac Times)	0095
Project Duration (Weyl Times)	0096
Project Duration (Clifford Times)	0097
Project Duration (Klein Times)	0098
Project Duration (Gordon Times)	0099
Project Duration (Dirac Times)	0100

### Model Results

The model results show the emissions of various pollutants from construction activities. The model will calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities.

The model will calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities. The model will also calculate the emissions of various pollutants from construction activities.

Note: The criterion's estimates of construction cost/linear foot can be justified in cells DIS through DIS3 and FBO through FBO3.

Description	User Override of		Maximum	
	Proposed Price	Calculated Price	User Override of	Default
Station/Land Owner			Maximum Price	Maximum Price
Proposed Price	0.00	0.00	0.00	0.00
Station/Utility Sub-Grade			Maximum Price	Maximum Price
Proposed Price	0.00	0.00	0.00	0.00
<b>Total Station</b>				

1044: The `Flavor` extension default values can be overridden in cells CDE through DDE and FET through FFE.

[illegible]

NOTE: Apache Hadoop ecosystem default values can be overridden in cells D07 through D09 and F07 through F09.

[illegible]

Model: Unobserved systematic effects without cross-sectional correlation in errors (Pooled) (Randomly Pooled)

[illegible]

Model: Wilson Perce's default network criterion contribution to output (0.000) (0.000) (0.000) (0.000) (0.000) (0.000) (0.000) (0.000) (0.000) (0.000)

[illegible]

Model: *Shooting & all deaths related to gun has quadrupled in 2015* (P100) through P1000

[illegible]

[illegible]

[illegible]

Data Entry Worksheet

## Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> <span>Sump 89</span>														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust (lbs/day)	Fugitive Dust (lbs/day)	PM2.5 (lbs/day)	Exhaust (lbs/day)	Fugitive Dust (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.42	5.53	4.05	2.42	0.22	2.20	0.66	0.20	0.46	0.01	801.09	0.26	0.01	809.72
Grading/Excavation	1.67	12.96	17.86	2.97	0.77	2.20	1.18	0.73	0.46	0.03	2,594.18	0.68	0.02	2,617.93
Drainage/Utilities/Sub-Grade	1.71	13.17	18.11	2.98	0.78	2.20	1.19	0.74	0.46	0.03	2,628.66	0.69	0.02	2,652.59
Paving	1.03	11.96	9.28	0.49	0.49	0.00	0.47	0.47	0.00	0.02	1,822.69	0.42	0.02	1,837.95
Maximum (pounds/day)	1.71	13.17	18.11	2.98	0.78	2.20	1.19	0.74	0.46	0.03	2,628.66	0.69	0.02	2,652.59
Total (tons/construction project)	0.01	0.07	0.08	0.01	0.00	0.01	0.01	0.00	0.00	0.00	12.71	0.00	0.00	12.83
Notes: Project Start Year -> 2021														
Project Length (months) -> 1														
Total Project Area (acres) -> 1														
Maximum Area Disturbed/Day (acres) -> 0														
Water Truck Used? -> No														
	Total Material Imported/Exported Volume (yd³/day)		Daily VMT (miles/day)											
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck								
Grubbing/Land Clearing	0	0	0	0	0	0								
Grading/Excavation	0	0	0	0	0	0								
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0								
Paving	0	0	0	0	0	0								
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.														
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.														
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.														
Total Emission Estimates by Phase for -> <span>Sump 89</span>														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust (tons/phase)	Fugitive Dust (tons/phase)	PM2.5 (tons/phase)	Exhaust (tons/phase)	Fugitive Dust (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.40
Grading/Excavation	0.00	0.03	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	5.71	0.00	0.00	5.22
Drainage/Utilities/Sub-Grade	0.00	0.03	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	5.06	0.00	0.00	4.63
Paving	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.00	0.00	1.38
Maximum (tons/phase)	0.00	0.03	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	5.71	0.00	0.00	5.22
Total (tons/construction project)	0.01	0.07	0.08	0.01	0.00	0.01	0.01	0.00	0.00	0.00	12.71	0.00	0.00	11.64
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.														
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.														
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.														
The CO2e emissions are reported as metric tons per phase.														

## **Sump 155 RoadMod Emissions Estimates**

Data Entry Worksheet



[illegible]

Component	Unit Cost/Unit of Production	Global Volume (Units)	Unit Cost/Unit of Production	Global Volume (Units)
1. Labor Costs				
a. Direct Labor	\$1.00	200	\$1.00	200
b. Indirect Labor	\$0.50	200	\$0.50	200
2. Materials and Related Materials				
a. Purchased Materials	\$2.00	200	\$2.00	200
b. Scrap Materials	\$0.50	200	\$0.50	200
3. Overhead Expenses				
a. Depreciation	\$0.25	200	\$0.25	200
b. Utilities	\$0.10	200	\$0.10	200
c. Insurance	\$0.05	200	\$0.05	200
d. Maintenance	\$0.05	200	\$0.05	200
e. Other Expenses	\$0.05	200	\$0.05	200
4. Selling and General Expenses				
a. Advertising	\$0.10	200	\$0.10	200
b. Sales Commissions	\$0.05	200	\$0.05	200
c. Office Expenses	\$0.05	200	\$0.05	200
d. Freight	\$0.05	200	\$0.05	200
e. Other Expenses	\$0.05	200	\$0.05	200
5. Other Expenses				
a. Research and Development	\$0.10	200	\$0.10	200
b. Interest	\$0.05	200	\$0.05	200
c. Taxes	\$0.05	200	\$0.05	200
d. Other Expenses	\$0.05	200	\$0.05	200
6. Total Unit Cost	\$4.50	200	\$4.50	200
7. Selling Price	\$5.00	200	\$5.00	200
8. Profit	\$0.50	200	\$0.50	200
9. Total Revenue	\$10.00	200	\$10.00	200
10. Total Costs	\$9.00	200	\$9.00	200
11. Total Profit	\$1.00	200	\$1.00	200
12. Profit Margin	10%	200	10%	200
13. Break-Even Point	100		100	
14. Contribution Margin	\$0.50	200	\$0.50	200
15. Fixed Costs	\$4.00	200	\$4.00	200
16. Variable Costs	\$0.50	200	\$0.50	200
17. Total Costs	\$4.50	200	\$4.50	200
18. Total Revenue	\$10.00	200	\$10.00	200
19. Total Profit	\$1.00	200	\$1.00	200
20. Profit Margin	10%	200	10%	200
21. Break-Even Point	100		100	
22. Contribution Margin	\$0.50	200	\$0.50	200
23. Fixed Costs	\$4.00	200	\$4.00	200
24. Variable Costs	\$0.50	200	\$0.50	200
25. Total Costs	\$4.50	200	\$4.50	200
26. Total Revenue	\$10.00	200	\$10.00	200
27. Total Profit	\$1.00	200	\$1.00	200
28. Profit Margin	10%	200	10%	200
29. Break-Even Point	100		100	
30. Contribution Margin	\$0.50	200	\$0.50	200
31. Fixed Costs	\$4.00	200	\$4.00	200
32. Variable Costs	\$0.50	200	\$0.50	200
33. Total Costs	\$4.50	200	\$4.50	200
34. Total Revenue	\$10.00	200	\$10.00	200
35. Total Profit	\$1.00	200	\$1.00	200
36. Profit Margin	10%	200	10%	200
37. Break-Even Point	100		100	
38. Contribution Margin	\$0.50	200	\$0.50	200
39. Fixed Costs	\$4.00	200	\$4.00	200
40. Variable Costs	\$0.50	200	\$0.50	200
41. Total Costs	\$4.50	200	\$4.50	200
42. Total Revenue	\$10.00	200	\$10.00	200
43. Total Profit	\$1.00	200	\$1.00	200
44. Profit Margin	10%	200	10%	200
45. Break-Even Point	100		100	
46. Contribution Margin	\$0.50	200	\$0.50	200
47. Fixed Costs	\$4.00	200	\$4.00	200
48. Variable Costs	\$0.50	200	\$0.50	200
49. Total Costs	\$4.50	200	\$4.50	200
50. Total Revenue	\$10.00	200	\$10.00	200
51. Total Profit	\$1.00	200	\$1.00	200
52. Profit Margin	10%	200	10%	200
53. Break-Even Point	100		100	
54. Contribution Margin	\$0.50	200	\$0.50	200
55. Fixed Costs	\$4.00	200	\$4.00	200
56. Variable Costs	\$0.50	200	\$0.50	200
57. Total Costs	\$4.50	200	\$4.50	200
58. Total Revenue	\$10.00	200	\$10.00	200
59. Total Profit	\$1.00	200	\$1.00	200
60. Profit Margin	10%	200	10%	200
61. Break-Even Point	100		100	
62. Contribution Margin	\$0.50	200	\$0.50	200
63. Fixed Costs	\$4.00	200	\$4.00	200
64. Variable Costs	\$0.50	200	\$0.50	200
65. Total Costs	\$4.50	200	\$4.50	200
66. Total Revenue	\$10.00	2		

Data Entry Worksheet

## Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Sump 155															
Project Phases (Pounds)		ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing		0.42	5.53	4.05	2.42	0.22	2.20	0.66	0.20	0.46	0.01	801.09	0.26	0.01	809.72
Grading/Excavation		1.67	12.96	17.86	2.97	0.77	2.20	1.18	0.73	0.46	0.03	2,594.18	0.68	0.02	2,617.93
Drainage/Utilities/Sub-Grade		1.71	13.17	18.11	2.98	0.78	2.20	1.19	0.74	0.46	0.03	2,628.66	0.69	0.02	2,652.59
Paving		1.03	11.96	9.28	0.49	0.49	0.00	0.47	0.47	0.00	0.02	1,822.69	0.42	0.02	1,837.95
Maximum (pounds/day)		1.71	13.17	18.11	2.98	0.78	2.20	1.19	0.74	0.46	0.03	2,628.66	0.69	0.02	2,652.59
Total (tons/construction project)		0.01	0.07	0.08	0.01	0.00	0.01	0.01	0.00	0.00	0.00	12.71	0.00	0.00	12.83
Notes: Project Start Year -> 2021															
Project Length (months) -> 1															
Total Project Area (acres) -> 0															
Maximum Area Disturbed/Day (acres) -> 0															
Water Truck Used? -> No															
		Total Material Imported/Exported Volume (yd³/day)		Daily VMT (miles/day)											
Phase		Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck								
Grubbing/Land Clearing		0	0	0	0	0	0								
Grading/Excavation		0	0	0	0	0	0								
Drainage/Utilities/Sub-Grade		0	0	0	0	0	0								
Paving		0	0	0	0	0	0								
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.															
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.															
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.															
Total Emission Estimates by Phase for -> Sump 155															
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)		ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.40
Grading/Excavation		0.00	0.03	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	5.71	0.00	0.00	5.22
Drainage/Utilities/Sub-Grade		0.00	0.03	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	5.06	0.00	0.00	4.63
Paving		0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.00	0.00	1.38
Maximum (tons/phase)		0.00	0.03	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	5.71	0.00	0.00	5.22
Total (tons/construction project)		0.01	0.07	0.08	0.01	0.00	0.01	0.01	0.00	0.00	0.00	12.71	0.00	0.00	11.64
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.															
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.															
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.															
The CO2e emissions are reported as metric tons per phase.															

## **APPENDIX B**

### **BIOLOGICAL RESOURCES ASSESSMENT**

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Biological Resources Evaluation  
and  
Botanical Inventory Report  
for the  
Pump Outfalls Replacement Project  
Sacramento, CA

---

Prepared by:

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September 2020

Biological Resources Evaluation and Botanical Inventory Report  
for the  
Pump Outfalls Replacement Project  
Sacramento, CA

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## **I. SUMMARY OF FINDINGS AND CONCLUSIONS**

---

This biological resources evaluation (BRE) documents baseline biological resources for the Pump Outfalls Replacement Project (Project). The Project Biological Study Area (BSA) includes eight sump sites (Sump 058, 089, 102, 103, 151, 154, and 159) and two off-site staging areas in the City of Sacramento, CA. Biological, botanical, and wetland surveys were conducted in July 2020. Vegetation in the BSA consists of nonnative annual grassland, riparian forest, and riparian scrub shrub.

The BSA provides potential habitat for the following special-status wildlife species: valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), California Central Valley steelhead DPS (*Oncorhynchus mykiss*), Central Valley spring-run Chinook salmon ESU (*Oncorhynchus tshawytscha*), western pond turtle (*Emys marmorata*), giant garter snake (*Thamnophis gigas*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), song sparrow (*Melospiza melodia*) and nesting raptors and birds of prey. Swainson's hawks were observed flying overhead the BSA at Sumps 89 and 154. Migratory birds covered by the MBTA were observed at all sump sites. No other special-status wildlife species were observed during the surveys.

The BSA provides potential habitat for the following three special-status plant species: bristly sedge (*Carex comosa*; CNPS Rank 2B.1), woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*; CNPS Rank 1B.2), and Sanford's arrowhead (*Sagittaria sanfordii*; CNPS Rank 1B.2). No special-status plants were observed in the BSA during protocol botanical surveys conducted in July 2020, during the evident and identifiable period.

Sensitive natural communities in the BSA include Steelhead Creek, the Sump 058 Outfall Channel, Morrison Creek, Arcade Creek, the American River, the American River Floodplain Channel, riparian forest, and riparian scrub-shrub.

An analysis of Project impacts based on preliminary design dated August 2020 is included. Mitigation measures for biological resources are recommended as necessary to reduce impacts to less-than-significant. A summary of mitigation measures listed by sump number is included in Appendix E.

## **II. INTRODUCTION**

---

### **A. Purpose of Report**

The purpose of this report is to document baseline biological resources in the Pump Outfalls Replacement Project (Project) Biological Study Area (BSA). This report includes analysis of August 2020 Project design. Mitigation measures are recommended where necessary to reduce impacts to biological resources to less-than-significant levels. This report may be used in support of permit applications and in the California Environmental Quality Act (CEQA) review process.

### **B. Project Location**

The Project is located at eight sumps and two staging areas within the City of Sacramento (Sump 058, 089, 102, 103, 151, 154, and 159). Table 1 is a summary of location information for each sump. Figure 1 is a project location map. Figure 2 is an aerial photograph map (each sheet corresponding to a sump, in number sequence, followed by the two staging areas). The La Riviera Staging Area is located north of La Riviera Drive and east of Howe Avenue. The Lathrop Staging Area is located west of Lathrop Way and north of the American River Bike Trail.

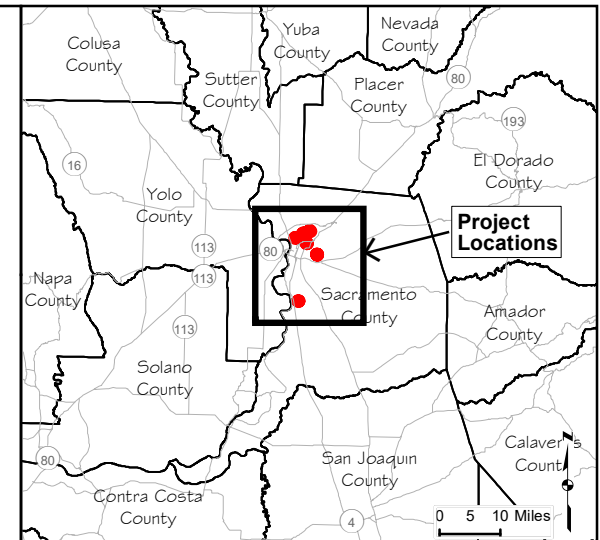
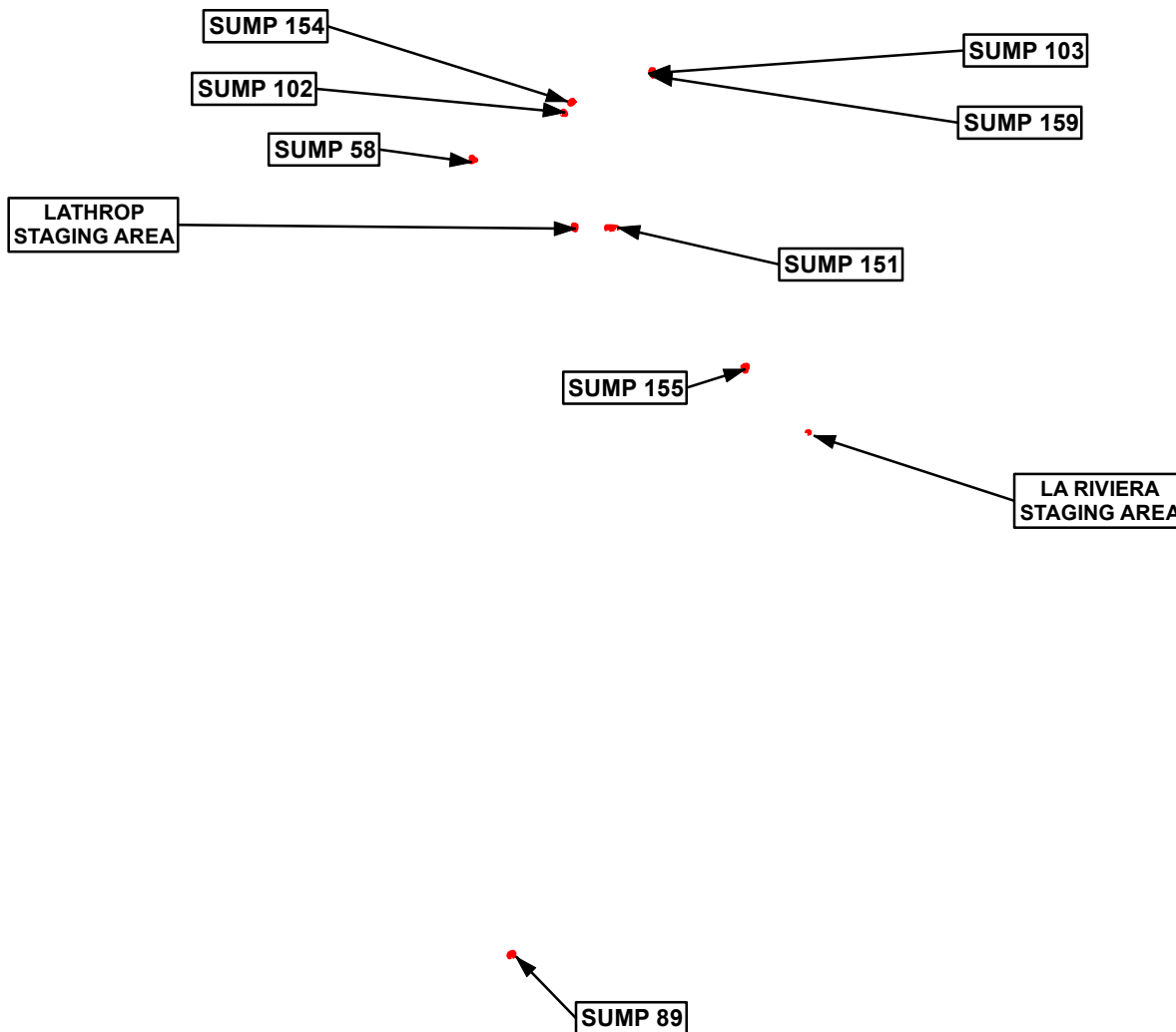
### **C. Project Proponent**

City of Sacramento  
Department of Utilities  
Contact: Raymond Kong,  
Senior Engineer, Drainage CIP  
916.808.1435

Table 1. Sump Location Summary

SUMP	BSA AREA (AC)	PARCELS	PARCEL AREA (AC)	BSA CENTROID		USGS QUAD (SECTION, TOWNSHIP, RANGE / LAND-GRANT)	WATERSHED	ADJACENT STREET ADDRESS
				GEOGRAPHIC LATITUDE / LONGITUDE (WGS84)	UTM 10N EASTING / NORTHING (WGS84)			
058	1.57	APN 274-0060-003	0.223	38.6085275 -121.490875	631,398 4,274,416	SACRAMENTO EAST (Section 25, T09N, R04E)	Lower American (HUC 18020111)	1185 Azusa St
		APN 274-0060-005	0.231					
		APN 274-0060-030	0.157					
		APN 274-0390-017	0.066					
		APN 274-0390-018	0.001					
		APN 274-0390-019	<0.001					
		APN 274-0120-001	0.189					
		APN 274-0120-003	0.173					
089	1.60	APN 119-0090-004	0.048	38.4585112	632,764	FLORIN (Section 18, T07N, R05E)	Lower Sacramento (HUC 18020163)	8357 Beach Lake Rd
		APN 119-0090-012	1.549	-121.478355	4,257,786			
102	0.72	APN 262-0132-013	0.129	38.6176034	633,292	SACRAMENTO EAST (DEL PASO)	Lower American (HUC 18020111)	300 Bowman Ave
		APN 263-0260-016	0.594	-121.468937	4,275,455			
103	0.57	APN 250-0270-009	0.062	38.6257701 -121.447787	635,118 4,276,392	RIO LINDA (DEL PASO)	Lower American (HUC 18020111)	3220 Altos Ave
		APN 250-0270-012	0.079					
		APN 263-0010-015	0.247					
		APN 263-0010-016	0.043					
		APN 263-0260-009	0.010					
		APN 263-0260-010	0.078					
151	2.52	APN 275-0260-007	0.150	38.5959708 -121.456973	634,374 4,273,071	SACRAMENTO EAST (DEL PASO)	Lower American (HUC 18020111)	1420 Expo Pkwy
		APN 275-0260-014	0.197					
		APN 275-0260-015	0.039					
		APN 275-0260-023	0.835					
		APN 275-0270-012	0.014					
		APN 275-0270-036	1.282					
154	1.00	APN 275-0300-008	0.003					
		APN 263-0010-036	0.054	38.6196956 -121.466867	633,468 4,275,690	SACRAMENTO EAST (DEL PASO)	Lower American (HUC 18020111)	79 Arcade Blvd
		APN 263-0010-037	0.740					
		APN 263-0051-001	0.004					
		APN 263-0051-033	0.001					
		APN 263-0260-008	0.205					

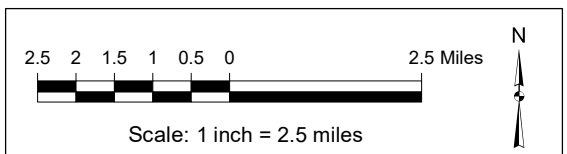
SUMP	BSA AREA (AC)	PARCELS	PARCEL AREA (AC)	BSA CENTROID		USGS QUAD (SECTION, TOWNSHIP, RANGE / LAND-GRANT)	WATERSHED	ADJACENT STREET ADDRESS
				GEOGRAPHIC LATITUDE / LONGITUDE (WGS84)	UTM 10N EASTING / NORTHING (WGS84)			
155	1.33	APN 005-0010-005	0.080	38.5699355 -121.424192	637,278 4,270,231	SACRAMENTO EAST (NEW HELVETIA)	Lower American (HUC 18020111)	6007 Camellia Ave
		APN 005-0010-024	0.212					
		APN 005-0010-025	0.150					
		APN 005-0203-005	0.027					
		APN 005-0203-006	0.012					
		APN 005-0203-014	0.012					
		APN 005-0233-003	0.649					
		APN 005-0233-004	0.024					
		APN 005-0233-005	0.012					
		APN 005-0233-006	0.104					
159	0.34	APN 263-0010-016	0.175	38.6250432 -121.447708	635,126 4,276,311	RIO LINDA and SACRAMENTO EAST (DEL PASO)	Lower American (HUC 18020111)	817 Arcade Blvd
		APN 263-0041-019	0.006					
		APN 263-0260-009	0.012					
		APN 263-0260-010	0.151					



Pump Outfalls Replacement Project  
City of Sacramento, CA  
27 August 2020

Figure 1.  
Project Location Map

 Sump Locations




**SYCAMORE**  
Environmental  
Consultants, Inc.

World Topographic Map  
ESRI Arcmap Basemap Layer



Pump Outfalls Replacement Project  
City of Sacramento, CA  
27 August 2020

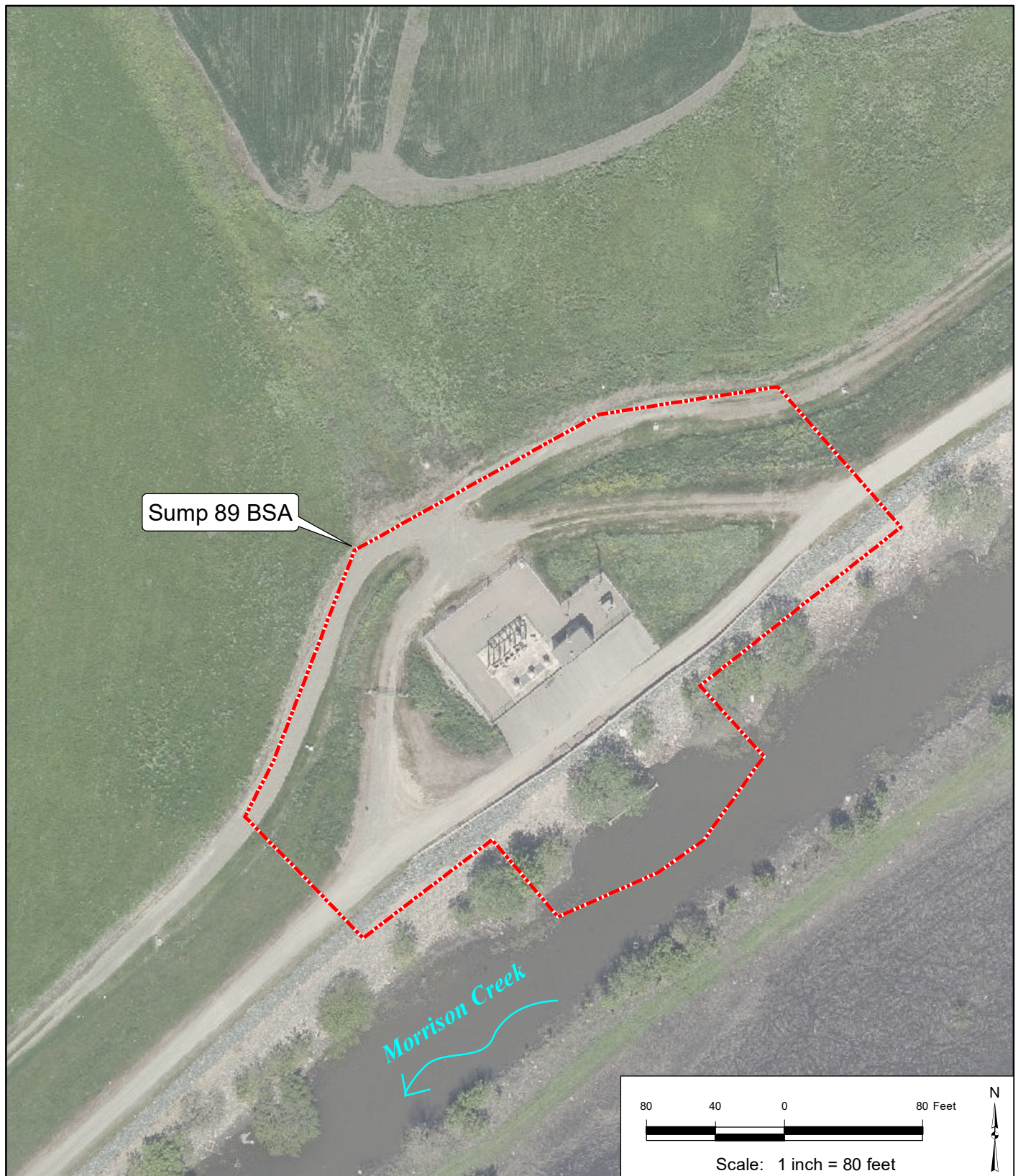
 Biological Study Area (BSA)



**SYCAMORE**  
Environmental  
Consultants, Inc.

Aerial Photograph: 7 November 2019  
GEO1 Vivid Maxar Imagery  
ESRI Arcmap Basemap Service Layer

Figure 2. Aerial Photograph  
Sheet 1 of 10, Sump 58



Pump Outfalls Replacement Project  
City of Sacramento, CA  
27 August 2020


 Biological Study Area (BSA)

Figure 2. Aerial Photograph  
Sheet 2 of 10, Sump 89



**SYCAMORE**  
Environmental  
Consultants, Inc.

Aerial Photograph: 7 November 2019  
GEO1 Vivid Maxar Imagery  
ESRI Arcmap Basemap Service Layer



Pump Outfalls Replacement Project  
City of Sacramento, CA  
27 August 2020

 Biological Study Area (BSA)




**SYCAMORE**  
Environmental  
Consultants, Inc.

Figure 2. Aerial Photograph  
Sheet 3 of 10, Sump 102

Aerial Photograph: 7 November 2019  
GEO1 Vivid Maxar Imagery  
ESRI Arcmap Basemap Service Layer



Pump Outfalls Replacement Project  
 City of Sacramento, CA  
 27 August 2020

 Biological Study Area (BSA)



**SYCAMORE**  
 Environmental  
 Consultants, Inc.

Figure 2. Aerial Photograph  
 Sheet 4 of 10, Sump 103

Aerial Photograph: 7 November 2019  
 GEO1 Vivid Maxar Imagery  
 ESRI Arcmap Basemap Service Layer



Pump Outfalls Replacement Project  
 City of Sacramento, CA  
 27 August 2020

 Biological Study Area (BSA)

Figure 2. Aerial Photograph  
 Sheet 5 of 10, Sump 151



**SYCAMORE**  
 Environmental  
 Consultants, Inc.

Aerial Photograph: 7 November 2019  
 GEO1 Vivid Maxar Imagery  
 ESRI Arcmap Basemap Service Layer



Pump Outfalls Replacement Project  
City of Sacramento, CA  
27 August 2020

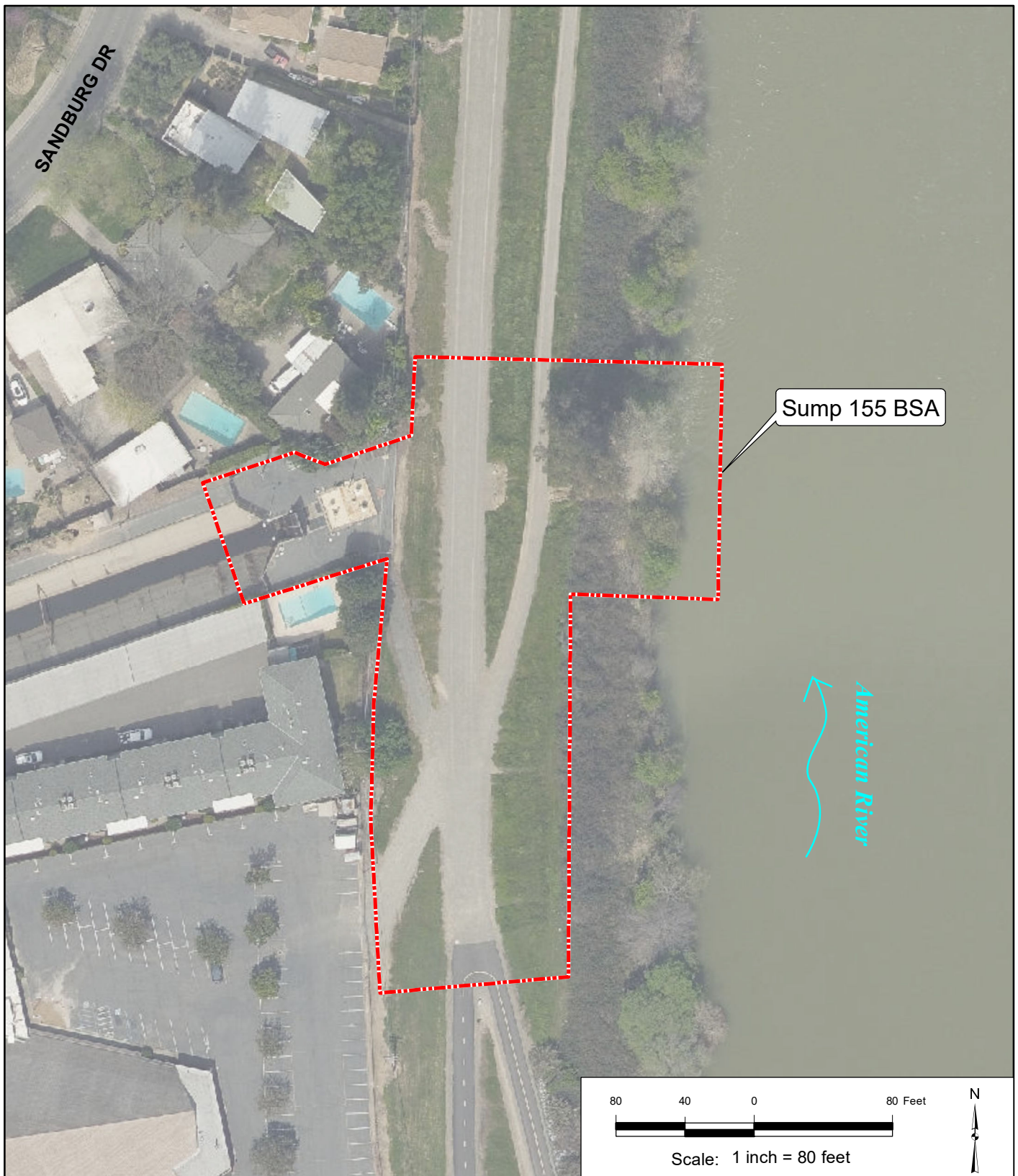
 Biological Study Area (BSA)

Figure 2. Aerial Photograph  
Sheet 6 of 10, Sump 154



**SYCAMORE**  
Environmental  
Consultants, Inc.

Aerial Photograph: 7 November 2019  
GEO1 Vivid Maxar Imagery  
ESRI Arcmap Basemap Service Layer



Pump Outfalls Replacement Project  
City of Sacramento, CA  
27 August 2020

 Biological Study Area (BSA)



**SYCAMORE**  
Environmental  
Consultants, Inc.

Aerial Photograph: 7 November 2019  
GEO1 Vivid Maxar Imagery  
ESRI Arcmap Basemap Service Layer

Figure 2. Aerial Photograph  
Sheet 7 of 8, Sump 155



Pump Outfalls Replacement Project  
 City of Sacramento, CA  
 27 August 2020

 Biological Study Area (BSA)

Figure 2. Aerial Photograph  
 Sheet 8 of 10, Sump 159



**SYCAMORE**  
 Environmental  
 Consultants, Inc.

Aerial Photograph: 7 November 2019  
 GEO1 Vivid Maxar Imagery  
 ESRI Arcmap Basemap Service Layer



Pump Outfalls Replacement Project  
City of Sacramento, CA  
27 August 2020

 Biological Study Area (BSA)



Aerial Photograph: 7 November 2019  
GEO1 Vivid Maxar Imagery  
ESRI Arcmap Basemap Service Layer

Figure 2. Aerial Photograph  
Sheet 9 of 10, La Riviera Staging Area



Pump Outfalls Replacement Project  
 City of Sacramento, CA  
 2 September 2020

 Biological Study Area (BSA)

 **SYCAMORE**  
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Figure 2. Aerial Photograph  
 Sheet 10 of 10, Lathrop Staging Area

Aerial Photograph: 7 November 2019  
 GEO1 Vivid Maxar Imagery  
 ESRI Arcmap Basemap Service Layer

## **D. Project Description**

As mandated by the Sacramento Area Flood Control Agency (SAFCA) and the U.S. Army Corps of Engineers (USACE), sump station outfalls that penetrate and cross major levees are inspected on a 5-year cycle. The Project entails the complete replacement of the pump discharge pipes for three drainage sump station facilities (Sumps 089, 151, and 155) and partial replacement of the pump discharge pipes for five drainage sump station facilities (Sumps 058, 102, 103, 154, and 159). Sump 155 includes pipe relocation and modification of the existing outfall structure.

Complete discharge pipe replacements include replacement from the pump discharge across the levee to the outfall structure, including through the headwall. To remove pipes in the levee, trenches that are approximately twice the width of each pipe will be excavated from the landside to the waterside of the levee below the pipes. For pipes that are close together, one wider trench may be used to accommodate multiple pipes. Existing pipes will be lifted out of the trench. The fill beneath the pipes will be built back up to the bottom of the new pipes, which may be installed at a higher elevation than the removed pipes.

Where installation of positive closure vaults and/or sluice gate structures at the hinge point of the levee is required (Sumps 089, 151, and 155), the vault area will be excavated to the bottom of the levee, then built back up from the bottom to pour the vault. The vault is cast-in-place concrete and will be partially buried. At Sump 155, an existing gate riser and sluice gate at the top of the levee hinge point will be replaced, and a retaining wall will be installed at the sump station. Varying amounts of asphalt will be installed or replaced at these three sites.

The partial discharge pipe replacements exclude any improvements within the levee section; replacement will occur at the pump station and outfall structure only. For all complete and partial pipe replacements, the portion of the pipe behind and through the headwall will be cored out from the waterside of the levee, then pulled out.

At Sump 155, there are two pipes in a sloped, concrete apron that extends over the American River, and a third pipe extending from a typical concrete outfall structure further up the levee bank. There is gunite between the top of the concrete apron and the bottom of the upper outfall structure. The lower, sloped concrete apron has been undermined by the river and will be removed, and the two pipes extending from it will be relocated to the upper outfall structure. A positive closure vault will be installed at the waterside hinge point of the levee.

To remove the concrete apron at Sump 155, the apron will be surrounded by a turbidity curtain placed in the river, demolished, then lifted up from upslope. No dewatering will occur within the turbidity curtain. The gunite below the upper outfall structure will be removed via excavation and replaced with Class 5 RSP. The RSP will be keyed into the excavated area. The upper outfall structure will be widened to accommodate the two relocated pipes from downslope. RSP will be placed below the closure vault.

No replacement or reconstruction of any of the remaining outfall structures is proposed.

If construction at the eight sump sites is considered as a single activity, a Stormwater Pollution Prevention Plan (SWPPP) may be required. For all sites, either the conditions of the SWPPP or other best management practices (BMPs) will be implemented to prevent debris from entering waterways and channels. Except where noted for a specific sump, project sites will be returned to their existing condition post-construction.

The Project includes three proposed staging areas: one on the land side of the levee at Sump 089 (Sump 089 Staging Area), one on La Riviera Drive just east of Howe Avenue, (La Riviera Staging Area), and one west of and adjacent to the southeast corner of Lathrop Way (Lathrop Staging Area). The Sump 089 Staging Area occurs on existing gravel service roads and adjacent nonnative annual grassland. The La Riviera and Lathrop staging areas occur in fenced, cleared areas that are used for staging and stockpiling of construction materials under baseline conditions. The La Riviera staging area is located on La Riviera Drive just east of Howe Avenue, on a graveled area adjacent to Sump 91 (not included in this Project). The Lathrop staging area is located west of and adjacent to the southeast corner of Lathrop Way.

For all of the sumps, work will be completed during the summer months outside the flood season. Outfall structures at Sumps 058, 102, 103, 155, and 159 are anticipated to be dry during construction; dewatering will not be required for these locations. Arcade Creek at Sump 154 is anticipated to be dry during construction, but the flip bucket at the outfall may retain water. Any water in the flip bucket will be pumped out and will not require a cofferdam. Sump 089 will be dewatered using a cofferdam to access to the outfall structure. The isolated pool below the outfall of Sump 151 will be pumped out and will not require a cofferdam.

Two trees will be removed at Sump 089 to access the existing pipes. Up to four trees may need to be removed at Sump 155 depending on the proximity of excavation and concrete apron removal. Riparian vegetation may require minor trimming at all sump locations with riparian vegetation growing near the outfall structures (all sumps except 151).

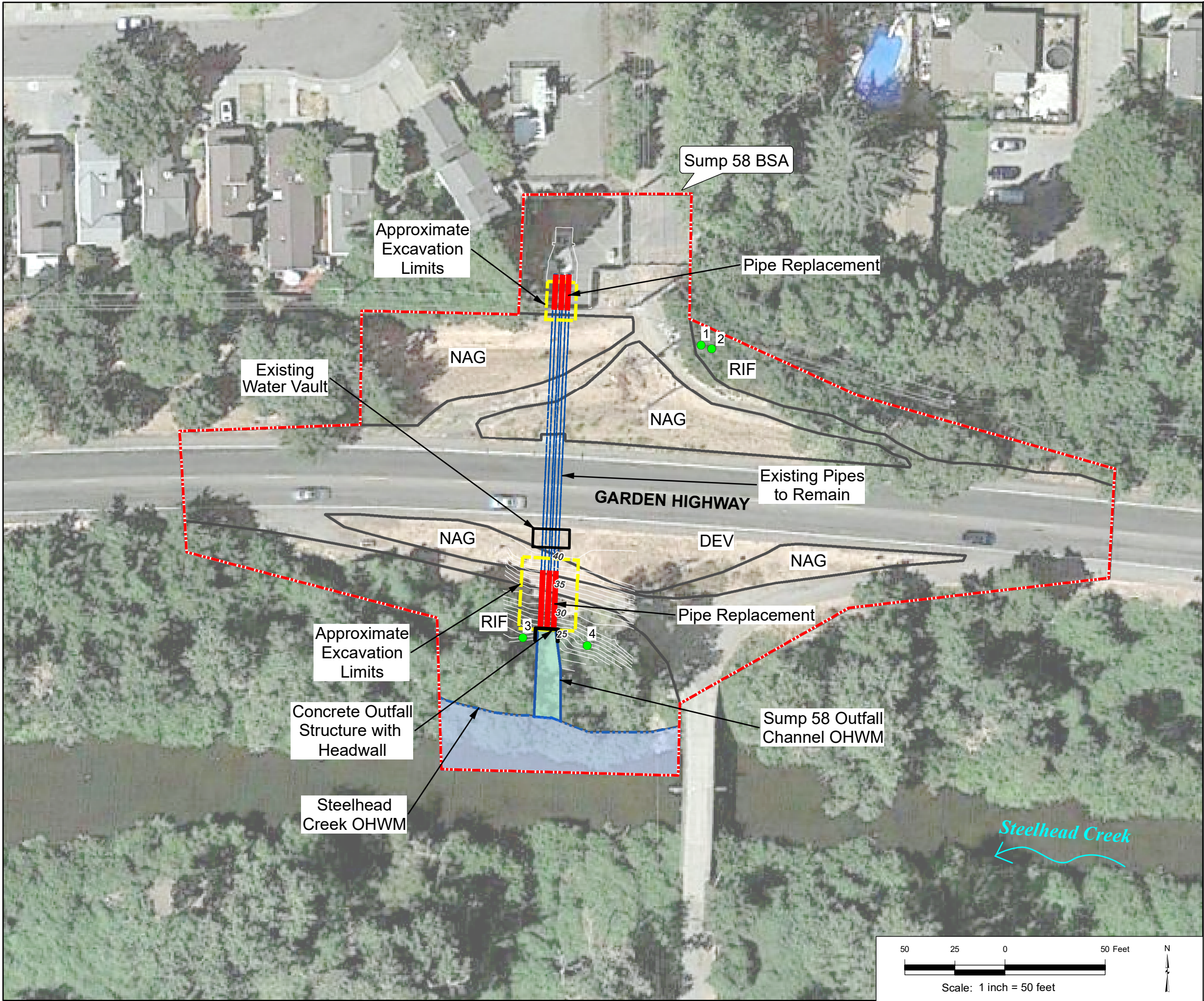
Construction is anticipated to take 4 months during one construction season. Site-specific pipe replacements and other improvements are described in Table 2 and illustrated in Figure 3. A list of recommended mitigation measures to protect the biological resources at each sump is included in Appendix E.

Table 2. Summary of Proposed Work at Each Sump

SUMP	REPLACEMENT TYPE	EXISTING CONDITION	CONSTRUCTION DETAILS
Sump 058	Partial	Sump consists of one 12-inch and two 20-inch WSPs that penetrate the NEMDC levee and outfall into the canal.	<ul style="list-style-type: none"> <li>Replace approximately 59 feet of two 20-inch WSPs at the pump discharge locations and outfall structure</li> <li>Replace approximately 59 feet of one 12-inch WSP at the pump discharge location and outfall structure</li> </ul>
Sump 089	Complete	Sump consists of one 18-inch and three 42-inch welded steel pipes (WSP) that penetrate the Morrison Creek levee and outfall into the creek.	<ul style="list-style-type: none"> <li>Replace three approximately 96-foot of 42-inch WSPs</li> <li>Replace one 112 foot, 18-inch WSP</li> <li>Install positive closure vault at top of the waterside levee hinge point</li> <li>Remove and replace existing floodwall (approx. 300 feet)</li> <li>Replacement of approximately 1,000 sq. feet of concrete apron</li> <li>Replacement of level sensor conduit across levee</li> <li>Outfall structure is submerged and will require a cofferdam for dewatering during pipeline replacement</li> <li>Two trees will be removed to access the outfall structure</li> </ul>
Sump 102	Partial	Sump consists of one 12-inch and three 36-inch WSPs that penetrate the NEMDC levee and outfall into the canal.	<ul style="list-style-type: none"> <li>Replace approximately 16 feet of three 36-inch WSPs at the pump discharge locations and outfall structure</li> <li>Replace approximately 22 feet of one 12-inch WSP at the pump discharge location and outfall structure</li> </ul>
Sump 103	Partial	Sump consists of two 36-inch WSPs that penetrate the Arcade Creek north levee and outfall into Arcade creek.	<ul style="list-style-type: none"> <li>Replace approximately 23 feet of two 36-inch WSPs at the pump discharge locations and outfall structure</li> </ul>
Sump 151	Complete	Sump consists of one 54-inch WSP, one 16-inch WSP, one 42-inch high-density polyethylene (HDPE) pipe, one 42-inch WSP and two 30-inch WSPs that penetrate the American River levee and outfall into the river floodplain. The sump pumps stormwater across the levee into the American River Floodplain Channel.	<ul style="list-style-type: none"> <li>Replace one approximately 146-foot, 54-inch WSP</li> <li>Replace one approximately 146-foot, 42-inch HDPE</li> <li>Replace one approximately 146-foot, 42-inch WSP</li> <li>Replace two approximately 139-foot, 30-inch WSPs</li> <li>Replace one approximately 146-foot, 16-inch WSP</li> <li>Install positive closure vault at top of the waterside levee hinge point</li> <li>Replacement of approximately 2,250 sq. feet of asphalt paving at the south end of the sump station and bike path.</li> </ul>

SUMP	REPLACEMENT TYPE	EXISTING CONDITION	CONSTRUCTION DETAILS
Sump 154	Partial	Sump consists of three 36-inch and one 12-inch WSPs that penetrate Arcade Creek south levee and outfall into Arcade Creek.	<ul style="list-style-type: none"> <li>Replace approximately 30 feet of three 36-inch WSPs at the pump discharge locations and outfall structure</li> </ul>
Sump 155	Complete	Sump consists of one 42-inch corrugated metal pipe (CMP) gravity pipe, and two 36-inch WSPs that penetrate the American River levee and outfall into the river.	<ul style="list-style-type: none"> <li>Widen existing outfall structure to accommodate 2 additional pipes</li> <li>Replace approximately two 175-foot, 36-inch WSPs extending from a concrete apron downslope from the outfall structure with two approximately 142-foot, 36-inch WSPs in the widened outfall structure</li> <li>Replace approximately 142 feet of one 42-inch CMP in the outfall structure</li> <li>Remove concrete apron extending over the river</li> <li>Replace gunite below outfall structure with Class 5 RSP</li> <li>Install positive closure vault at top of waterside levee hinge point</li> <li>Replace gate riser structure and sluice gate at top of levee hinge point</li> <li>Replacement of approximately 250 sq. feet of asphalt paving</li> <li>Install retaining wall at sump station on landside toe of levee</li> <li>Up to four trees may be removed to excavate the pipes on the waterside of the levee.</li> </ul>
Sump 159	Partial	Sump consists of one 36-inch, one 24-inch, and one 12-inch WSPs that penetrate Arcade Creek south levee and outfall into Arcade Creek.	<ul style="list-style-type: none"> <li>Replace approximately 12 feet of one 36-inch WSP at the pump discharge locations and outfall structure</li> <li>Replace approximately 8 feet of one 24-inch WSP at the pump discharge locations and outfall structure</li> <li>Replace approximately 2 feet of one 12-inch WSP at the pump outfall structure</li> </ul>

Figure 3.  
Project Impact Map,  
Sheet 1 of 10, Sump 58



- Biological Study Area (BSA; 1.57 ac)
- Biological Community Boundary
- Sump 58 Outfall Channel
- Steelhead Creek
- Existing Pipes to Remain
- Tree Location and Number
- Approximate Excavation Limits
- Pipe Replacement

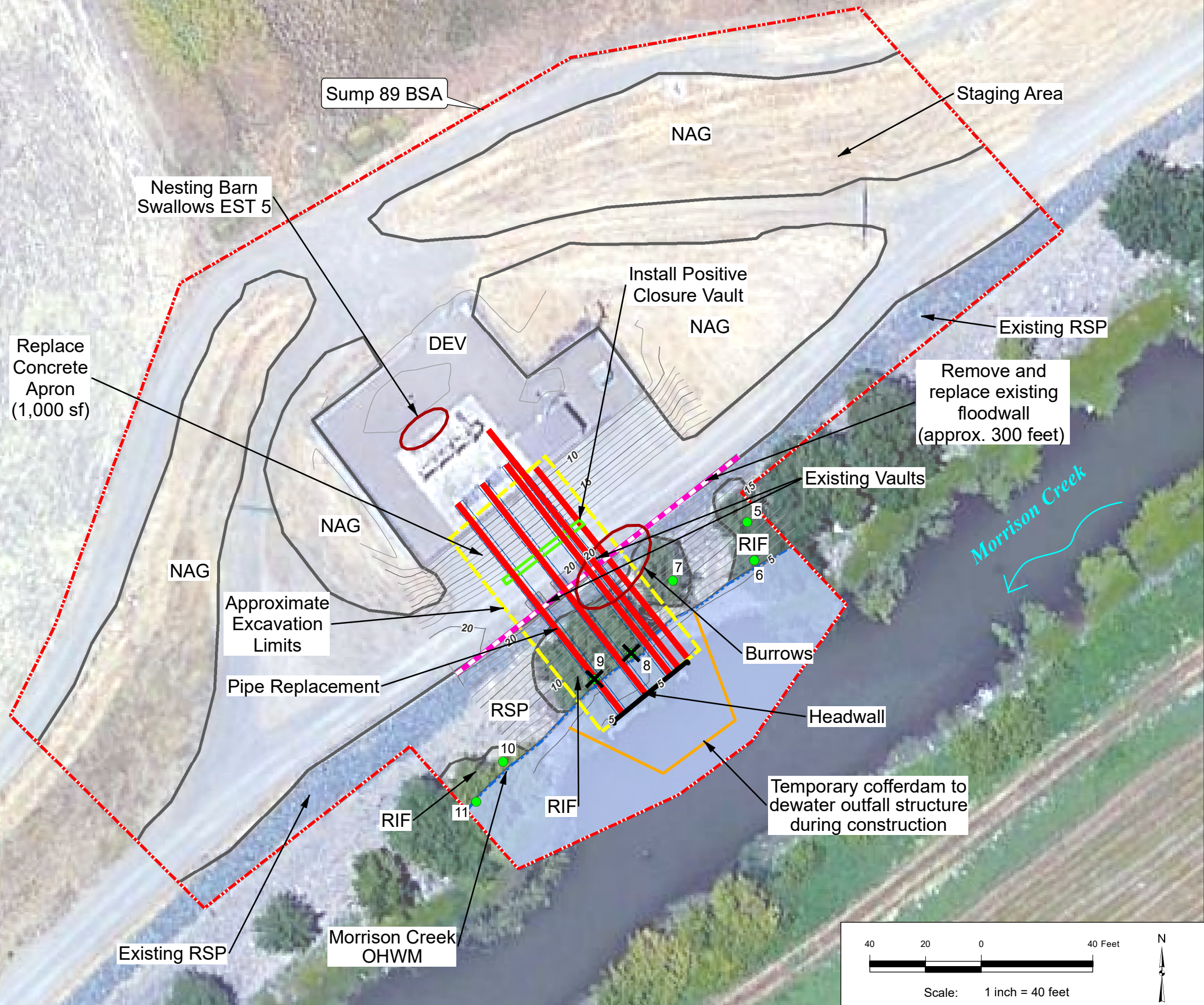
Symbol	Biological Community	Area (ac)	Temporary Impact Area (ac)
Upland			
DEV	Developed/Disturbed	0.88	--
NAG	Nonnative Annual Grassland	0.31	0.04
RIF	Riparian Forest	0.30	0.01
Aquatic			
--	Steelhead Creek	0.07	0
--	Sump 58 Outfall Channel	0.01	0
Total		1.57	0.05



Aerial Photograph: 17 August 2018  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) S58-S89-S151-S155-S102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
Provided by PSOMAS of Auburn, CA  
(19 August 2020)

Figure 3.  
Project Impact Map,  
Sheet 2 of 10, Sump 89



- Biological Study Area (BSA; 1.60 ac)
- Biological Community Boundary
- Morrison Creek OHWM
- Approximate Location of Temporary Cofferdam
- Approximate Excavation Limits
- Pipe Replacement
- Positive Closure Vault
- Proposed Floodwall Replacement
- Tree Location and Number
- Tree to be Removed

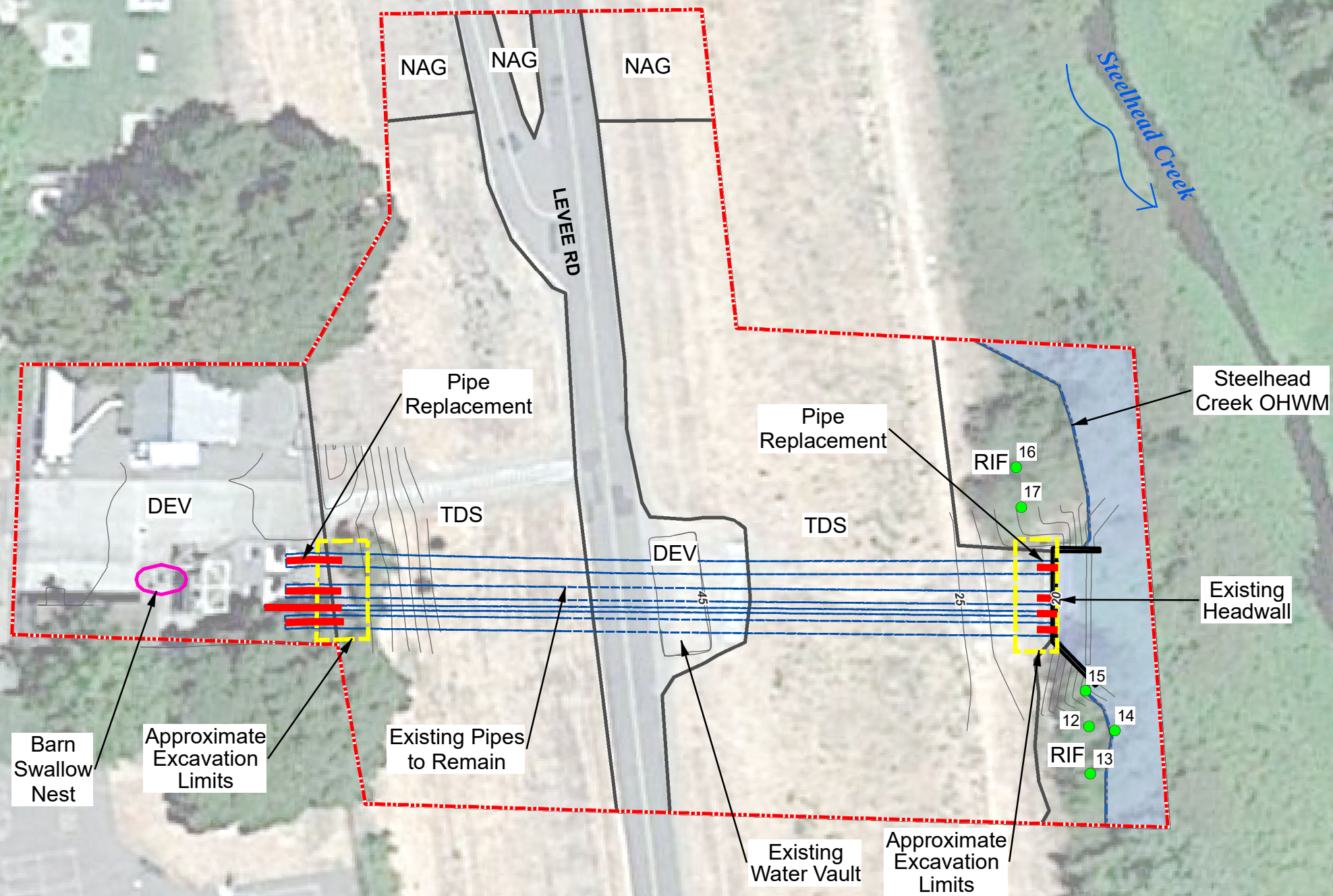
Symbol	Biological Community	Area (ac)	Temporary Impact Area (ac)
Upland			
DEV	Developed/Disturbed	0.72	--
NAG	Nonnative Annual Grassland	0.54	0.53
RIF	Riparian Forest	0.06	0.03
RSP	Existing RSP	0.14	0.02
Aquatic			
--	Morrison Creek	0.14	0.07
Total		1.60	0.65



Aerial Photograph: 11 May 2018  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) 558-589-5151-5155-5102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
Provided by PSOMAS of Auburn, CA  
(19 August 2020)

Figure 3.  
Project Impact Map,  
Sheet 3 of 10, Sump 102



- Biological Study Area (BSA; 0.72 ac)
- Biological Community Boundary
- Steelhead Creek
- Tree Location and Number
- Approximate Excavation Limits
- Pipe Replacement

Note: No vegetation was observed in the temporarily disturbed areas in July 2020 due to ongoing construction.

Symbol	Biological Community	Area (ac)	Temporary Impact Area (ac)
Upland			
DEV	Developed/Disturbed	0.20	--
NAG	Nonnative Annual Grassland	0.03	0
RIF	Riparian Forest	0.04	0.01
TDS	Temporarily Disturbed	0.41	0.11
Aquatic			
--	Steelhead Creek	0.04	0
Total		0.72	0.12



Aerial Photograph: 12 July 2016  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) 958-989-9151-9155-9102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
Provided by PSOMAS of Auburn, CA  
(19 August 2020)

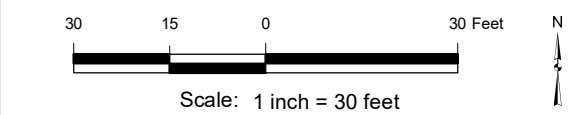
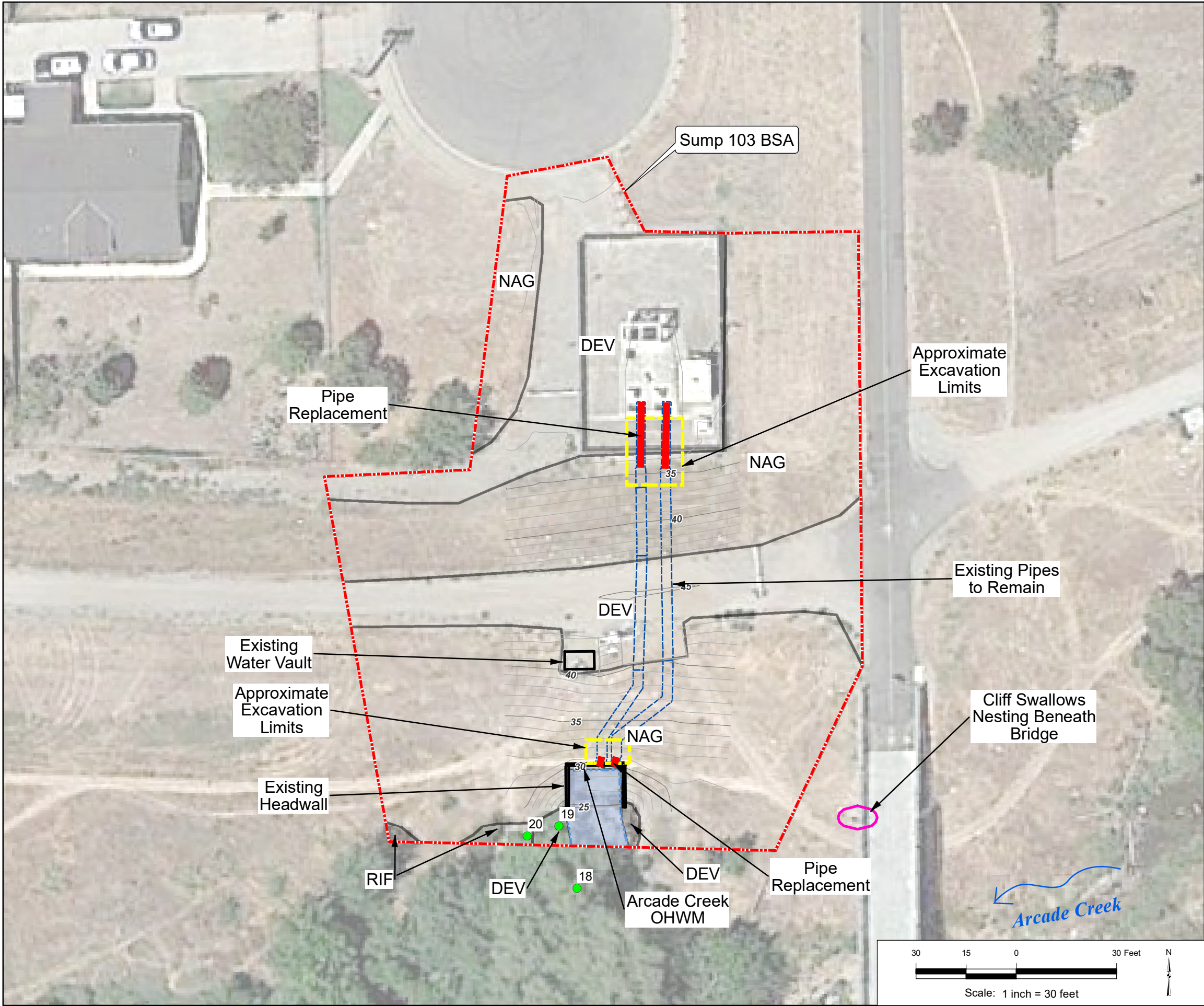


Figure 3.  
Project Impact Map,  
Sheet 4 of 10, Sump 103



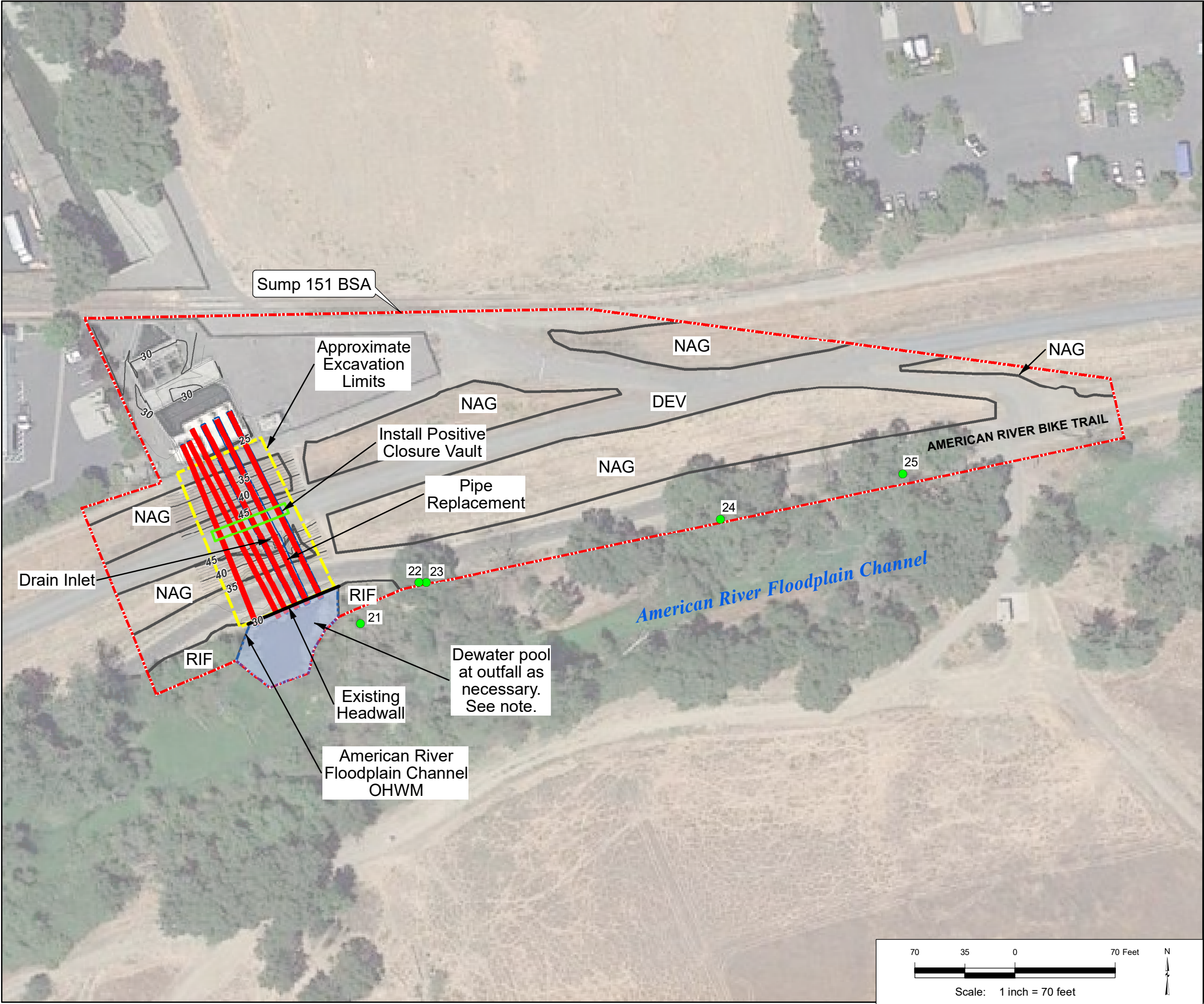
- Biological Study Area (BSA; 0.57 ac)
- Biological Community Boundary
- Arcade Creek
- Tree Location and Number
- Approximate Excavation Limits
- Pipe Replacement

Symbol	Biological Community	Area (ac)	Temporary Impact Area (ac)
Upland			
DEV	Developed/Disturbed	0.20	--
NAG	Nonnative Annual Grassland	0.36	0.04
RIF	Riparian Forest	<0.01 ac (143 sf)	0
Aquatic			
--	Arcade Creek	0.01	0
Total		0.57	0.04



Aerial Photograph: 14 July 2015  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) S58-S89-S151-S155-S102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
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Pump Outfalls Replacement Project  
City of Sacramento, CA  
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Figure 3.  
Project Impact Map,  
Sheet 5 of 10, Sump 151

- Biological Study Area (BSA; 2.52 ac)
- Biological Community Boundary
- American River Floodplain Channel
- Tree Location and Number
- Approximate Excavation Limits
- Pipe Replacement
- Positive Closure Vault

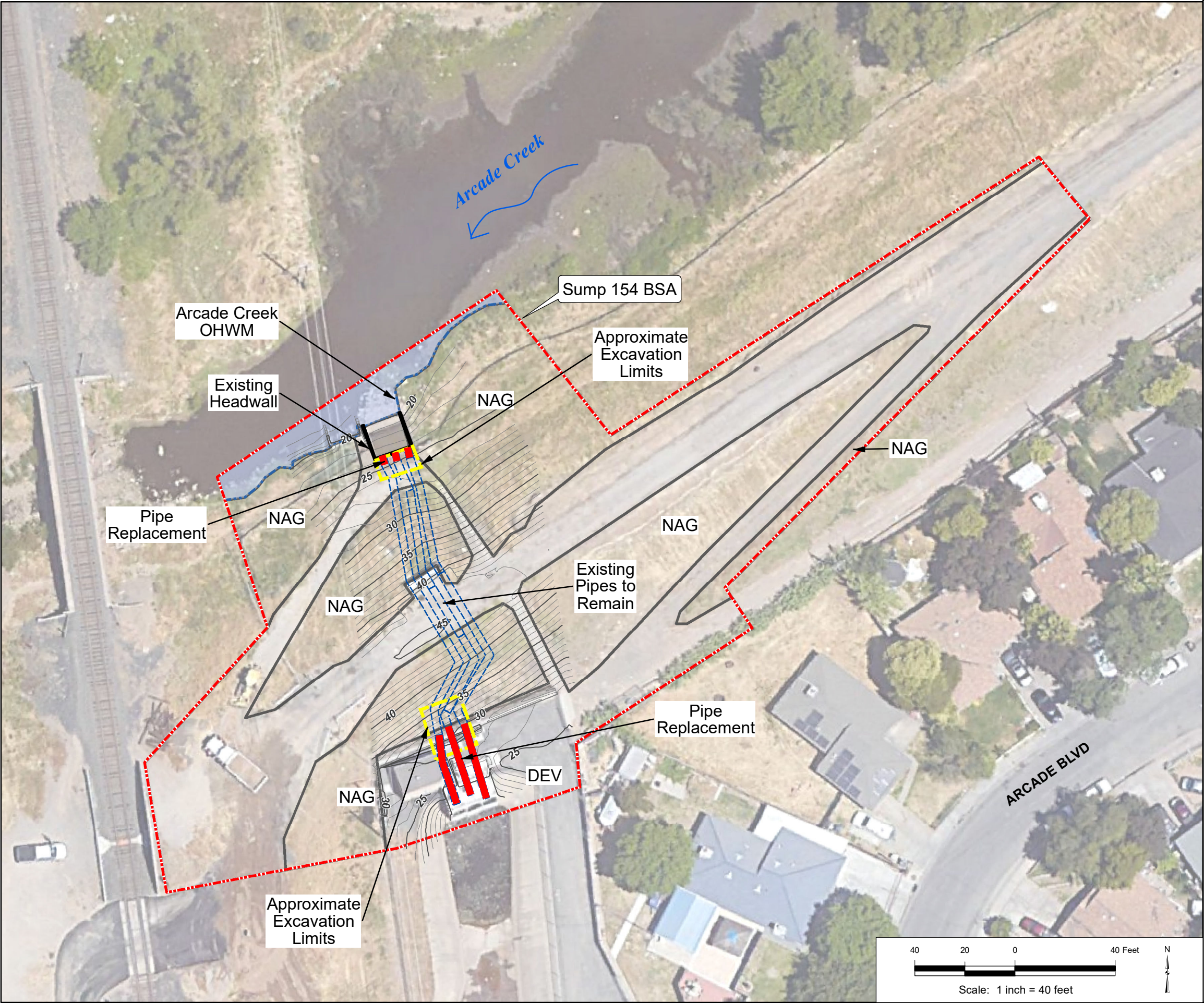
Symbol	Biological Community	Area (ac)	Temporary Impact Area (ac)
Upland			
DEV	Developed/Disturbed	1.60	--
NAG	Nonnative Annual Grassland	0.81	0.08
RIF	Riparian Forest	0.05	< 0.01 ac (162 sf)
Aquatic			
--	American River Floodplain Channel	0.06	0.06
Total		2.52	0.14

Note: Temporary impacts to Riparian Forest and American River Floodplain Channel result from potential dewatering of the outfall pool.



Aerial Photograph: 12 July 2016  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) S58-S89-S151-S155-S102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
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Pump Outfalls Replacement Project  
City of Sacramento, CA  
3 September 2020

Figure 3.  
Project Impact Map,  
Sheet 6 of 10, Sump 154

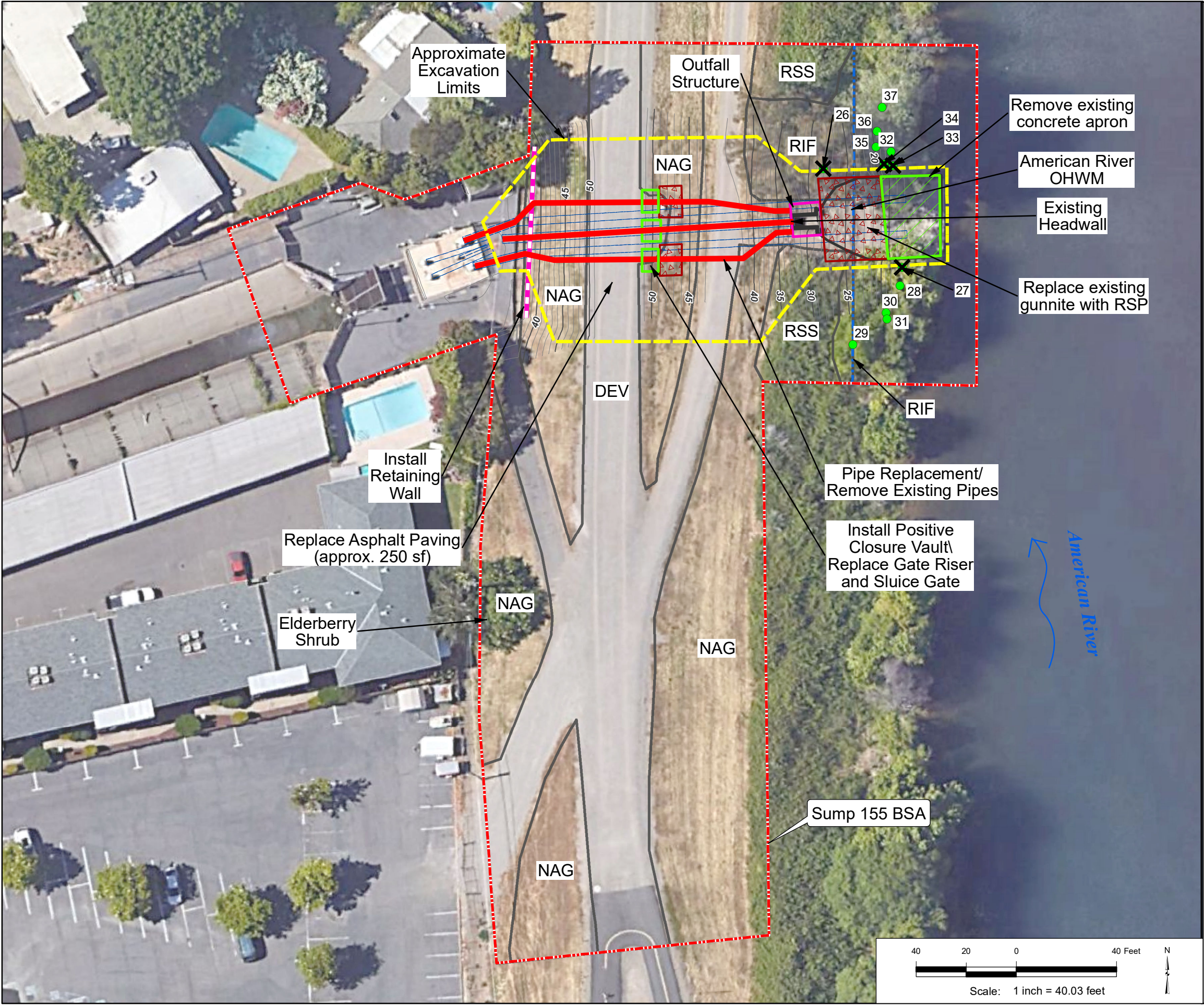
- Biological Study Area (BSA; 1.00 ac)
- Biological Community Boundary
- Arcade Creek
- Approximate Excavation Limits
- Pipe Replacement

Symbol	Biological Community	Area (ac)	Temporary Impact Area (ac)
Upland			
DEV	Developed/Disturbed	0.50	--
NAG	Nonnative Annual Grassland	0.47	0.07
Aquatic			
--	Arcade Creek	0.03	0
Total		1.00	0.07



Aerial Photograph: 11 May 2018  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) 558-589-5151-5155-5102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
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Pump Outfalls Replacement Project  
City of Sacramento, CA  
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Figure 3.  
Project Impact Map,  
Sheet 7 of 10, Sump 155

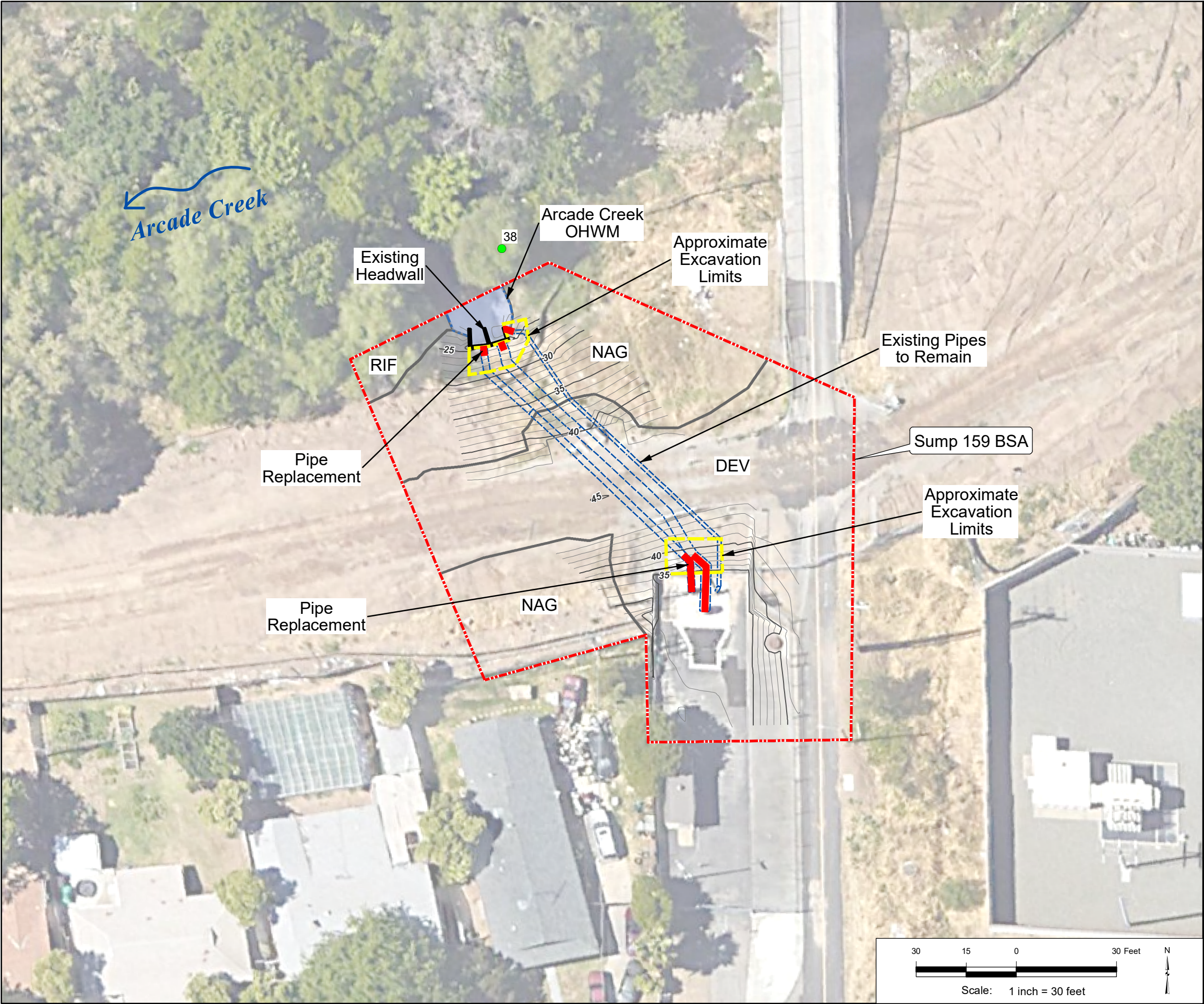
- Biological Study Area (BSA; 1.33 ac)
- Biological Community Boundary
- American River
- Approximate Excavation Limits
- Pipe Replacement
- Positive Closure Vault
- Proposed Retaining Wall
- Tree Location and Number
- Tree to be Removed
- Existing Apron to be Removed
- Rock Slope Protection (RSP)
- New Outfall Structure

Symbol	Biological Community	Area (ac)	Permanent Impact Area (ac)	Temporary Impact Area (ac)
Upland				
DEV	Developed/Disturbed	0.58	--	--
NAG	Nonnative Annual Grassland	0.50	< 0.01 ac (187 sf)	0.11
RSS	Riparian Scrub Shrub	0.05	< 0.01 ac (38 sf)	0.02
RIF	Riparian Forest	0.05	< 0.01 ac (67 sf)	0.03
Aquatic				
--	American River	0.15	0	0.05
Total		1.33	0.01	0.21



Aerial Photograph: 11 May 2018  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) S58-S89-S151-S155-S102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
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(19 August 2020)



Pump Outfalls Replacement Project  
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Figure 3.  
Project Impact Map,  
Sheet 8 of 10, Sump 159

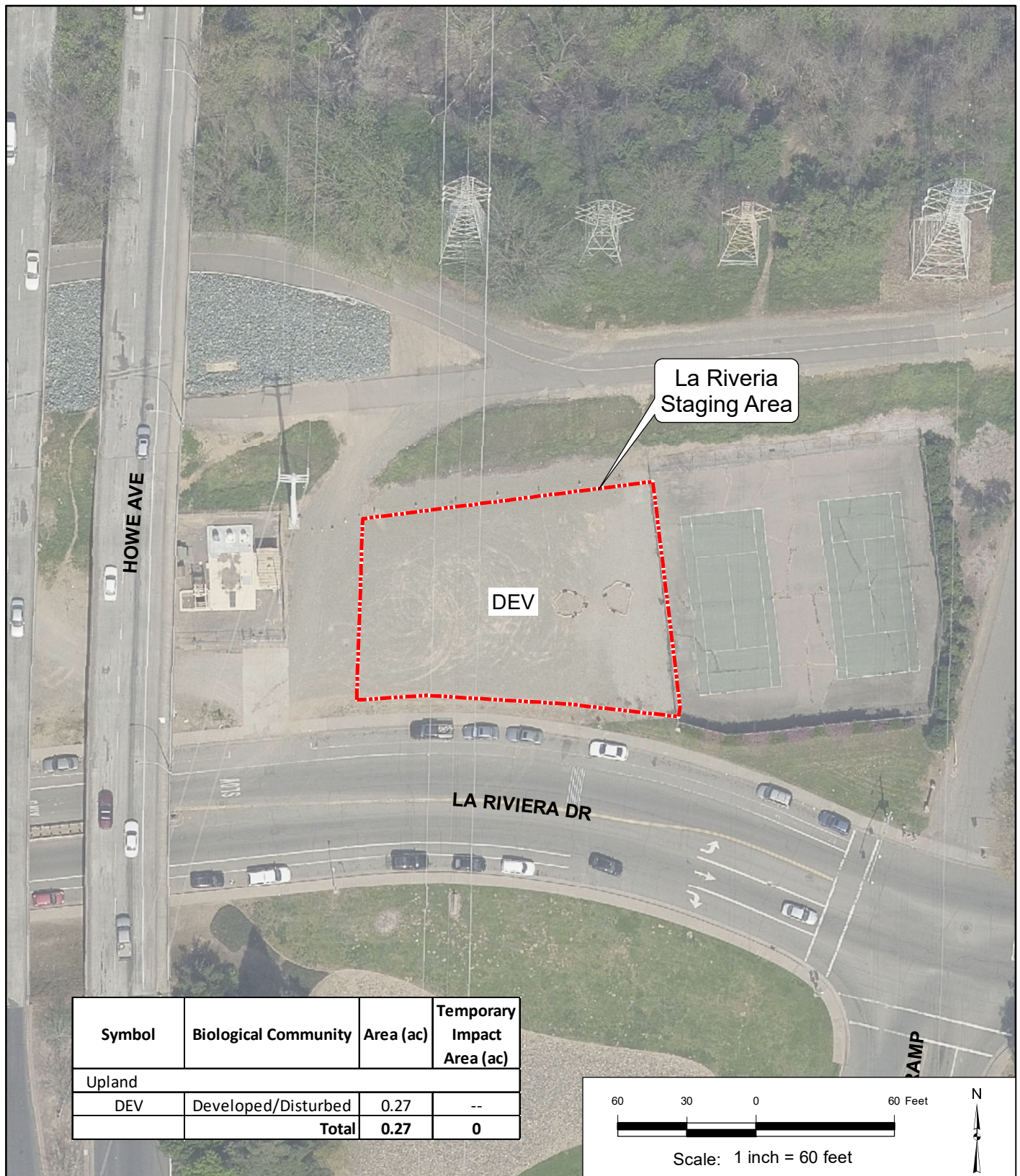
- Biological Study Area (BSA; 0.34 ac)
- Biological Community Boundary
- Arcade Creek
- Tree Location and Number
- Approximate Excavation Limits
- Pipe Replacement

Symbol	Biological Community	Area (ac)	Temporary Impact Area (ac)
Upland			
DEV	Developed	0.20	--
NAG	Nonnative Annual Grassland	0.12	0.02
RIF	Riparian Forest	0.01	0
Aquatic			
--	Arcade Creek	0.01	0
Total		0.34	0.02




Aerial Photograph: 11 May 2018  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) S58-S89-S151-S155-S102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
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Pump Outfalls Replacement Project  
 City of Sacramento, CA  
 3 September 2020

 Biological Study Area (BSA)


 **SYCAMORE**  
 Environmental  
 Consultants, Inc.

Figure 3. Project Impact Map,  
 Sheet 9 of 10, La Riviera Staging Area

Aerial Photograph: 7 November 2019  
 GEO1 Vivid Maxar Imagery  
 ESRI Arcmap Basemap Service Layer



Pump Outfalls Replacement Project  
City of Sacramento, CA  
3 September 2020

 Biological Study Area (BSA)

 **SYCAMORE**  
Environmental  
Consultants, Inc.

Figure 3. Project Impact Map,  
Sheet 10 of 10, Lathrop Staging Area

Aerial Photograph: 7 November 2019  
GEO1 Vivid Maxar Imagery  
ESRI Arcmap Basemap Service Layer

### **III. STUDY METHODS**

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#### **A. Studies Conducted**

Studies included a general biological field survey, a botanical survey, and an aquatic resource delineation. Biological resource data from state and federal agencies; maps, aerial photographs, and published literature were reviewed and analyzed. An evaluation of biological resources was conducted to determine if any state or federal-listed special-status plant or wildlife species or their habitat could occur in and/or be affected by the Project. Sensitive biological resources were identified and mapped during field surveys.

#### **B. Biological Study Area**

The 11.44-acre BSA is shown on Figures 2-4. The BSA includes the areas anticipated to be disturbed by the Project and a portion of the receiving waterbody at the sump outfalls. The BSA includes two off-site staging areas consisting of developed/disturbed land that is used for staging under baseline conditions. The physical and biological conditions in the BSA are discussed in Section IV (Environmental Setting).

#### **C. Literature and Database Review**

Sycamore Environmental obtained lists from the U.S. Fish and Wildlife Service (USFWS Sacramento Office, unofficial list dated 13 July 2020) and the National Marine Fisheries Service (NMFS; unofficial list 17 July 2020) that identify federal-listed species and critical habitat that could potentially occur in or could be affected by the Project. The California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) Inventory were queried for known records of special-status species in the vicinity of the BSA, on the three Project USGS quadrangles (quads). Resource agency lists and database query results are in Appendix A.

Lists of CDFW special-status species reviewed included Special Animals (CDFW 2019c), State and Federally Listed Endangered and Threatened Animals of California (CDFW 2019c), Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2019b), and State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2019a).

#### **D. Survey Dates and Personnel**

Biological and botanical fieldwork was conducted on 22 and 23 July 2020 by Sycamore Environmental biologists Mike Bower, M.S., and Monica Coll, B.A. The Lathrop Staging Area was surveyed on 26 August 2020 by biologist Kalia Schuster, M.S. The La Riviera Staging Area was surveyed on 28 August 2020 by ecologist Jessie Quinn, Ph.D.

## **E. Field Survey Methods**

### **Biological Survey**

The biological survey was performed by walking through the BSA while looking for special-status wildlife species, their sign, and their habitat. Areas adjacent to the BSA were also inspected for sensitive habitat features, such as elderberry (*Sambucus* sp.) shrubs, sensitive aquatic habitat, nesting raptors, and burrows potentially suitable for burrowing owl. The location of protected biological resources and important habitat features were recorded on field maps and/or with a sub-meter accurate GPS unit. Wildlife species observed in the BSA are listed in Appendix C.

### **Botanical Survey**

The botanical survey followed USFWS (2000) and CDFW (2018) guidelines, where applicable. The botanical survey was “floristic,” meaning that every plant taxon found was identified to the taxonomic level necessary to determine rarity and listing status. The survey was conducted by botanists familiar with the local flora and special-status plant taxa with potential to occur. Plant species were either identified on-site or were collected and identified later using dichotomous keys in the Jepson Manual, 2<sup>nd</sup> ed. (Baldwin et al., eds. 2012). Plant species observed in the BSA are listed in Appendix C. Approximately 16 person-hours were spent in the field during the July 2020 survey. The botanical survey included classification and mapping of natural communities using methods and vegetation alliance membership rules in *A Manual of California Vegetation*, 2<sup>nd</sup> edition (Sawyer et al. 2009). The CDFW (2019d) *California Natural Community List* was reviewed to verify vegetation alliance rarity ranks and determine if any sensitive vegetation alliances or associations occur in the BSA. On 17 July 2020 botanist Mike Bower visited a reference population of Sanford’s arrowhead (*Sagittaria sanfordii*) growing in a ditch approximately 1,800 feet southwest of Sump 155. The Sanford’s arrowhead plants were evident and identifiable based on abundant flowers and fruits.

### **Aquatic Resource Survey**

An aquatic resource survey was conducted in accordance with standard U.S. Army Corps of Engineers Wetland Delineation Manual methods (Corps 1987). The results of a concurrently prepared aquatic resources delineation report (Sycamore Environmental 2020) have been incorporated in mapping and resource documentation presented in this report.

### **Staging Areas**

The Lathrop and La Riviera staging areas were evaluated via aerial photos, communication with the City’s engineer, and site visits by biologists to confirm the areas’ current conditions.

## **F. Mapping**

Sycamore Environmental mapped observed biological resources with a handheld TDC-100 Global Positioning System (GPS) unit equipped with an R-1 receiver. The GPS data were exported to Google Earth, where feature boundaries were completed with the aid of

photographs and field notes. The GPS data and Google Earth polygons were exported to ArcGIS and aligned with the aerial imagery to create Figure 4. The 7 November 2019 aerial photograph in Figure 2 was downloaded from ESRI World Basemap Imagery. The aerial photographs used in Figures 3 and 4 range from 14 July 2015 to 17 August 2018, and were downloaded from Google Earth.

#### **G. Problems Encountered and Limitations That May Influence Results**

Dry conditions can affect the ability to detect some plant species, particularly annual plants, which may not germinate if precipitation is not sufficient to trigger germination. Existing field conditions were drier than normal preceding the botanical survey in July 2020 (see discussion of weather conditions in Section IV.B). However, the vegetation did not appear to be affected by the dry conditions, probably because ample precipitation was recorded earlier in the wet season. Special-status plants with potential to occur in the BSA are all perennial wetland species that would be expected to remain evident and identifiable even under drought conditions. A nearby reference population of Sanford's arrowhead was visited during the week prior to the botanical survey to verify that species would be evident and identifiable. Numerous plants in full flower and fruit were observed at the reference population. The dry conditions did not substantially influence the results of the surveys.

The general biological survey may not necessarily have detected cryptic, fossorial, migratory, aestivating, or nocturnal wildlife species. Such species with habitat in the BSA could be present in or periodically utilize suitable habitat in the BSA even if not observed during a general biological survey. Sign of such species (potentially occupied burrows, feathers, excrement, carcasses, etc.) was recorded if observed.

## IV. ENVIRONMENTAL SETTING

The approximately 11.44-acre BSA is located in the City of Sacramento. The eight sump locations occur along major levees bordering rivers and creeks within the City limits. The elevation in the BSA ranges from 7 to 52 feet above sea level. Land use surrounding the sump sites on the land side of the levees generally consists of residential neighborhoods and commercial buildings. Sump 089 is more rural and is bordered by agricultural fields. All sump sites are bordered by a receiving waterbody at the sump outfall location. Two sumps (58 and 102) are located along Steelhead Creek. One (Sump 089) is located along Morrison Creek. Three (Sumps 103, 154, and 159) are located along Arcade Creek. One (Sump 151) is located along a channel on the American River floodplain and one (Sump 155) is located along the American River. The Lathrop and La Riviera staging areas are developed/disturbed areas used for staging and stockpiling under baseline conditions. Land use surrounding the La Riviera Staging Area consists of roads and residential properties. Land use surrounding the Lathrop Staging Area consists of commercial buildings, the American River Parkway and a small area vegetated with oak woodland.

### A. Soils

Seven soil units occur in the BSA (NRCS 2020b). These soils are listed in Table 3, by sump, and briefly described below. Detailed descriptions of these soils, including typical soil profiles, and profiles observed in soil pits excavated during fieldwork, and a soils map are presented in the Aquatic Resources Delineation Report (Sycamore Environmental 2020).

Table 3. Soil Units Present at Sump Sites and Staging Areas

SUMP	MAPPED SOIL UNIT(S)
58	Sailboat Silt Loam, Partially Drained, 0 to 2 Percent Slopes
89	Egbert Clay, Partially Drained, 0 to 2 Percent Slopes Egbert Clay, Partially Drained, 0 to 2 Percent Slopes, Frequently Flooded
102	Cosumnes Silt Loam, Drained, 0 to 2 Percent Slopes
103	San Joaquin – Urban Land Complex, 0 to 3 Percent Slopes
151	Columbia Sandy Loam, Drained, 0 to 2 Percent Slopes Columbia Sandy Loam, Drained, 0 to 2 Percent Slopes, Occasionally Flooded
154	Dierssen Sandy Loam, Drained, 0 to 2 Percent Slopes San Joaquin – Urban Land Complex, 0 to 3 Percent Slopes
155	Rossmoor – Urban Land Complex, 0 to 2 Percent Slopes
159	San Joaquin – Urban Land Complex, 0 to 3 Percent Slopes
Lathrop	Columbia Sandy Loam, Drained, 0 to 2 Percent Slopes
La Riviera	Rossmoor – Urban Land Complex, 0 to 2 Percent Slopes

### **Sailboat Silt Loam, Partially Drained**

The Sailboat Series soils are on natural levees of large rivers and sloughs and on narrow low flood plains of rivers and streams. The soils formed in medium textured recent alluvium from mixed sources. This series is very deep, somewhat poorly drained with slow runoff and moderately slow permeability.

### **Egbert Clay, Partially drained**

The Egbert Series soils are in nearly level to gently sloping flood plains, in backswamps or basins of river deltas. The soils formed in alluvium weathered from mixed sources. This series consists of very deep, poorly drained soils. Surface runoff and permeability are very slow. Levees and drains are required to control both surface and subsurface water. Soil horizons present in a typical profile of Egbert Series are as follows:

### **Cosumnes Silt Loam, Drained**

The Cosumnes Series soils are on low flood plains. The soils formed in alluvium from mixed sources including granitic, metasedimentary and metamorphosed igneous rocks. This series is somewhat poorly drained with very slow and slow runoff and slow permeability.

### **San Joaquin-Urban Land Complex**

The San Joaquin Series soils are on hummocky, nearly level to undulating terraces at elevations of about 20 to 500 feet. The soils formed in alluvium from mixed but mainly granitic rock sources. This series is well and moderately well drained with medium to very high runoff and very slow permeability.

### **Columbia Sandy Loam, Drained, Occasionally flooded**

The Columbia Series soils are on flood plains with bar and channel topography in some natural areas or are on natural levees. The soils formed in alluvium from mixed sources. This series is moderately well drained with negligible to medium runoff and moderately rapid permeability.

### **Dierssen Sandy Loam, Drained**

The Dierssen Series soils are on basin rims. The soils formed in alluvium derived from mixed but dominantly granitic sources. This series is somewhat poorly drained with very slow runoff and slow permeability.

### **Rossmoor-Urban land Complex**

The Roddmoor Series soils are on high flood plains. The soils formed in alluvium derived from mixed rock sources. This series is well drained with slow runoff and moderately rapid permeability.

## **B. Weather Conditions**

Sump site field surveys were conducted on 22 and 23 July 2020. The weather was sunny, clear, and calm on both days. Precipitation preceding the surveys was calculated using data

from the nearby Sacramento Gauge (SCR). From 1 October 2019 through 21 July 2020, the SCR gauge received 10.9 inches of rain, 61.8% of the average precipitation for that period (CDEC 2020). The SCR Gauge is located approximately 2 miles south of Sump 058. All sump sites are at similar elevation and would be expected to receive similar amounts of precipitation as the SCR gauge. Existing field conditions were drier than normal preceding the surveys in July 2020.

### **C. Natural Communities**

Natural communities are defined by species composition and relative abundance. Natural communities described below correlate where applicable with *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009), and the most recent *California Natural Communities List* (CDFW 2019d). Natural communities are shown on Figure 4 and their acreages are in Table 4. Photographs of the BSA are in Appendix D.

Table 4. Natural Communities.

NATURAL COMMUNITY	VEGETATION ALLIANCES / ASSOCIATIONS (CDFW CODE / RARITY RANK) <sup>1</sup>	SENSITIVE? <sup>2</sup>	AREA IN BSA (ACRES) <sup>3</sup>	TEMP. IMPACT (ACRES) <sup>3</sup>	PERM. IMPACT (ACRES)
<b><i>Upland Communities</i></b>					
Nonnative Annual Grassland	<i>Avena</i> spp. – <i>Bromus</i> spp. Semi-Natural Alliance (42.027.00 / No Rank)	No	3.14	0.89	<0.01 (187 ft <sup>2</sup> )
Developed / Disturbed	None recognized	No	6.67	--	--
Riparian Forest	<i>Quercus lobata</i> Alliance (71.040.00 / G3 S3) <i>Salix exigua</i> Alliance (61.209.00 / G5 S4) <i>Salix gooddingii</i> – <i>Salix laevigata</i> Alliance (61.216.00 / G4 S3) <i>Populus fremontii</i> / <i>Vitus californica</i> Association (61.130.13 / G4 S3)	Yes (Riparian)	0.51	0.08	<0.01 (67 ft <sup>2</sup> )
Riparian Scrub Shrub	<i>Rubus armeniacus</i> Alliance (63.906.01 / No Rank)	Yes (Riparian)	0.05	0.02	<0.01 (38 ft <sup>2</sup> )
Temporarily Disturbed	None recognized	No	0.41	--	--
Existing RSP	None recognized	No	0.14	0.02	--
<b><i>Aquatic Communities</i></b>					
Arcade Creek	None recognized	Yes (Water)	0.05	0	--
Steelhead Creek	None recognized	Yes (Water)	0.11	0	--
American River Floodplain Channel	None recognized	Yes (Water)	0.06	0.06	--
American River	None recognized	Yes (Water)	0.15	0.05	--
Morrison Creek	None recognized	Yes (Water)	0.14	0.07	--
Sump 058 Outfall Channel	None recognized	Yes (Water)	0.01	0	--
<b>Total:</b>			<b>11.44</b>	<b>1.19</b>	<b>0.01</b>

<sup>1</sup> Vegetation alliances based on descriptions and classification methods in Sawyer et al. (2009) and A Manual of California Vegetation, Online Version (CNPS 2020b). Alliance codes and ranks are from CDFW (2019d). Rarity ranks of State (S) 1 – 3 are considered imperiled. Communities may lack recognized alliances if they lack vegetation, occupy a small area, or are dominated by nonnatives.

<sup>2</sup> Sensitive natural communities include wetlands, waters, riparian vegetation, and vegetation alliances ranked S1 – S3. Waters listed here are potentially jurisdictional under the Clean Water Act, per the aquatic resources delineation report (Sycamore Environmental 2020).

<sup>3</sup> Acreages were calculated using AutoCAD or ArcMap functions. Temporary impacts are summed across all eight sump sites. Impacts are not calculated for disturbed/developed areas.

Figure 4.  
Biological Resources Map,  
Sheet 1 of 10, Sump 58



- Biological Study Area (BSA; 1.57 ac)
- Sump 58 Outfall Channel OHWM
- Steelhead Creek OHWM
- Riparian Forest (RIF)
- Nonnative Annual Grassland (NAG)
- Developed (DEV)
- Tree Location and Number

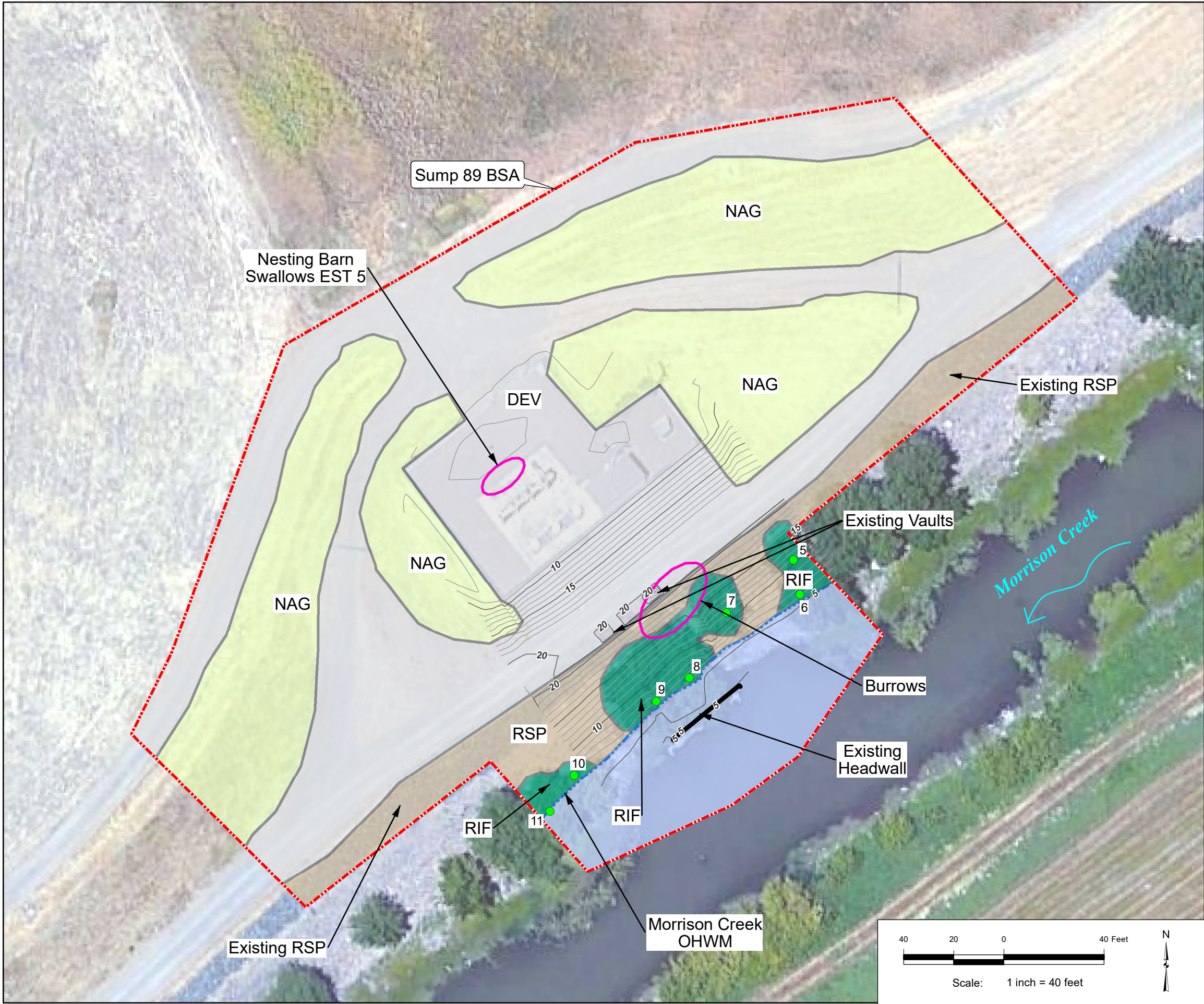
Symbol	Biological Community	Area (ac)
Upland		
DEV	Developed/Disturbed	0.88
NAG	Nonnative Annual Grassland	0.31
RIF	Riparian Forest	0.30
Aquatic		
--	Steelhead Creek	0.07
--	Sump 58 Outfall Channel	0.01
Total		1.57



Aerial Photograph: 17 August 2018  
Google Earth Imagery

Proposed/Topographic Survey Data:  
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(19 August 2020)

Figure 4.  
Biological Resources Map,  
Sheet 2 of 10, Sump 89



- Biological Study Area (BSA; 1.60 ac)
- Riparian Forest (RIF)
- Morrison Creek OHRM
- Nonnative Annual Grassland (NAG)
- Existing RSP (RSP)
- Developed (DEV)
- Tree Location and Number

Symbol	Biological Community	Area (ac)
Upland		
DEV	Developed/Disturbed	0.72
NAG	Nonnative Annual Grassland	0.54
RIF	Riparian Forest	0.06
RSP	Existing RSP	0.14
Aquatic		
--	Morrison Creek	0.14
Total		1.60



Aerial Photograph: 11 May 2018  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) S58-S89-S151-S155-S102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
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(19 August 2020)

Figure 4.  
Biological Resources Map,  
Sheet 3 of 10, Sump 102

- Biological Study Area (BSA; 0.72 ac)
- Steelhead Creek
- Nonnative Annual Grassland (NAG)
- Riparian Forest (RIF)
- Developed/Disturbed (DEV)
- Temporarily Disturbed (TDS)
- Tree Location and Number

Note: No vegetation was observed in the temporarily disturbed areas in July 2020 due to ongoing construction.

Symbol	Biological Community	Area (ac)
Upland		
DEV	Developed/Disturbed	0.20
NAG	Nonnative Annual Grassland	0.03
RIF	Riparian Forest	0.04
TDS	Temporarily Disturbed	0.41
Aquatic		
--	Steelhead Creek	0.04
Total		0.72









Aerial Photograph: 12 July 2016  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) 958-989-S151-S155-S102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
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Figure 4.  
Biological Resources Map,  
Sheet 4 of 10, Sump 103

-  Biological Study Area (BSA; 0.57 ac)
-  Arcade Creek
-  Riparian Forest (RIF)
-  Nonnative Annual Grassland (NAG)
-  Developed (DEV)
-  Tree Location and Number

Symbol	Biological Community	Area (ac)
Upland		
DEV	Developed/Disturbed	0.20
NAG	Nonnative Annual Grassland	0.36
RIF	Riparian Forest	< 0.01 ac (143 sf)
Aquatic		
--	Arcade Creek	0.01
Total		0.57



Aerial Photograph: 14 July 2015  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) 558-589-5151-5155-5102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
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(19 August 2020)

Figure 4.  
Biological Resources Map,  
Sheet 5 of 10, Sump 151

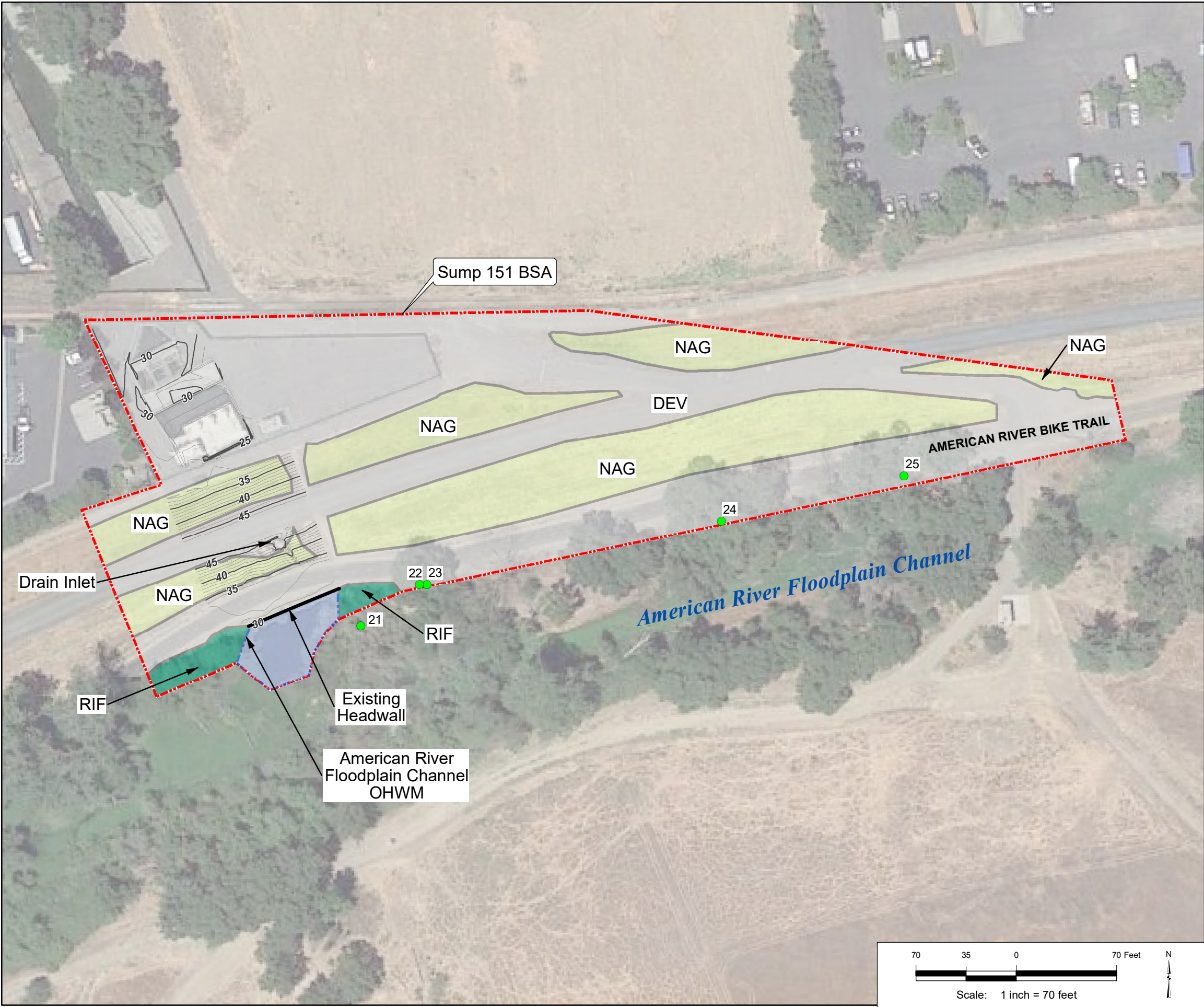
- Biological Study Area (BSA; 2.52 ac)
- American River Floodplain Channel
- Riparian Forest (RIF)
- Nonnative Annual Grassland (NAG)
- Developed/Disturbed (DEV)
- Tree Location and Number

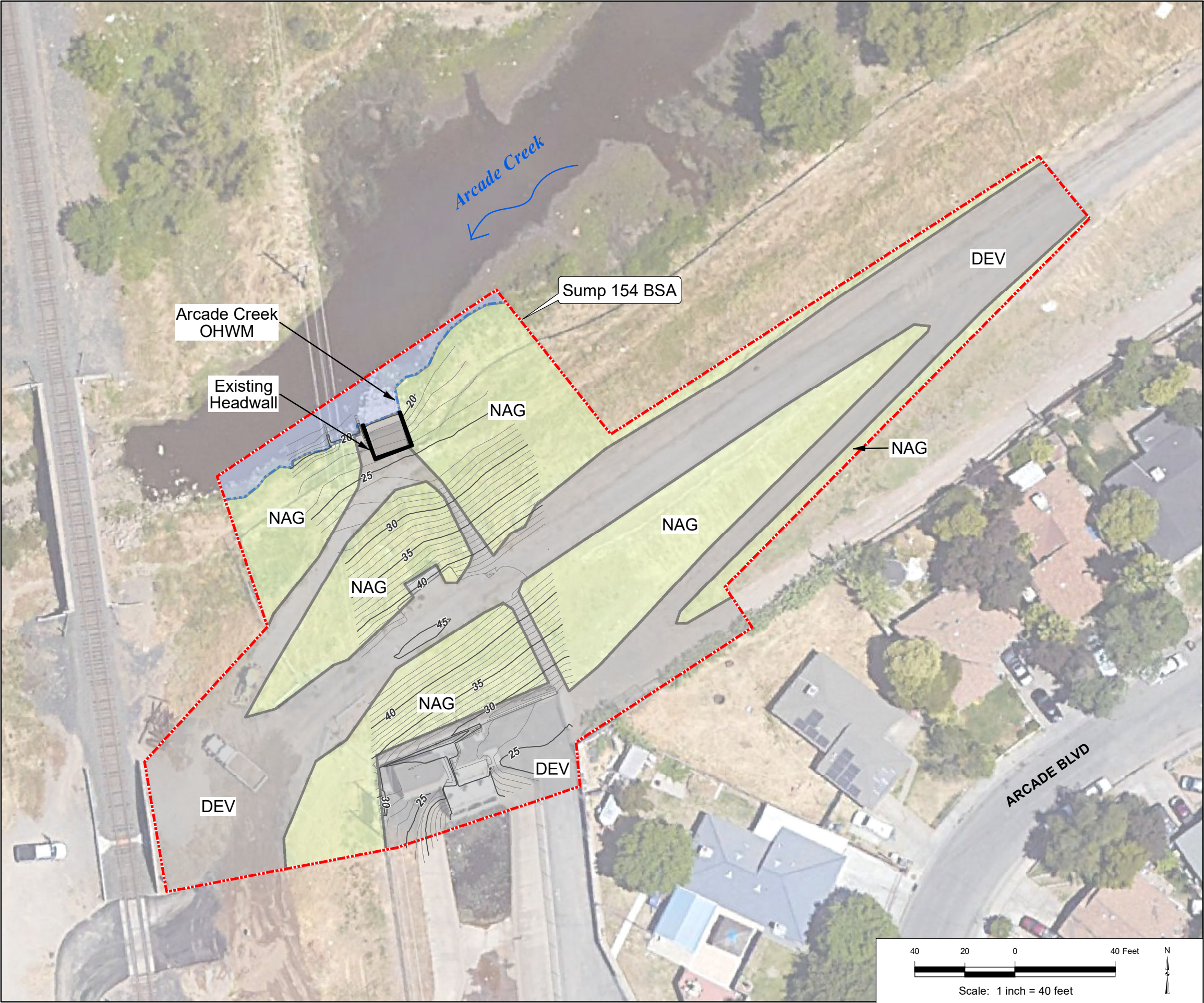
Symbol	Biological Community	Area (ac)
Upland		
DEV	Developed/Disturbed	1.60
NAG	Nonnative Annual Grassland	0.81
RIF	Riparian Forest	0.05
Aquatic		
--	American River Floodplain Channel	0.06
Total		2.52



Aerial Photograph: 12 July 2016  
Google Earth Imagery

Proposed/Topographic Survey Data:  
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Pump Outfalls Replacement Project  
City of Sacramento, CA  
27 August 2020

Figure 4.  
Biological Resources Map,  
Sheet 6 of 10, Sump 154

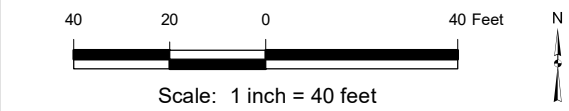
- Biological Study Area (BSA; 1.00 ac)
- Nonnative Annual Grassland (NAG)
- Developed (DEV)
- Arcade Creek

Symbol	Biological Community	Area (ac)
Upland		
DEV	Developed/Disturbed	0.50
NAG	Nonnative Annual Grassland	0.47
Aquatic		
--	Arcade Creek	0.03
Total		1.00



Aerial Photograph: 11 May 2018  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) 558-589-5151-5155-5102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
Provided by PSOMAS of Auburn, CA  
(19 August 2020)





Pump Outfalls Replacement Project  
City of Sacramento, CA  
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Figure 4.  
Biological Resources Map,  
Sheet 7 of 10, Sump 155

- Biological Study Area (BSA; 1.33 ac)
- American River
- Nonnative Annual Grassland (NAG)
- Developed (DEV)
- Riparian Scrub Shrub (RSS)
- Riparian Forest (RIF)
- Tree Location and Number

Symbol	Biological Community	Area (ac)
Upland		
DEV	Developed/Disturbed	0.58
NAG	Nonnative Annual Grassland	0.50
RSS	Riparian Scrub Shrub	0.05
RIF	Riparian Forest	0.05
Aquatic		
--	American River	0.15
Total		1.33



Aerial Photograph: 12 July 2016  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) S58-S89-S151-S155-S102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
Provided by PSOMAS of Auburn, CA  
(19 August 2020)



Pump Outfalls Replacement Project  
City of Sacramento, CA  
27 August 2020

Figure 4.  
Biological Resources Map,  
Sheet 8 of 10, Sump 159

- Biological Study Area (BSA; 0.34 ac)
- Arcade Creek
- Riparian Forest (RIF)
- Nonnative Annual Grassland (NAG)
- Developed (DEV)
- Tree Location and Number

Symbol	Biological Community	Area (ac)
Upland		
DEV	Developed	0.20
NAG	Nonnative Annual Grassland	0.12
RIF	Riparian Forest	0.01
Aquatic		
--	Arcade Creek	0.01
Total		0.34




Aerial Photograph: 11 May 2018  
Google Earth Imagery

Proposed/Topographic Survey Data:  
\_EX PIPES (2019) S58-S89-S151-S155-S102 - Standard.zip  
and \_EX PIPES 103-154-159 (2019) - Standard.zip  
Provided by PSOMAS of Auburn, CA  
(19 August 2020)

Symbol	Biological Community	Area (ac)
Upland		
DEV	Developed/Disturbed	0.27



Pump Outfalls Replacement Project  
City of Sacramento, CA  
27 August 2020

 Biological Study Area (BSA)


 **SYCAMORE**  
Environmental  
Consultants, Inc.

Figure 4. Biological Resources Map,  
Sheet 9 of 10, La Riviera Staging Area

Aerial Photograph: 7 November 2019  
GEO1 Vivid Maxar Imagery  
ESRI Arcmap Basemap Service Layer



Pump Outfalls Replacement Project  
City of Sacramento, CA  
2 September 2020

 Biological Study Area (BSA)



**SYCAMORE**  
Environmental  
Consultants, Inc.

Figure 4. Biological Resources Map,  
Sheet 10 of 10, Lathrop Staging Area

Aerial Photograph: 7 November 2019  
GEO1 Vivid Maxar Imagery  
ESRI Arcmap Basemap Service Layer

### **1. Nonnative Annual Grassland**

A total of 3.14 acres of nonnative annual grassland occurs in the BSA (Figure 4; Appendix D, Photos 8, 27, and 31). Nonnative annual grassland occurs at all eight sumps. This community is dominated by nonnative grasses including ripgut grass (*Bromus diandrus*) and Italian rye grass (*Festuca perennis*) and by nonnative herbs including radish (*Raphanus sativus*), mallow (*Malva* sp.) and milk thistle (*Silybum marianum*). At some sumps, the vegetation in this community is periodically mowed. The nonnative annual grassland in the BSA is not a sensitive natural community.

### **2. Developed/Disturbed**

A total of 6.67 acres of developed/disturbed land occurs in the BSA (Figure 4; Appendix D, Photos 16, 19, 20 and 24). Developed/disturbed land occurs at all eight sumps. The areas of developed/disturbed land consist of the gravel levee roads and surrounding gravel access roads, Garden Highway, the American River Bike Trail, and the existing sump facilities. The two staging areas outside the BSA contain disturbed/ developed land. The Lathrop staging area is a fenced, cleared area covered with gravel and sparse ruderal vegetation. There are several piles of construction materials scattered throughout the site. The La Riviera staging area is a fenced, graveled area on the land side of a levee. Developed/disturbed areas have been heavily modified, and generally lack vegetation. Developed/disturbed land is not a sensitive natural community.

### **3. Riparian Forest**

A total of 0.51 acre of riparian forest occurs in the BSA (Figure 4; Appendix D, Photos 6, 14, and 18). This community occurs at seven sumps. At Sump 058, this community is dominated by Fremont cottonwood (*Populus fremontii*), northern California black walnut (*Juglans hindsii*), and box elder (*Acer negundo*). At Sump 089, this community is dominated by northern California black walnut and box elder. At Sump 102, this community is dominated by Goodding's black willow (*Salix gooddingii*), northern California black walnut, and Oregon ash (*Fraxinus latifolia*). At Sump 103, this community is dominated by valley oak (*Quercus lobata*), Oregon ash, Goodding's black willow, and willowherb (*Epilobium ciliatum*). At Sump 151, this community is dominated by Hinds' willow (*Salix exigua*). At Sump 155, this community is dominated by white alder (*Alnus rhombifolia*), Fremont cottonwood, and box elder. At Sump 159, this community is dominated by Goodding's black willow (*Salix gooddingii*) with nonnative saplings such as white mulberry (*Morus alba*) and southern catalpa (*Catalpa bignonioides*) present around the outfall. Riparian forest is a sensitive natural community.

### **4. Riparian Scrub Shrub**

A total of 0.05 acre of riparian scrub shrub occurs in the BSA (Figure 4; Appendix D, Photo 28). This community occurs only at Sump 155. This community is dominated by Himalayan blackberry (*Rubus armeniacus*). The community occurs adjacent to the riparian

forest community along the American River. Riparian scrub shrub is a sensitive natural community.

### **5. Temporarily Disturbed**

A total of 0.41 acre of temporarily disturbed land occurs in the BSA (Figure 4; Appendix D, Photo 12). This community occurs at Sump 102. The temporarily disturbed land occurs at an active construction site on both the water and land sides of the levee. The temporarily disturbed land extends east to the headwall of the sump outfall. During the survey, this community was bordered by construction fencing and lacked vegetation. Temporarily disturbed land is not a sensitive natural community.

### **6. Existing RSP**

A total of 0.14 acre of existing RSP occurs in the BSA. This community occurs at Sump 089. The existing RSP occurs on the water side of the levee. No vegetation occurs within this community. Existing RSP is not a sensitive natural community.

### **7. Arcade Creek**

A total of 0.05 acre of Arcade Creek occurs in the BSA (Figure 4; Appendix D, Photos 14, 22, and 30). Sumps 103, 154, and 159 outfall into Arcade Creek. Arcade Creek enters the City of Sacramento from the east and drains generally west into Steelhead Creek, which then drains to the Sacramento River near the confluence of the Sacramento and American River. Arcade Creek is an intermittent channel and sensitive natural community.

#### **Sump 103**

At Sump 103, the banks of Arcade Creek are covered in concrete immediately adjacent to the outfall. Vegetation on the banks consist of southern catalpa, white alder, Goodding's black willow, Oregon ash, white mulberry, and willowherb, rye grass (*Festuca perennis*), and ripgut grass (*Bromus diandrus*). Vegetation on the bed includes a fallen over Goodding's black willow. During field work, the portion of Arcade Creek within the BSA contained up to 2 feet of stagnant water. During fieldwork in July 2020, Arcade Creek was dry both upstream and downstream of Sump 103.

#### **Sump 154**

At Sump 154, the banks of Arcade Creek consist of rocks, dirt, grassland vegetation and few trees. Vegetation on the banks includes Bermuda grass (*Cynodon dactylon*), smartweed (*Persicaria* sp.), and scarlet sesban (*Sesbania punicea*). The channel bed consists of dirt and rocks. Vegetation on the bed includes cocklebur (*Xanthium strumarium*), false loosestrife (*Ludwigia* sp.) and smartweed. During the survey, the portion of Arcade Creek within the BSA was completely dry.

#### **Sump 159**

At Sump 159, the banks of the creek consist of grassland vegetation, riparian forest and some rocks. Vegetation on the banks include Bermuda grass (*Cynodon dactylon*),

smartweed (*Persicaria* sp.), cocklebur (*Xanthium strumarium*), and Goodding's black willow. The channel bed consists of concrete with some rocks. Vegetation is absent from the channel bed. During the survey, the portion of Arcade Creek within the BSA contained up to two feet of water. During fieldwork in July 2020, Arcade Creek was dry both upstream and downstream of Sump 159.

## **8. Steelhead Creek**

A total of 0.11 acre of the Steelhead Creek (formerly known as the Natomas East Main Drainage Canal) occurs in the BSA (Figure 4; Appendix D, Photos 2 and 10). Sump 058 and 102 outfall into Steelhead Creek. On the east side of Natomas, Steelhead Creek flows south. The creek reaches its southernmost point approximately 3.5 miles north of the American River. Steelhead Creek then turns west, flowing north of and parallel with the American River into the Sacramento River. Steelhead Creek is a perennial channel and sensitive natural community.

### **Sump 058**

At Sump 058, the portion of Steelhead Creek within the BSA is lined with dense riparian vegetation along the banks. Vegetation consisted of Fremont cottonwood, box elder, and northern California black walnut with a dense understory of Himalayan blackberry. The channel bed lacks vegetation. During field work, the portion of Steelhead Creek within the BSA contained flowing water up to 4 feet deep. Sump 058 empties into the Sump 058 Outfall Channel (described below) and does not directly discharge into Steelhead Creek.

### **Sump 102**

At Sump 102, the earthen banks of Steelhead Creek are vegetated with grasses, shrubs, and riparian trees. Vegetation on the banks consist of Goodding's black willow, northern California black walnut, Oregon ash, scarlet sesban, rye grass, and chicory (*Cichorium intybus*). The channel bed consists of cobble rocks (at the outfall only) with areas of sand and mud covered in dense patches of emergent false loosestrife (*Ludwigia* sp.) and scarlet sesban. The portion of Steelhead Creek in the BSA at Sump 102 is an isolated scour pool lined with cobble below the outfall structure. The scour pool contained approximately 1 foot of stagnant water during fieldwork. The main low-flow channel at Sump 102 is located outside the BSA to the east and contained flowing water approximately 1 foot deep over silt substrate during fieldwork.

## **9. American River Floodplain Channel**

A total of 0.06 acre of the American River Floodplain Channel occurs in the BSA (Figure 4; Appendix D, Photo 18). Only Sump 151 outfalls into the American River Floodplain Channel. The American River Floodplain Channel generally flows east along the levee toe approximately 0.4 miles, then southward another 0.4 miles where it drains into the American River. The American River floodplain, including the Floodplain Channel, are classified by the Federal Emergency Management Agency (FEMA) as "AE", or areas subject to 1% annual chance flood. During such flood events, the American River floodplain (including

the American River Floodplain Channel) would become inundated, and flows would then travel westward with the American River (including the floodplain channel) during those events. The American River Floodplain Channel is an intermittent channel and sensitive natural community.

### **Sump 151**

At Sump 151, the banks of the American River Floodplain Channel consist of the concrete headwall, rock slope protection, emergent wetland vegetation and riparian forest. Vegetation on the banks consist of Himalayan blackberry, Hinds' willow (*Salix exigua*), California wild grape, and cherry plum (*Prunus cerasifera*). The channel bed consists of a scour pool lined with RSP, boulders, cobble and mud. The portion of the channel bed at the sump outfall lacks vegetation. Vegetation on the channel bed adjacent to the BSA consists of smartweed (*Persicaria* sp.), barnyard grass (*Echinochloa* sp.), California button willow (*Cephalanthus occidentalis*), and yellow bristle grass (*Setaria pumila* ssp. *pumila*). During field work, the portion of the American River Floodplain Channel within the BSA was stagnant and contained up to 3 feet of water.

## **10. American River**

A total of 0.15 acre of the American River occurs in the BSA (Figure 4; Appendix D, Photo 28). Sump 155 outfalls into the American River. The American River is a large, fast-flowing river that enters the City of Sacramento from the east and flows west until it joins the Sacramento River. The Sacramento River flows south into the San Francisco Bay Delta and eventually into the Pacific Ocean. The American River is a perennial channel and sensitive natural community.

### **Sump 155**

At Sump 155, the earthen banks of the river are vegetated with grassland, riparian shrubs, and riparian forest. Vegetation on the banks consists of white alder, Fremont cottonwood, northern California black walnut, box elder, Himalayan blackberry, summer mustard (*Hirschfeldia incana*), Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), ripgut grass (*Bromus diandrus*), goose grass (*Galium aparine*), mugwort (*Artemisia douglasiana*), and wild oat (*Avena fatua*). The portion of the riverbed in the BSA consists of boulders and cobble rocks. No gravel substrate is present on the riverbed in the BSA. The riverbed lacks vegetation. The portion of the river adjacent to Sump 155 is a relatively shallow and fast-flowing. During field work, the portion of the American River within the BSA contained up to 2 feet of water, with deeper portions of the river outside the BSA estimated to be up to 5 feet in depth.

## **11. Morrison Creek**

A total of 0.14 acre of Morrison Creek occurs in the BSA (Figure 4; Appendix D, Photos 5 and 6). Sump 089 outfalls into Morrison Creek. Morrison Creek flows south and west. Morrison Creek is generally pumped into the Sacramento River at another City sump approximately 1.7 miles southwest of Sump 089. In some years, large precipitation events may cause Morrison Creek to overflow into Beach Lake (pers. comm., R. Kong, City of

Sacramento Dept. of Utilities Engineer). Morrison Creek is a perennial channel and sensitive natural community.

### **Sump 089**

At Sump 089, the banks of Morrison Creek consist of RSP, dirt, and patches of riparian forest and emergent wetland vegetation. A complex of small mammal burrows occurs on the upper banks within the BSA. Vegetation on the upper banks consists of northern California black walnut, Oregon ash, radish (*Raphanus sativus*), black mustard (*Brassica nigra*), deervetch (*Acmispon americanus* var. *americanus*), box elder, and summer mustard (*Hirschfeldia incana*). Vegetation at the edge of Morrison Creek consists of dallis grass (*Paspalum dilatatum*), cocklebur (*Xanthium strumarium*), pennyroyal (*Mentha pulegium*), nutsedge (*Cyperus eragrostis*), kickxia (*Kickxia* sp.), curly dock (*Rumex crispus*), and smartweed. The creek bed consists of mud and is patchily vegetated with false loosestrife (*Ludwigia* sp.) and common tule (*Schoenoplectus acutus* var. *occidentalis*). During field work, the portion of Morrison Creek within the BSA was flowing slowly. The deepest portions of the creek were estimated to be approximately 5 feet deep.

### **12. Sump 058 Outfall Channel**

The Sump 058 Outfall Channel passes discharge from Sump 058 into Steelhead Creek. The channel is approximately 12 feet wide, 44 feet long, and occupies 0.01 acres in the BSA. The channel occurs entirely on the steep bank/levee slope and is actively eroding. It drains south into Steelhead Creek. The banks of the channel consist of riparian forest, dense vines, and grassland. Vegetation on the banks consist of box elder, Fremont cottonwood, and California wild grape. The channel bed consists of cobble rocks and dirt. The channel bed lacks vegetation. During field work, the Sump 058 Outfall Channel was completely dry. The Sump 058 Outfall Channel is an intermittent channel and sensitive natural community.

### **D. The Existing Level of Disturbance**

All eight sump sites have experienced a high level of disturbance. Topography, drainage, and much of the soils have been modified by the levees and the sump facilities. Numerous gravel access roads occur on and along the levees and around the sump facilities. Outfalls are generally armored with concrete walls, aprons, and/or RSP. Vegetation at some sites is periodically mowed or trimmed. Many of the sites contain trash along the banks and on the bed of the outflow waterbodies. Additional anthropogenic influences observed at sump sites include active construction, homeless encampments, the American River Bike Trail, Gardenland Park, and the Garden Highway. The Lathrop and La Riviera staging areas are developed/disturbed and used for staging and stockpiling under existing conditions.

## V. BIOLOGICAL RESOURCES IN THE STUDY AREA

### A. Determination of Special-Status Species in the Study Area

USFWS file data, CNDDDB/CNPS records, and field surveys were used to determine the special-status species that could occur in the BSA. A field survey was conducted to determine whether habitat for special-status species identified in the file data is present in the BSA. Special-status species for which suitable habitat is present in the BSA are listed in Table 5.

Table 5. Special-Status Species and Natural Communities with Potential to Occur.

Special-Status Species	Common Name	Federal Status <sup>a</sup>	State Status <sup>a</sup> & other codes <sup>b</sup>	Source <sup>c</sup>	Habitat Present? / Species Observed?
<b>Invertebrates</b>					
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	CH, T	--	1, 2	Yes/No
<b>Fish</b>					
<i>Oncorhynchus mykiss</i>	California Central Valley steelhead DPS	CH, T	--	1, 2	Yes/No
<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run Chinook salmon ESU	CH, T	T	1, 2	Yes/No
<b>Reptiles</b>					
<i>Emys marmorata</i>	Western pond turtle	--	SSC	2	Yes/No
<i>Thamnophis gigas</i>	Giant garter snake	T	T	1, 2	Yes/No
<b>Birds</b>					
<i>Athene cunicularia</i>	Burrowing owl	--	SSC	2	Yes/No
<i>Buteo swainsoni</i>	Swainson's hawk	--	T	2	Yes/Yes
<i>Elanus leucurus</i>	White-tailed kite	--	FP	2	Yes/No
<i>Melospiza melodia</i>	Song sparrow, "Modesto Population"	--	SSC	2	Yes/No
Nesting Birds (MBTA or CA FGC regulated)		--	--	3	Yes/Yes
<b>Plants</b> /CNPS <sup>b</sup>					
<i>Carex comosa</i>	Bristly sedge	--	--/2B.1	2	Yes/No
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	Woolly rose-mallow	--	--/1B.2	2	Yes/No
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	--	--/1B.2	2	Yes/No
<b>Natural Communities</b>					
Great Valley Cottonwood Riparian Forest	--	--	--	2	Yes/No

<sup>a</sup> **Listing Status:** Federal status determined from USFWS list. State status determined from CDFW (2019a,b,c). Codes used in table are: E = Endangered; T = Threatened; P = Proposed; C = Candidate; R = California Rare; CH = Critical Habitat has been designated.

<sup>b</sup> **Other Codes:** Other codes determined from USFWS letter; CDFW (2019a,b,c). Codes used in table are as follows:  
 SSC = CDFW Species of Special Concern; FP = CDFW Fully Protected; Prot = CDFW Protected; CH = Critical habitat designated.  
 CNPS List (plants only): 1A = Presumed Extinct in CA; 1B = Rare or Endangered (R/E) in CA and elsewhere; 2 = R/E in CA and more common elsewhere; 3 = Need more information; 4 = Plants of limited distribution  
 CNPS List Decimal Extensions: .1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 = Fairly endangered in CA (20-80% of occurrences threatened); .3 = Not very endangered in CA (< 20% of occurrences threatened or no current threats known).

<sup>c</sup> **Source:** 1 = USFWS letter. 2 = CNDDDB. 3 = Observed or included by Sycamore Environmental.

## **B. Special-Status Species not in the Project Study Area**

Special-status species for which suitable habitat is not present, or whose distributional limits preclude the possibility of their occurrence in the BSA, are not discussed in Section V of this report. An evaluation of these species is in Appendix B.

## **C. Evaluation of Sensitive Natural Communities**

### **1. Riparian Forest, Riparian Scrub Shrub, and Trees**

Riparian forest and riparian scrub shrub are sensitive natural communities regulated by CDFW and requiring consideration during CEQA. Figures 3 and 4 show the extent of riparian forest and riparian scrub shrub present in the BSA, and tree locations. Riparian trees mapped during fieldwork are summarized in Table 6, below. Tree removal is proposed at Sump 089. Tree removal may be necessary at Sump 155. Sumps 058, 102, 103, 151, 159 may require minor trimming of riparian vegetation. No riparian vegetation occurs at Sump 154.

**MITIGATION MEASURE:** The following avoidance and minimization measures are recommended to reduce project-related impacts to the riparian vegetation and other sensitive natural communities within the BSA:

- Removal of trees and riparian vegetation will be minimized to the extent possible.
- To protect avoided riparian forest, riparian scrub shrub, retained trees, and other sensitive natural communities, prior to construction, environmentally sensitive area (ESA) fencing or equivalent demarcation approved by the engineer will be placed along the limits of construction in the BSA to exclude construction activities. Trucks and other vehicles will not be allowed to park beyond, nor shall equipment be stored beyond, the fencing. No vegetation trimming/mowing or ground-disturbing activities will be permitted beyond the fencing.
- For all Sumps, the City will obtain a Streambed Alteration Agreement from the CDFW in compliance with Fish and Game Code Section 1602. The City and its contractor will be required to comply with terms of the Agreement and provide any required documentation of proof of compliance to CDFW.

Table 6. Tree Summary

TREE #	SCIENTIFIC NAME	COMMON NAME	DBH (INCHES)	RIPARIAN	PROPOSED REMOVAL
<b>SUMP 058</b>					
1	<i>Juglans hindsii</i>	Northern California black walnut	26	Yes	
2	<i>Juglans hindsii</i>	Northern California black walnut	7	Yes	
3	<i>Populus fremontii</i>	Fremont cottonwood	30	Yes	
4	<i>Acer negundo</i>	Box elder	12	Yes	
<b>SUMP 089</b>					
5	<i>Juglans hindsii</i>	Northern California black walnut	7, 5	Yes	
6	<i>Fraxinus latifolia</i>	Oregon ash	9	Yes	
7	<i>Juglans hindsii</i>	Northern California black walnut	8	Yes	
8	<i>Juglans hindsii</i>	Northern California black walnut	10, 9, 7	Yes	<b>X</b>
9	<i>Juglans hindsii</i>	Northern California black walnut	6, 9, 9	Yes	<b>X</b>
10	<i>Acer negundo</i>	Box elder	9	Yes	
11	<i>Acer negundo</i>	Box elder	6, 7, 7, 8	Yes	
<b>SUMP 102</b>					
12	<i>Fraxinus latifolia</i>	Oregon ash	4	Yes	
13	<i>Juglans hindsii</i>	Northern California black walnut	5, 5	Yes	
14	<i>Fraxinus latifolia</i>	Oregon ash	10	Yes	
15	<i>Salix gooddingii</i>	Goodding's black willow	7	Yes	
16	<i>Salix gooddingii</i>	Goodding's black willow	6, 6, 9	Yes	
17	<i>Salix gooddingii</i>	Goodding's black willow	7, 6, 5	Yes	
<b>SUMP 103</b>					
18	<i>Salix gooddingii</i>	Goodding's black willow	7	Yes	
19	<i>Fraxinus latifolia</i>	Oregon ash	9	Yes	
20	<i>Quercus lobata</i>	Valley oak	10	Yes	
<b>SUMP 151</b>					
21	<i>Acer negundo</i>	Box elder	5	Yes	
22	<i>Quercus lobata</i>	Valley oak	8	Yes	
23	<i>Quercus lobata</i>	Valley oak	24	Yes	
24	<i>Quercus lobata</i>	Valley oak	40	Yes	
25	<i>Quercus lobata</i>	Valley oak	20, 17	Yes	
<b>SUMP 155</b>					
26	<i>Eucalyptus camaldulensis</i>	Red gum	40, 17	Yes	<b>X</b>
27	<i>Acer negundo</i>	Box elder	11, 8	Yes	<b>X</b>
28	<i>Acer negundo</i>	Box elder	9	Yes	
29	<i>Juglans hindsii</i>	Northern California black walnut	10	Yes	
30	<i>Alnus rhombifolia</i>	White alder	17	Yes	
31	<i>Alnus rhombifolia</i>	White alder	15	Yes	
32	<i>Populus fremontii</i>	Fremont cottonwood	8	Yes	
33	<i>Triadica sebifera</i>	Chinese tallowtree	6	Yes	<b>X</b>
34	<i>Populus fremontii</i>	Fremont cottonwood	15, 14	Yes	<b>X</b>
35	<i>Populus fremontii</i>	Fremont cottonwood	13	Yes	
36	<i>Populus fremontii</i>	Fremont cottonwood	40	Yes	
37	<i>Alnus rhombifolia</i>	White alder	5, 6, 8, 9, 10	Yes	
<b>SUMP 159</b>					
38	<i>Salix gooddingii</i>	Goodding's black willow	12	Yes	

## 2. Perennial and Intermittent Channels

Perennial and intermittent channels within the BSA are sensitive natural communities requiring consideration under CEQA. Such channels are regulated by CDFW, the U.S. Army Corps of Engineers (Corps), and Regional Water Quality Control Board (RWQCB).

**MITIGATION MEASURE:** Mitigation measures implemented for riparian vegetation and other sensitive natural communities will also protect perennial and intermittent channels. Additionally, the following avoidance and minimization measures are recommended to reduce project-related impacts to Arcade Creek, Steelhead Creek, American River Floodplain Channel, American River, and Morrison Creek within the BSA:

- The Project will comply with the provisions of Title 9, Chapters 9.31 through 9.35 of the City of Sacramento Code (Grading, Erosion and Sediment Control Ordinance). Code compliance includes preparation of an Erosion and Sediment Control Plan.
- If required, the Project will obtain National Pollutant Discharge Elimination System (NPDES) coverage via the State Water Resources Control Board's (SWRCB) Construction General Permit, which requires preparation of a Stormwater Pollution Prevention Plan prior to construction.
- Best management practices to control soil erosion, sediment transport, and runoff pollution will be implemented during construction per the City's *Administrative and Technical Procedures Manual for Grading and Erosion and Sediment Control* (City of Sacramento 2013).
- Construction activities on the water side of the levee will not occur during the flood season, as determined by the Central Valley Flood Protection Board (CVFPB) – typically 1 November through 15 April or 15 July, as specifically determined by the CVFPB for each sump site. The Project will adhere to further work period restrictions in applicable permits and requirements from CDFW, USFWS, and NMFS, unless the applicable permitting agencies approve work window modification.
- Equipment will be refueled and serviced at designated construction staging areas. All construction material will be stored and contained in designated areas located away from aquatic resources to prevent transport of materials into adjacent waterways. Appropriate BMPs will be installed to collect any discharge, and adequate materials for spill cleanup will be kept on site. Construction vehicles and equipment will be properly maintained to prevent contamination of soil or water from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease.
- For all sump sites, the City will obtain a Streambed Alteration Agreement from CDFW in compliance with Fish and Game Code Section 1602 and an Encroachment Permit permission in compliance with Section 408 of the Clean Water Act from the CVFPB. For Sumps 089 and 155, the City will obtain approval from U.S. Army Corps of Engineers for Project coverage under Nationwide Permits, in compliance

with Section 404 of the Clean Water Act and a Water Quality Certification from the Central Valley Regional Water Quality Control Board in compliance with Section 401 of the Clean Water Act. The City and its contractor will be required to comply with terms of all permits and provide any required documentation of proof of compliance to the permitting agencies.

## **D. Evaluation of Special-Status Wildlife Species**

### **1. Invertebrates**

#### **Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)**

**HABITAT AND BIOLOGY:** VELB is a small (0.5 to 0.8 inch long) wood-boring beetle found only in association with elderberry (*Sambucus* sp.), its obligate larval host plant. Eggs are laid on living elderberry shrubs (USFWS 1991). The first larval instar bores through the center of the elderberry stem and develops for one to two years while feeding on the elderberry pith. Prior to pupation, the larva chews an ‘exit hole’ through the bark and plugs it with wood shavings. Exit holes are circular or slightly oval, and 0.28 to 0.39 inch in diameter (USFWS 1991). After creating an exit hole, the larva crawls back into its pupal chamber, metamorphoses, and emerges as an adult (USFWS 2006). Adults emerge, mate, and lay eggs in the spring and summer (March to July), typically when elderberry shrubs are flowering (USFWS 2017c).

In the Central Valley, elderberry shrubs occur most commonly in riparian forests, riparian forest margins, and grassy savannas. Elderberries also occur in oak woodland, mixed chaparral-foothill woodland, and other contexts. Healthy riparian systems supporting dense elderberry clumps are the primary habitat of VELB. Loss of riparian habitat is the primary threat to VELB (USFWS 2017c).

The USFWS (2017c) recognizes habitat for VELB as including both riparian and non-riparian areas where elderberry shrubs are present. Riparian habitat includes all areas that are either influenced by surface or subsurface water flows along streams, rivers, and canals (including the land side of levees) and areas dominated by typically riparian species, such as cottonwood (*Populus* spp.), California sycamore (*Platanus racemosa*), willow (*Salix* spp.) black walnut (*Juglans* spp.), valley oak, boxelder, Oregon ash, wild grape, wild rose (*Rosa* spp.), blackberry (*Rubus* spp.), poison oak (*Toxicodendron diversilobum*), buttonbush (*Cephalanthus occidentalis*), sedges (*Carex* spp.), rushes (*Juncus* spp.), miner’s lettuce (*Claytonia* spp.), mugwort (*Artemisia* sp.), and hoary nettle (*Urtica dioica*), as well as nonnative vegetation such as tree-of-heaven (*Ailanthus altissima*), black locust (*Robinia pseudoacacia*), and poison-hemlock (*Conium maculatum*).

VELB is found in population clusters that are unevenly distributed across available host plants. Elderberry condition, water availability, elderberry density, and the health of riparian habitat are positively correlated with VELB occupancy (Talley et al. 2007). Occupied plants are typically large, though how the beetle selects a particular host is unknown (USFWS 1991). VELB has poor physical dispersal capability (Collinge et al.

2001, Talley et al. 2007, USFWS 2017c). Upon emergence, adults typically stay within the local elderberry clump (Talley et al. 2017).

The USFWS (2017) *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* outlines procedures for determining occupancy in riparian and non-riparian contexts. The USFWS considers elderberry shrubs in riparian contexts within the range of VELB to be 'suitable habitat, likely occupied' regardless whether exit holes are observed. In non-riparian contexts, the USFWS may consider elderberry shrubs to be unoccupied based on the results of exit hole surveys and an analysis of regional context, including proximity to riparian areas and known VELB populations.

**RANGE:** The current range of VELB extends throughout California's Central Valley from approximately Shasta County in the north to Fresno County in the south including the valley floor and lower foothills. The majority of known VELB occurrences are below 500 feet in elevation (USFWS 2017).

**KNOWN RECORDS:** There are 13 CNDDDB records of VELB within the three Project quads. The closest record (Occurrence #277) is from 2006, approximately 720 feet southwest of Sump 058.

**HABITAT PRESENT IN THE BSA:** Elderberry shrubs observed at Sump 155 and the Lathrop Staging Area provide potential habitat for VELB. The elderberry shrub at Sump 155 is located adjacent to a levee access road on the landside levee toe; the dripline is approximately 6 feet west of the access road. The shrub is approximately 90 feet south of the Sump station fence and approximately 85 feet south of the limits of excavation (Figures 3 and 4, Sheets 7). The elderberry shrubs at the Lathrop Staging Area are located behind and adjacent to the staging area's western fence.

**DISCUSSION:** VELB was not observed in the BSA during the biological survey. Elderberry shrubs that provide habitat for VELB were observed at the following two locations:

#### **Sump 155**

The elderberry shrub contained approximately 10 potential VELB exit holes and is assumed to be occupied. Construction at Sump 155 will not require trimming or cutting the elderberry shrub.

#### **Remaining Sumps/Staging Areas**

No elderberry shrubs were observed at the other sump sites. The Lathrop Staging Area is adjacent to USFWS-designated VELB critical habitat to the north (Sacramento Zone; USFWS 1980). The elderberry shrubs behind the western fence of the Lathrop Staging Area are potentially occupied by VELB. The shrubs are located over 20 feet to the west of where staging will occur.

**MITIGATION MEASURES:** The following avoidance and minimization measures are recommended for Sump 155 and the Lathrop Staging Area per the USFWS 2017 Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*):

- Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) will avoid elderberry shrubs by a minimum of 20 feet from the drip-line. Areas within 20 feet of elderberry shrubs at the Lathrop Staging Area and areas west of the levee access road at Sump 155 shall be designated as Environmentally Sensitive Areas (ESAs). No construction personnel, equipment, or material storage shall be allowed within the ESAs. Brightly colored construction fencing shall be installed at least 20 feet from elderberry shrubs to demarcate the ESA at the Lathrop Staging Area and along the length of the western edge of the levee access road at Sump 155. The fencing shall include signage prohibiting entry by construction personnel. At Sump 155, signage will prohibit vehicle or equipment parking along the access road within 20 feet of the elderberry shrub.
- A qualified biologist will provide training for all contractors, work crews, and any onsite personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance.

## 2. Fish

### California Central Valley steelhead DPS (*Oncorhynchus mykiss*)

**HABITAT AND BIOLOGY:** The California Central Valley steelhead DPS (hereafter ‘CCV steelhead’) is a federal threatened species. CCV steelhead is an anadromous salmonid, although individuals may be capable of completing their life cycle entirely in freshwater systems (NMFS 1998). CCV steelhead are winter-run steelhead that migrate from the ocean to freshwater spawning streams at the onset of increased river flows brought on by the arrival of winter rain. Adults enter fresh water in August, with a peak in late September-October, after which they hold until flows in tributaries are high enough for spawning (Moyle 2002). Spawning occurs in small tributaries on coarse (0.4 to 5.1-inch diameter) gravel beds in riffle areas, usually at the tail of a pool or in a riffle (McGinnis 1984). After spawning, adult steelhead swim gradually downstream and return to the ocean. Steelhead may spawn up to 4 times during their lifetime, albeit with high (50 to 75 percent) mortality between reproductive events (Moyle 2002).

Eggs hatch in 3 to 4 weeks and fry emerge from gravel 2 to 3 weeks later. Fry initially live in quiet waters close to shore. For the first year or two of life, steelhead are found in cool, clear, fast-flowing permanent streams and rivers where riffles predominate over pools, where there is ample cover from riparian vegetation or undercut banks, and where invertebrate life is diverse and abundant. Stream-dwelling individuals feed mostly on drifting aquatic organisms and terrestrial insects, but they will also take active bottom invertebrates and fish. After steelhead leave their home streams, they feed on estuarine invertebrates and marine krill. As they increase in size, fish gradually become more important to their diet (Moyle 2002).

Steelhead require one to three years of freshwater rearing before migrating to the ocean. They typically remain at sea for one to four growing seasons before returning to freshwater to spawn (McEwan and Jackson 1996). Juvenile steelhead require areas with overhead

cover and low light levels and velocity refuges with adjacent high flows. Juvenile emigration can occur year-round, but primarily December through early May with a peak in mid-March. A much smaller peak can occur in the fall (McEwan and Jackson 1996). Optimal migration and holding temperatures have been reported to range from 46°F to 52°F (NMFS 2014) and optimal temperatures for juvenile CCV steelhead growth ranges from 57°F to 66°F (NMFS 2019). Adult and juvenile CCV steelhead can tolerate water temperatures up to 85°F for short periods of time and can be expected to show significant mortality at temperatures consistently exceeding 77°F (Cech and Myrick 1999). Thermal stress for CCV steelhead begins at 66°F, and temperatures of above 70°F can be lethal (CDFG 2001).

The primary constituent elements identified as essential for the conservation of Pacific salmon and steelhead in California are (NMFS 2005):

- 1) Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning incubation and larval development.
- 2) Freshwater rearing sites with a) water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; b) water quality and forage supporting juvenile development; and c) natural cover such as shade, submerged and overhanging large wood, log jams, and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
- 3) Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.
- 4) Estuarine areas free of obstruction and excessive predation with: a) water quality, quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; b) natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and c) juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

**RANGE:** The CCV steelhead distinct population segment (DPS) includes all naturally spawned anadromous populations below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries. This DPS includes two artificial propagation programs: the Coleman National Fish Hatchery, and Feather River Hatchery steelhead hatchery programs (NMFS 2006). The Nimbus Fish Hatchery along the American River artificially spawns CCV steelhead, but these individuals are not considered to be a part of the Evolutionary Significant Unit. According to redd surveys from 2002 to 2007, some CCV steelhead naturally spawn in the American River below Nimbus Dam (NMFS 2014).

**KNOWN RECORDS:** There are 3 CNDDDB records of CCV steelhead within the three Project quads. The closest record (Occurrence #5) is from 2012, located in the American River adjacent to Sump 155. CCV steelhead are also known to occur in Steelhead Creek.

**CRITICAL HABITAT:** The American River, its floodplain, and Steelhead Creek within the BSA are designated critical habitat for CCV steelhead (NMFS 2005).

**HABITAT PRESENT IN THE BSA:** Suitable migration habitat occurs within the BSA at Sumps 058, 102, 103, 154, 155, and 159, and at Sump 151 during 100-year flood events. Suitable juvenile rearing habitat occurs at Sumps 058 and 155.

## **DISCUSSION:**

### **Sump 058**

CCV steelhead are known to spawn in Dry Creek, a tributary to Steelhead Creek located upstream and northeast of the BSA (NMFS 2014). CCV steelhead would be expected migrate through the portion of Steelhead Creek within the BSA during spawning and outmigration. Steelhead are unlikely to be present in the portion of Steelhead Creek within the BSA during the summer due to high temperatures in Steelhead Creek. The silt-laden substrate within the portion of Steelhead Creek in the BSA is not suitable for spawning. No in-water work is proposed at Sump 058.

### **Sump 102**

Sump 102 is on Steelhead Creek downstream from Sump 058. CCV steelhead are expected to use the portion of Steelhead Creek within the BSA for migration. No suitable spawning habitat occurs within the BSA. No in-water work is proposed at Sump 102.

### **Sump 103**

When the portion of Arcade Creek within the BSA is inundated, it provides suitable migration habitat for CCV steelhead. In 2009, NMFS responded to a request for a list of threatened or endangered species that could occur at the confluence of Arcade Creek and Steelhead Creek. The official list included CCV steelhead. CCV steelhead migrate up Steelhead Creek to spawn in Dry Creek and are therefore likely to occur in Steelhead Creek. The confluence of Steelhead Creek and Arcade Creek is over 1 mile west of this sump. Migration habitat at this sump is marginal. CCV steelhead have not been observed in Arcade Creek in over 20 years and would not be expected to return due to a lack of suitable rearing habitat and low flows (Jones and Stokes 2007). While stagnant pools were present at the sump outfall, Arcade Creek was completely dry both upstream and downstream of the sump during the July 2020 biological survey. No suitable spawning habitat occurs within the BSA. No in-water work is proposed for this sump.

### **Sump 151**

The American River Floodplain Channel within the BSA provides suitable migration habitat when the American River floodplain (including the Floodplain Channel) is inundated during extreme flood events. During other years, it is an unsuitable hot,

stagnant isolated feature that is unsuitable for CCV steelhead. In-water work would not occur at this sump during an extreme flood event.

#### **Sump 154**

When the portion of Arcade Creek within the BSA is inundated, it provides suitable migration habitat for CCV steelhead. Arcade Creek provides migration habitat for CCV steelhead. In 2009, NMFS responded to a request for a list of threatened or endangered species that could occur at the confluence of Arcade Creek and Steelhead Creek. The official list included CCV steelhead. CCV steelhead have not been observed in Arcade Creek in over 20 years and would not be expected to return due to a lack of suitable rearing habitat and low flows (Jones and Stokes 2007). The portion of Arcade Creek at Sump 154 was completely dry during the biological survey. No suitable spawning habitat occurs within the BSA. No in-water work is proposed for this sump.

#### **Sump 155**

Suitable migration habitat and juvenile rearing habitat occurs in the portion of the American River within the BSA. CCV steelhead are known to spawn in the American River. The portion of the American River adjacent to Sump 155 contains large cobble that is not suitable for spawning. Work at Sump 155 includes installation of a turbidity curtain in the river for removal of the concrete apron. Juvenile steelhead could be present in this portion of the river during the summer. Critical habitat PCEs will not be affected.

#### **Sump 159**

When the portion of Arcade Creek within the BSA is inundated, it provides suitable migration habitat for CCV steelhead. In 2009, NMFS responded to a request for a list of threatened or endangered species that could occur at the confluence of Arcade Creek and Steelhead Creek. The official list included CCV steelhead. CCV steelhead migrate up Steelhead Creek to spawn in Dry Creek and are therefore likely to occur in Steelhead Creek. The confluence of Steelhead Creek and Arcade Creek is over 1 mile west of this sump. Migration habitat at this sump is marginal. CCV steelhead have not been observed in Arcade Creek in over 20 years and would not be expected to return due to a lack of suitable rearing habitat and low flows (Jones and Stokes 2007). Upstream from the BSA, Arcade Creek was completely dry during the biological survey. No suitable spawning habitat occurs within the BSA. No in-water work is proposed for this sump.

#### **Sump 089**

CCV steelhead do not occur in Morrison Creek at Sump 089. Morrison Creek is a highly modified urban creek along most of its length. The Beach Lake Dike prevents fishes from entering Morrison Creek. Upstream tributary creeks are warm and unsuitable (Regional San 2014). There are no documented observations of anadromous salmonids in Morrison Creek. CCV steelhead do not have potential to occur in the portion of Morrison Creek within the BSA.

- **MITIGATION MEASURES:** The avoidance and minimization measures recommended to protect perennial and intermittent channels will also protect CCV steelhead at Sump 155.

### **Central Valley spring-run Chinook salmon ESU (*Oncorhynchus tshawytscha*)**

**HABITAT AND BIOLOGY:** Central Valley spring-run Chinook salmon ESU (hereafter ‘SR Chinook’) is a state and federal threatened species. SR Chinook is an anadromous and semelparous (reproducing only once before dying) salmonid. As a ‘stream-type’ salmon, SR Chinook depend upon year-round, cool, freshwater habitat for both adults (which arrive in spring and mature while over-summering in foothill streams) and juveniles (which regularly spend more than a year in rivers before out-migration). SR Chinook spawning and rearing habitat is restricted to the higher elevation portions of the Central Valley, where cool summer temperatures can be found in snow melt-fed rivers (Moyle 2002, Moyle et al. 2015). SR Chinook migrate into the Sacramento River as immature fish from March through September with a peak in May-June. Spawning occurs in late August through October with a peak in mid-September (Moyle et al. 2015). Spawning requires suitable substrate (gravel and small cobble with low silt content) and cold, clear, well-oxygenated water. Juveniles emerge in November through March and reside in streams for approximately 3-15 months before emigrating to the Pacific Ocean (Moyle et al. 2015). After emerging, juveniles seek areas of shallow, low-velocity water. Many juveniles may be dispersed downstream in high flow events (Moyle 2002). As they grow larger, juveniles move to deeper and faster water. Juvenile SR Chinook migrate downstream at all times of the year, with peaks in winter and spring (Moyle 2002). While in fresh water, juvenile Chinook salmon are opportunistic drift feeders that eat a wide variety of terrestrial and aquatic insects. Larger fish feed increasingly on other fish.

The primary constituent elements identified as essential for the conservation of Pacific salmon and steelhead in California are (NMFS 2005):

- 1) Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning incubation and larval development.
- 2) Freshwater rearing sites with a) water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; b) water quality and forage supporting juvenile development; and c) natural cover such as shade, submerged and overhanging large wood, log jams, and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
- 3) Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

- 4) Estuarine areas free of obstruction and excessive predation with: a) water quality, quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; b) natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and c) juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

**RANGE:** The SR Chinook ESU includes all naturally spawned populations of SR Chinook in the Sacramento River and its tributaries, including the Feather River, as well as the Feather River Hatchery spring-run Chinook program (NMFS 2005). This includes unobstructed perennial tributaries to the Sacramento River. Construction of low elevation dams in the foothills of the Sierras on the San Joaquin, Mokelumne, Stanislaus, Tuolumne, and Merced rivers, is thought to have extirpated SR Chinook salmon from these watersheds of the San Joaquin River, as well as on the American River of the Sacramento River basin (NMFS 2016).

**KNOWN RECORDS:** There are no CNDDDB records of SR Chinook in the creeks adjacent to any of the sump sites, including in the lower American River. The closest record (Occurrence #17) is from 2004 in the Barge Canal in the Sacramento River Deep Water Ship Channel in West Sacramento near Jefferson Blvd. One adult and 26 juveniles were captured on 14 January, 3 and 24 February, 21 March, and 25 May.

**CRITICAL HABITAT:** The American River within the BSA is designated critical habitat for SR Chinook (NMFS 2005).

**HABITAT PRESENT IN THE BSA:** The American River at Sump 155 is designated critical habitat for SR Chinook.

## **DISCUSSION:**

### **Sump 155**

Though historically found in Sacramento, San Joaquin, Klamath and Eel Rivers and their larger tributaries, today populations are only known to exist in the Sacramento and Klamath drainages (Moyle 2002). According to NMFS (2005), designated critical habitat can be “specific areas outside the geographical area occupied by the species at the time of listing that are essential for the conservation of a listed species. Our regulations direct us to focus on “primary constituent elements,” or PCEs, in identifying these physical or biological features.”

### **Remaining Sumps**

The remaining sumps are outside of this species’ range. SR Chinook migrate to spawning habitat from March through September. SR Chinook can tolerate water temperatures no warmer than 56 degrees Fahrenheit (FERC 2003). The American River is the only large, fast-flowing river within the BSA that would provide suitable water temperatures for SR Chinook migration.

**MITIGATION MEASURES:** The avoidance and minimization measures recommended for CCV steelhead and perennial and intermittent channels will also protect SR Chinook salmon critical habitat at Sump 155.

### 3. Reptiles

#### Western pond turtle (*Emys marmorata*)

**HABITAT AND BIOLOGY:** Western pond turtle (WPT) is a state species of special concern. WPT is associated with permanent or nearly permanent water in a wide variety of habitat types, such as ponds, lakes, streams, irrigation ditches, and permanent pools along intermittent streams. It is tolerant of brackish water, and has occasionally been observed in sea water (Thomson et al. 2016). WPT require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks (CWHR 2020).

Adults remain active year-round in warmer climates and overwinter in upland burrows safe from high winter flows in colder climates (Thomson et al. 2016). Two distinct habitats may be used for oviposition. Along large slow-moving streams, eggs are deposited in nests constructed in sandy banks. Along foothill streams, females may climb hillsides, sometimes traveling up to 325 feet to find a suitable nest site. Nests have been observed in many soil types from sandy to very hard. Usually, soil must be at least 4 inches deep for nesting. Nests must have a relatively high internal humidity for eggs to develop and hatch properly. Depending on local conditions, 3 to 11 eggs are typically laid from March to August, with young emerging approximately 73 to 80 days later (CWHR 2020).

**RANGE:** WPT occurs throughout California west of the Sierra-Cascade crest. They are absent from desert regions, except along the Mojave River and its tributaries. Elevation range extends from near sea level to 4,690 feet (CWHR 2020).

**KNOWN RECORDS:** There are 5 CNDDDB records of WPT within the three Project quads. The closest record (Occurrence #633) is from 2004, approximately 1.3 miles southeast of Sump 089.

**HABITAT PRESENT IN THE BSA:** Suitable habitat occurs on the waterside of the levees at all sump sites.

**DISCUSSION:** No WPT were observed during the biological survey.

#### Sump 058

Suitable habitat occurs in the portion of Steelhead Creek and the 058 Sump Outfall Channel within the BSA. WPT may use shoreline woody debris for basking. Suitable nesting habitat occurs along the banks of Steelhead Creek and the 058 Outfall Channel.

#### Sump 089

Suitable habitat occurs in the portion of Morrison Creek within the BSA. WPT may use existing riprap and mud banks for basking. The creek bank is heavily armored with RSP and is not suitable for nesting.

### **Sump 102**

Suitable habitat occurs in the portion of Steelhead Creek within the BSA. WPT may use shoreline woody debris and rocks for basking. Suitable nesting habitat occurs along the banks of Steelhead Creek north and south of the headwall.

### **Sump 103**

Suitable habitat occurs in the adjacent portion of Arcade Creek when inundated. WPT may use collapsed woody debris in the creek for basking. The creek bank at Sump 103 is covered in a mixture of concrete and rocks and do not provide soil suitable for creating a nest. Nesting is unlikely due to dry conditions in Arcade Creek.

### **Sump 151**

Suitable habitat occurs in the portion of the American River Floodplain Channel within the BSA. An invasive turtle species that competes with the WPT for food resources and basking sites, the red-eared slider (*Trachemys scripta elegans*), was observed in the scour pool at the Sump 151 outfall during the biological survey. WPT may use shoreline woody debris and mud banks for basking. Suitable nesting habitat occurs on the banks of the American River Floodplain Channel south of the headwall.

### **Sump 154**

Suitable habitat occurs in the adjacent portion of Arcade Creek when inundated. Arcade Creek was dry at Sump 154 during the biological survey. WPT may use shoreline woody debris and rocks for basking. Nesting is unlikely due to dry conditions in Arcade Creek.

### **Sump 155**

Suitable habitat occurs in the portion of the American River within the BSA. WPT may use shoreline woody debris for basking. Suitable nesting habitat occurs north and south of the headwall, on the western bank of the American River.

### **Sump 159**

Suitable habitat for WPT occurs in the adjacent portion of Arcade Creek when inundated. WPT may use shoreline woody debris and mud banks for basking. Nesting is unlikely due to dry conditions in Arcade Creek.

**MITIGATION MEASURES:** Measures recommended for the CCV steelhead DPS will also protect WPT. In addition, the following avoidance and minimization efforts are recommended at all sumps:

- A qualified biologist shall conduct a preconstruction survey for WPT within 48 hours prior to the onset of vegetation removal or ground disturbance. The survey shall cover the waterside of the levee. If a WPT is located during the survey, the biologist will be given sufficient time prior to construction to relocate the WPT to the closest suitable habitat where they will not be affected by construction.

- If WPT are found during construction, construction activities with potential to harm the individual(s) will stop and a qualified biologist will be notified. Construction will resume when the biologist has either relocated the WPT out of the construction zone to nearby suitable habitat, or, after thorough inspection, determined that the WPT has moved away from the construction zone.
- Environmental awareness training will be conducted by a qualified biologist prior to the onset of project work. Construction personnel will be trained on how to identify WPT, and how to proceed if WPT is encountered. If a WPT is encountered in the work area, construction should stop and a qualified biologist should be notified. The training will be repeated for new personnel as they arrive at the site. Upon completion of training, employees will sign a form stating that they attended the training and understand all the protection measures.

### **Giant garter snake (*Thamnophis gigas*)**

**HABITAT AND BIOLOGY:** Giant garter snake (GGS) is a federal and state threatened species. GGS historically inhabited natural wetlands, but now mostly inhabit agricultural wetlands and other waterways, such as irrigation and drainage canals, riceland, marshes, sloughs, ponds, small lakes, low gradient streams with silt substrates, and adjacent uplands. The three habitat components most important to GGS are (USFWS 2017a):

- 1) A fresh-water ***aquatic component*** with protective emergent vegetative cover that will allow foraging.
- 2) An ***upland component*** near the aquatic habitat that can be used for thermoregulation and for summer shelter in burrows, and,
- 3) An ***upland refugia component*** that will serve as winter hibernacula.

**Aquatic Component.** GGS requires and is consistently observed in association with aquatic habitat. Ideal aquatic habitat exhibits the following characteristics (USFWS 2017a):

- 1) Water present from March through November.
- 2) Slow moving or static water flow with mud substrate.
- 3) Presence of emergent and bankside vegetation that provides cover from predators and may serve in thermoregulation.
- 4) Available prey in the form of small amphibians and small fish.
- 5) Thermoregulation (basking) sites with supportive vegetation such as folded tule clumps immediately adjacent to escape cover.
- 6) The absence of large predatory fish.
- 7) Absence of recurrent flooding, or where flooding is probable, the presence of upland refugia.

**Upland Component.** Although predominantly an aquatic species, GGS can be found in upland areas near the aquatic habitat component during the active spring and summer seasons. Upland habitat must occur adjacent to suitable aquatic habitat. Upland habitat is used for basking to regulate body temperature, for cover, and as a retreat into mammal burrows and crevices in the soil during ecdysis (shedding of skin) or to avoid predation. GGS have been observed using burrows as much as 164 feet from the edge of suitable aquatic habitat. Ideal upland habitat exhibits the following characteristics (USFWS 2017a):

- 1) Availability of bankside vegetation cover, typically tule (*Scirpus* spp., *Schoenoplectus* sp.) or cattail (*Typha* spp.), for screening from predators.
- 2) Availability of more permanent shelter, such as bankside cracks or crevices, holes, or small mammal burrows.
- 3) Free of poor grazing management practices (such as overgrazed areas).

**Upland Winter Refugia Component.** Around October 1, snakes move underground into mammal burrows, crevices, or other voids in the earth to avoid potentially lethal cool autumn and winter temperatures. Overwintering locations have been documented up to 820 feet from the edge of summer aquatic habitat. Overwintering locations are typically above the flood elevation, in locations with sunny exposures along south and west facing slopes (USFWS 2017a).

GGS begin emerging from overwintering refugia around April 1 (as early as March 1 in some years and locations) and are typically foraging actively by 15 April. The breeding season begins after emergence from overwintering sites, approximately March through May, and resumes briefly in September. Females brood young internally and give birth to live young from late July through early September. Young scatter immediately into dense cover, absorb their yolk sacs, and begin feeding on their own (USFWS 2017a).

Most of the snake's natural habitat has been lost, which is why many giant garter snakes live in rice fields. Rice fields provide hundreds of thousands of acres of habitat for the species. GGS are generally absent from larger rivers and from wetlands with sand, gravel or rock substrates. Riparian woodlands do not typically provide suitable habitat because of excessive shade, lack of basking sites, and lack of aquatic prey (USFWS 2017b).

**RANGE:** GGS is endemic to wetlands in the Central Valley of California. Historically, GGS inhabited the Sacramento and San Joaquin valleys from the vicinity of Chico, in Butte County, southward to Buena Vista Lake near Bakersfield, in Kern County. The historic distribution extended eastward to the foothills of the Sierra Nevada and westward to the foothills of the Coast Range (USFWS 2017a). The current (extant) range of the GGS extends from Chico in Butte County southward to the Mendota Wildlife Area in Fresno County. GGS have been observed at elevations ranging from 3 to 40 feet in the Sacramento Valley (USFWS 2012). The GGS Recovery Plan (USFWS 2017a) recognizes nine separate populations of GGS that coincide with riverine flood basins and tributary streams: Butte Basin, Colusa Basin, Sutter Basin, American Basin, Yolo Basin, Cosumnes-Mokelumne

Basin, Delta Basin, San Joaquin Basin, and Tulare Basin. These basin-wide populations coincide with Recovery Units identified by USFWS (2012). The basin-wide populations (and recovery units) occur in Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Kings, Madera, Merced, Placer, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba counties. Extant populations of GGS are known from Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo counties (USFWS 2017a). Studies conducted by Hansen (1988) in Sacramento, Sutter, Butte, Colusa, and Glenn counties, showed that GGS populations were distributed in areas where rice was grown.

**KNOWN RECORDS:** There are 10 CNDDDB records of GGS within the three Project quads. The closest record (Occurrence #198) is from 2005, approximately 0.7 mile southeast of Sump 089.

**HABITAT PRESENT IN THE BSA:** Potentially suitable aquatic and upland GGS habitat occurs in and along Morrison Creek at Sump 089.

**DISCUSSION:** No GGS were observed in the BSA during biological surveys.

### **Sump 089**

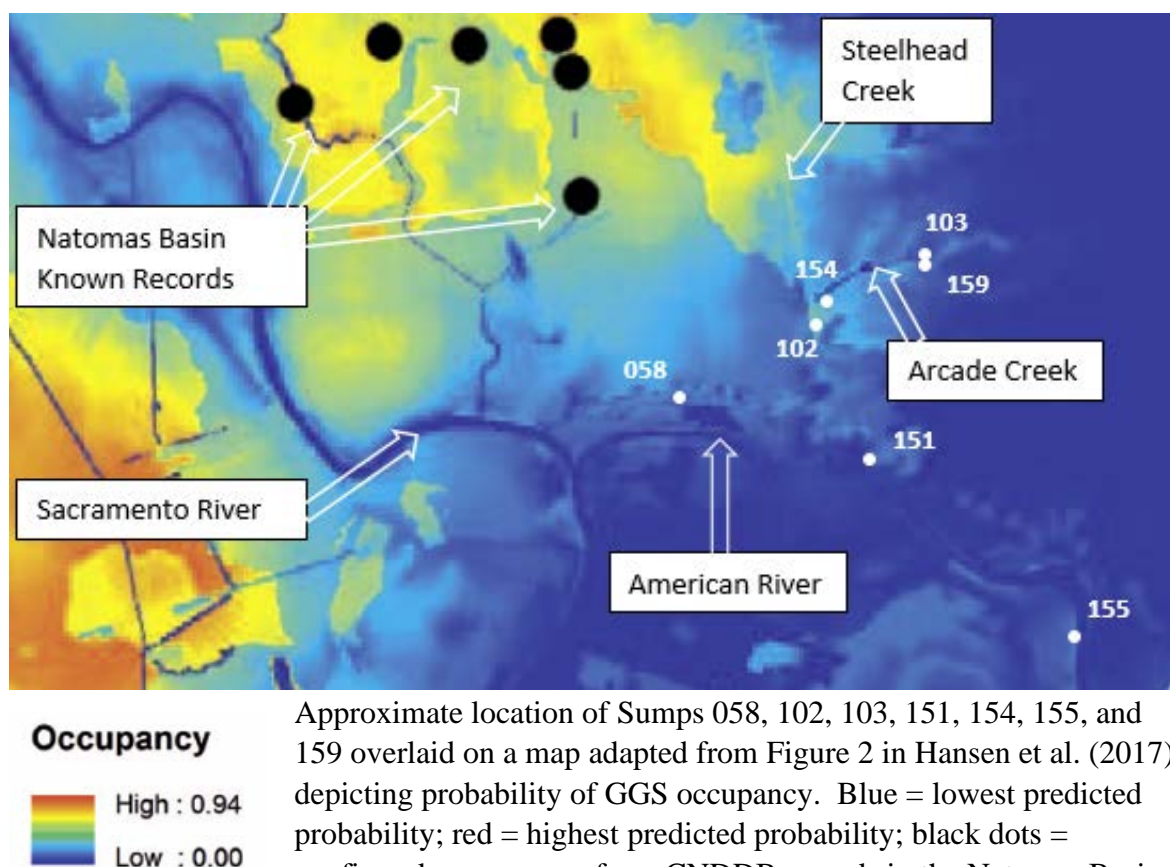
There are no known GGS populations in the portion of Morrison Creek adjacent to Sump 089. GGS could nevertheless occur in and along Morrison Creek adjacent to Sump 089. Morrison Creek contains water with emergent vegetation and suitable prey during the GGS active season. The levee slope provides basking habitat and contains small mammal burrows suitable for winter refugia. Aerial imagery shows that there is habitat connectivity between the BSA and the CNDDDB known records within 5 miles south of the BSA, including Occurrence #198, about 0.7 mile to the southeast.

### **Remaining Sumps**

GGS are not expected to occur at the remaining sump sites (058, 102, 103, 151, 154, 155, and 159) and staging areas. GGS are not known to occur in Steelhead Creek, Arcade Creek, or the American River. Sumps 058, 102, 103, 151, 154, 155, and 159 are located in areas that have been modeled as 'low probability of GGS occurrence' based on various environmental attributes known to be correlated with occupancy, including land cover, land use, and soil type (see Figure 5 below, adapted from Figure 2 in Hansen et al. 2017). Habitat suitability of Steelhead Creek is primarily limited by dense riparian canopy (typical for the lower portions of Steelhead Creek south of the confluence with Arcade Creek), and the assumed presence of large predatory fishes. Habitat suitability of Arcade Creek is limited by the lack of water during snake's active season (Arcade Creek was mostly dry during the July 2020 fieldwork), and by dense riparian canopy. Habitat suitability of the American River and its floodplain channels is limited by scouring flows, dense riparian vegetation, and lack of emergent vegetation, and the presence of large predatory fishes.

According to a GGS expert, there are no known occurrences of GGS in or east of Steelhead Creek, despite numerous GGS trapping surveys (Pers. Comm., E. Hansen). The lack of GGS occurrences in and east of Steelhead Creek could be due in part to a shift from hydric soils to cementitious soils (Hansen et al. 2017). According to the USFWS biological opinion for the Encroachment Permit No. 4074-1 (issued for pipe replacement at Sump 154 in 2017), GGS are unlikely to occur in the southern portion of Steelhead Creek (south of the intersection with Dry Creek) due to the close proximity to urban development, high level of human disturbance, presence of riparian vegetation along the banks of most channel reaches, and lack of extensive marsh or rice to the east.

Figure 5. Giant Garter Snake Occurrence Probability



**MITIGATION MEASURES:** The following measures are recommended for Sump 089 to reduce impacts to GGS:

- A USFWS-approved biologist shall conduct a preconstruction clearance survey within 24 hours prior to construction activities within identified GGS aquatic and adjacent upland habitat. If construction activities stop for a period of 2 weeks or

more, another preconstruction clearance survey will be conducted within 24 hours prior to resuming construction activity.

- Restrict all construction activity involving disturbance of giant garter snake habitat to the snake's active season, May 1 through October 1. During this period, the potential for direct mortality is reduced because snakes are expected to move and avoid danger.
- In areas where construction is to take place, encourage giant garter snakes to leave the site on their own by dewatering all irrigation ditches, canals, or other aquatic habitat (i.e., removing giant garter snake aquatic habitat) between April 15 and September 30. Dewatered habitat must remain dry, with no water puddles remaining, for at least 15 consecutive days prior to excavating or filling of the habitat. If a site cannot be completely dewatered, netting and salvage of giant garter snake prey items may be necessary to discourage use by snakes.
- As mentioned in General Conservation Measures, above, conduct environmental awareness training for all construction personnel.
- If a live giant garter snake is encountered during construction activities, immediately notify the project's biological monitor, USFWS, and CDFW. The monitor will stop construction in the vicinity of the snake, monitor the snake, and allow the snake to leave on its own. The monitor will remain in the area for the remainder of the workday to ensure the snake is not harmed or, if it leaves the site, does not return. If the giant garter snake does not leave on its own, the qualified biologist will contact the USFWS for guidance.
- Install temporary fencing exclusion fencing around work area in GGS habitat.

#### **4. Birds**

##### **Nesting Birds Listed Under the MBTA or Regulated by CA Fish and Game Code**

The federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) protects most birds and their nests, including most non-migratory birds in California. The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any bird listed in 50 CFR Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations. Any disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a 'take' of the species under federal law.

California Fish and Game Code (FGC) § 3503 protects most birds and their nests. FGC § 3503.5 further protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds of prey). Birds of prey include raptors, falcons, and owls. In 2019, the State of California enacted the California Migratory Bird Protection Act. The Act prohibits the take or possession of any bird or any part of birds listed under the MBTA as of January 2020. The California Fish and Game Code, continues to use a broad definition of take, including incidental take.

**HABITAT PRESENT IN THE BSA:** The BSA provides potential nesting habitat for birds listed under the MBTA and/or regulated by FGC. Depending on the species, birds may nest on trees, shrubs, in or on the ground, and on artificial structures such as buildings, poles, and signs.

**DISCUSSION:** Numerous birds listed under the MBTA or regulated by CA Fish and Game Code were observed during the surveys (Appendix C). Active nests of barn swallows were observed on the sump structures at Sumps 89, 102, and 103. Active nests of cliff swallows were observed under the bridge approximately 100 feet southeast of Sump 103, and 100 feet northeast of Sump 159. Other nests could become established in the BSA during future nesting seasons. Nesting or attempted nesting by migratory birds and birds-of-prey is anticipated from 1 February to 30 September. Construction during the nest season could lead to active nest destruction or abandonment.

**MITIGATION MEASURES:** Under the MBTA, nests that contain eggs or unfledged young are not to be disturbed during the breeding season. Nesting or attempted nesting by migratory birds and birds-of-prey is anticipated from 15 February to 31 August. The following mitigation measures are recommended at all sumps to reduce the impact to birds-of-prey and birds protected by the MBTA and avoid take of fully protected bird species:

- To minimize effects to nesting birds, trees and shrubs scheduled for removal will be removed during the non-breeding season, between 2 September and 14 February.
- A preconstruction survey for nesting birds will be conducted prior to any work initiated between 15 February and 1 September. A qualified biologist will conduct the survey within 14 days prior to initiation of construction activities. The survey will cover areas within 500 feet of the project for birds of prey and 100 feet of the project for migratory birds.
- If an active nest of a bird of prey, migratory bird, or other protected bird species is discovered, then construction within 500 feet of the nest will stop until a qualified biologist confirms where work may resume without threat of nest abandonment. The biologist will establish a minimum 500-foot Environmentally Sensitive Area (ESA) around nests of bird of prey. A minimum 100-foot ESA will be established around nests of migratory or other protected bird species. No construction activity will be allowed in the ESA until the biologist determines the nest is no longer active or that a smaller ESA will protect the active nest. Buffer sizes may be adjusted at the discretion of the biologist depending on the species of bird, the location of the nest relative to the project, the existing level of disturbance, and other site-specific conditions.

### **Burrowing owl (*Athene cunicularia*)**

**HABITAT AND BIOLOGY:** Burrowing owl is a state species of special concern. Nesting sites are of concern to CDFW (2019c). Burrowing owls primarily inhabit open, dry grassland

and desert habitats, such as grasses, forbs, and open shrub stages of pinyon-juniper and ponderosa pine habitats (CWHR 2020, Shuford and Gardali 2008). Main habitat components include burrows for roosting and nesting, and relatively short vegetation with sparse shrubs and taller vegetation (Shuford and Gardali 2008). Burrowing owls most commonly use ground squirrel burrows, but they may also use badger, coyote, and fox holes or dens; or human-made structures such as culverts, piles of concrete rubble, pipes and nest boxes (CWHR 2020; Shuford and Gardali 2008). An active nest chamber is often lined with excrement, pellets, debris, grass and feathers (CWHR 2020). This species also thrives in highly altered human landscapes. In agricultural areas, owls nest along roadsides, under water conveyance structures, and near and under runways and similar structures. In urban areas, burrowing owls persist in low numbers in highly developed parcels, busy urban parks, and adjacent to roads with heavy traffic. In the Imperial Valley, owls are able to excavate their own burrows in soft earthen banks of ditches and canals (Shuford and Gardali 2008).

Burrowing owls are a semi-colonial species that breed in California from March through August, though breeding can begin as early as February and extend into December (Shuford and Gardali 2008; CWHR 2020). A large proportion of adults show strong nest site fidelity. Burrowing owls typically feed on a broad range of insects, but also on small rodents, birds, amphibians, reptiles, and carrion. Foraging usually occurs close to their burrow (Shuford and Gardali 2008).

**RANGE:** Burrowing owls are a year-round resident in most of California, particularly in the Central Valley, San Francisco Bay region, Carrizo Plain, and Imperial Valley (Shuford and Gardali 2008). This species is generally absent from the humid coastal counties north of Marin County and from mountainous areas above 5,300 feet (Shuford and Gardali 2008; CWHR 2020).

**KNOWN RECORDS:** There are 26 CNDDDB records of burrowing owl within the three Project quads. The closest record (Occurrence #569) is from 1901 and overlaps the BSA at Sumps 159 and 103. The records are of collected eggs from “Haggin’s Ranch, 5 miles north of Sacramento”, the current site of the developed Hagginwood neighborhood in Sacramento. The next nearest record (Occurrence #61) is from 1974, approximately 480 feet south of Sump 155. The record describes 16 burrows and 13 nesting colonies on the Sacramento State University campus and on the west (land) side of the adjacent levee in 1974.

**HABITAT PRESENT IN THE BSA:** The open grassland on levee slopes provide potential foraging habitat at all sump sites. Burrows potentially suitable for nesting occur at Sump 089.

**DISCUSSION:** Areas within 500 feet of proposed work were surveyed for burrowing owl and potentially suitable burrows. No burrowing owls, or sign of burrowing owl were observed during biological surveys. Burrows potentially suitable for burrowing owl were observed at Sump 089 as described below. Sump 089 was covered by comprehensive nesting raptor surveys conducted by Sacramento Regional County Sanitation District (Regional Sans) Bufferlands biologists between February and May 2020 (Regional Sans Bufferlands 2020).

The surveys did not detect burrowing owls within an approximately 5 square mile area around Sump 089 BSA (Regional Sans Bufferlands 2020).

### **Sump 089**

Several potentially suitable burrows occur on the water side of the levee within a small burrow complex located near the levee crest on the water side of the levee (location noted on Figure 4). The burrows are in an area that will likely be disturbed by the Project. The burrows showed no sign of occupancy by burrowing owl or California ground squirrel and were likely unoccupied during the July 2020 survey. The burrows could become occupied by burrowing owls prior to construction. California ground squirrels were observed northeast of the BSA. The annual grassland and urban ruderal areas within the BSA provide suitable foraging habitat for burrowing owl.

### **Remaining Sumps**

No California ground squirrels or small mammal burrows suitable for burrowing owl were observed within the BSA, or within 500 feet at any other sump sites.

**MITIGATION MEASURES:** The following mitigation measures are recommended for Sump 089 to reduce potential impacts to burrowing owl to less than significant:

A qualified biologist will conduct Take Avoidance Surveys in accordance with Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFW 2012). An initial Take Avoidance Survey will be conducted no less than 14 days prior to initiating ground disturbance activities and a final survey will be conducted within 24 hours prior to ground disturbance.

The preconstruction survey for burrowing owls will include all potential burrowing owl habitat within 500 feet of the project. Portions of the survey area located on private land will be surveyed from all publicly accessible areas.

If active burrowing owl burrows are found, the following measures shall be implemented:

- During the non-breeding season (1 September through 31 January), the biologist shall establish a 160-foot ESA around the burrow. During the breeding season (1 February through 31 August), the biologist shall establish a 300-foot ESA around the burrow in consultation with CDFW.
- The size of the ESA may be reduced if the biologist monitors the construction activities and determines that no disturbance to the burrowing owl is occurring. Reduction of ESA size depends on the location of the burrow relative to the project, project activities during the time the burrow is active, and other project-specific factors.
- If the burrow is located within the construction zone and it is during the non-breeding season, the burrowing owl can be passively excluded from the burrow using one-way doors, as described in the Exclusion Plan of Appendix E of the Staff Report on Burrowing Owl Mitigation (CDFW 2012).

- If the burrow is located within the construction zone and it is during the breeding season, the burrow owl can only be passively excluded if it has been confirmed that the owl has not begun egg laying and incubation, the clutch was unsuccessful, or juveniles from the occupied burrows are foraging independently and are capable of independent survival.

### **Swainson's hawk (*Buteo swainsoni*)**

**HABITAT AND BIOLOGY:** Swainson's hawk is a state threatened species. Swainson's hawks nest in open riparian habitat, in scattered trees, or in small groves in sparsely vegetated flatlands. Nesting areas are usually located near water, but are occasionally found in arid regions. Typical habitat includes open desert, grassland, or cropland containing scattered, large trees or small groves (CWHR 2020). Swainson's hawk breeds from late March to late October (CWHR 2020). They forage in adjacent grasslands, suitable grain or alfalfa fields, or in livestock pastures, feeding on rodents, small mammals, small birds, reptiles, large arthropods, amphibians, and, rarely, fish (Bloom 1980; CWHR 2020).

**RANGE:** Swainson's hawk is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert (CWHR 2020). Swainson's hawks breed and forage in the California's Central Valley in spring and summer. Migrating individuals move south through the southern and central interior of California in September and October, some migrating as far as South America (CWHR 2020).

**KNOWN RECORDS:** There are 56 CNDDDB records of Swainson's hawk within the three Project quads. The closest record (Occurrence #931) is from 2001, approximately 200 feet south of Sump 058. The next closest record (Occurrence #2213) is from 2012, approximately 550 feet south of Sump 151. According to raptor survey data collected in 2020 by the Sacramento Regional County Sanitation District (Regional San Bufferlands 2020), two Swainson's hawk nests were observed within 0.5 mile of Sump 089. The closest nest was located approximately 0.25 mile southwest of Sump 089.

**HABITAT PRESENT IN THE BSA:** Suitable nesting habitat occurs in trees at all sump sites. Annual grassland within the BSA provides suitable or marginal foraging habitat for Swainson's hawk at all sump sites.

**DISCUSSION:** Swainson's hawks were observed flying overhead the BSA at Sumps 089 and 154 during the biological survey. No potential raptor nests were observed in the BSA at any of the sump sites. Trees within or within 500 feet of the BSA at all sump sites except Sump 159 provide suitable nesting habitat. Trees in the riparian forest at Sump 159 provide marginal nesting habitat due to the high level of disturbance, which includes trash, dozens of homeless encampments, and domestic dogs.

The areas of annual grassland within the BSA at Sumps 089, 102, 151, 154, and 155 are suitable foraging habitat for Swainson's hawk, while smaller or more disturbed grassland patches at Sumps 058, 103 and 159 provide marginal foraging habitat. Larger expanses of

suitable foraging habitat, including along the adjacent levee slopes, surround or are within less than 500 feet of the BSA at all of the sump sites.

**MITIGATION MEASURES:** Measures recommended for nesting birds will also protect Swainson's hawk. Additionally, the following measure is recommended for all sumps to reduce potential impacts to Swainson's hawk to less than significant:

- If construction or tree removal cannot be avoided during the nesting season (15 March through 30 August), a qualified biologist shall conduct a properly timed preconstruction survey for Swainson's hawk in accordance with the applicable portions of the 2000 Swainson's Hawk Technical Advisory Committee (TAC) guidelines within 15 days prior to the beginning of construction. The survey area will extend 0.25 miles out from the BSA. If a Swainson's hawk nest is active within the 0.25-mile survey area at the time of project initiation, protective buffers will be established around the nest in coordination with CDFW to avoid 'take'.

### **White-tailed kite (*Elanus leucurus*)**

**HABITAT AND BIOLOGY:** White-tailed kites nest in trees located in a variety of wooded habitats including riparian areas, oak woodlands, eucalyptus groves, and scattered isolated trees (YHC 2018). Areas with substantial groves of dense, broad-leaved deciduous trees are generally used for nesting and roosting. Nests are typically located from 20 to 100 feet above the ground near the top of dense oak, willow, or other tree, and are often located near an open foraging area with a dense population of voles (CWHR 2020). They are rarely found away from agricultural areas. They forage in cultivated lands (field crops, grain and hay, and cultivated/pasture land), annual grasslands and wetland areas (YHC 2019). White-tailed kite prey mostly on voles and other small, diurnal mammals, occasionally on birds, insects, reptiles, and amphibians (CWHR 2020). White-tailed kites breed from February to October, with peak activity from May to August.

**RANGE:** White-tailed kites are a year-round resident of coastal and valley lowlands in cismontane California; they are absent from higher elevations in the Sierra Nevada, the Modoc Plateau, and from most desert regions (CWHR 2020).

**KNOWN RECORDS:** There are 12 CNDDDB records of white-tailed kite within the three Project quads. The closest record (Occurrence #142) is from 2009, approximately 0.5 mile southeast of Sump 151.

**HABITAT PRESENT IN THE BSA:** There is suitable nesting habitat for white-tailed kite at all sump sites. Annual grassland within the BSA provides suitable or marginal foraging habitat at all the sump sites.

**DISCUSSION:** No white-tailed kites were observed within the BSA or flying overhead during the biological survey. No potential raptor nests were observed in or adjacent to the BSA at any of the sump sites. Trees within the BSA or within 500 feet of the BSA provide nesting habitat for white-tailed kite at all sump sites.

The areas of annual grassland within the BSA at Sumps 089, 102, 151, 154, and 155 are suitable foraging habitat for white-tailed kite, while smaller or more disturbed grassland patches at Sumps 058, 103 and 159 provide marginal foraging habitat. Larger expanses of suitable foraging habitat, including along the adjacent levee slopes, surround or are within less than 500 feet of the BSA at all of the sump sites.

**MITIGATION MEASURES:** Mitigation measures recommended for birds of prey and birds protected by MBTA are recommended for all sumps to avoid take of white-tailed kite.

### **Song sparrow “Modesto Population” (*Melospiza melodia*)**

**HABITAT AND BIOLOGY:** The Modesto Population of song sparrow (hereafter, ‘Modesto song sparrow’) is a state species of special concern. Modesto song sparrow is a year-round resident that prefers emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets. Modesto song sparrows also nest in riparian forests of valley oak with sufficient understory of blackberry, along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites. The Modesto song sparrow thrives where extensive wetlands remain. They may also breed in sparsely vegetated irrigation canals (Shuford and Gardali 2008).

**RANGE:** The Modesto song sparrow is endemic to California, with established populations in the Sacramento Valley, Sacramento-San Joaquin River Delta, and northern San Joaquin Valley. It is most abundant in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta. They are almost entirely absent from the main stem and tributaries of the Sacramento River above Sacramento (Shuford and Gardali 2008).

**KNOWN RECORDS:** There are 4 CNDDDB records of Modesto song sparrow within the three Project quads. The closest record (Occurrence #83) is a coarsely mapped polygon based on a siting in 1900. The record overlaps the BSA at seven of the eight sump sites (all except for Sump 089).

**HABITAT PRESENT IN THE BSA:** Suitable nesting habitat occurs within the BSA at sumps 058, 102, 103, 151, and 159.

**DISCUSSION:** Modesto song sparrow was not observed during the biological survey.

#### **Sump 058**

Trees in the BSA provide suitable nesting habitat for Modesto song sparrow. Annual grassland within the BSA provides suitable foraging habitat. California wild grape extends up over many of the trees and does not provide an open canopy that Modesto song sparrow prefer. Nonetheless, the riparian forest and dense understory along Steelhead Creek provide suitable nesting habitat for Modesto song sparrow.

#### **Sump 102**

The riparian forest habitat within the BSA provides suitable nesting habitat for Modesto song sparrow. Annual grassland within the BSA provides suitable foraging habitat. The

portion of Steelhead Creek within the BSA contains abundant emergent vegetation and the riparian forest contains dense willow trees suitable for Modesto song sparrow nesting. Suitable foraging habitat occurs in the annual grassland within the BSA.

### **Sump 103**

The riparian forest provides marginal nesting habitat. Annual grassland within the BSA provides suitable foraging habitat for Modesto song sparrow. The riparian forest contains some willow and valley oak trees. There is no blackberry understory within the BSA and there is a significant amount of human disturbance at this site. Habitat for nesting is considered marginal. Suitable foraging habitat occurs in the annual grassland within the BSA.

### **Sump 151**

The riparian forest provides suitable nesting habitat. Annual grassland provides suitable foraging habitat. Modesto song sparrow could nest in the willows along the floodplain channel or within other areas of emergent vegetation within the BSA. Suitable foraging habitat occurs in the annual grassland within the BSA.

### **Sump 159**

The riparian forest provides suitable nesting habitat. Annual grassland provides suitable foraging habitat for Modesto song sparrow. The riparian forest contains some willow trees suitable for nesting, although willows do not form a thicket. Trees in the BSA form a dense canopy and there is a significant amount of human disturbance at this site. Nesting habitat is considered marginal. Suitable foraging habitat occurs in the annual grassland within the BSA.

### **Remaining Sumps**

The BSA at the remaining sumps does not provide suitable nesting habitat for Modesto song sparrow. The BSA along Morrison Creek consists of a patchily vegetated riparian forest. Arcade Creek at Sump 154 does not contain any riparian vegetation and is not perennially inundated. Modesto song sparrow are more likely to nest along areas of Arcade Creek that are inundated and have sufficient vegetation. Modesto song sparrow is not known to occur along large rivers such as the American River. Sump 155 along the American River also lacks suitable understory and emergent vegetation for nesting.

**MITIGATION MEASURES:** Mitigation measures recommended for birds of prey and birds protected by MBTA are recommended for Sumps 058, 102, 103, 151, and 159 to avoid take of song sparrow.

## **E. Evaluation of Special-Status Plants**

No State or federal listed special-status plant species were observed in the BSA during protocol botanical survey conducted on 22 and 23 July 2020, during the evident and identifiable period. Special-status plant species with habitat present are discussed below.

### **Bristly sedge (*Carex comosa*)**

**HABITAT AND BIOLOGY:** Bristly sedge is a perennial rhizomatous herb found in coastal prairie, marshes and swamps, and valley and foothill grasslands from 0 to 2,050 feet. It blooms May through September (CNPS 2020a); July through September (Jepson eFlora 2020).

**RANGE:** Bristly sedge is known from Contra Costa, Lake, Mendocino, Sacramento, San Bernardino, Santa Cruz, San Francisco, Shasta, San Joaquin, and Sonoma County. It is presumed extirpated from San Bernardino and San Francisco counties (CNPS 2020a).

**KNOWN RECORDS:** There are no CNDDDB records of bristly sedge in the three Project quads. The closest CNDDDB record of bristly sedge (Occurrence #28) is from 2009, approximately 6 miles southwest of Sump 089.

**HABITAT PRESENT IN THE BSA:** The banks of Steelhead Creek, Morrison Creek, Arcade Creek, the American River, and the American River Floodplain Channel provide potential habitat for bristly sedge.

**DISCUSSION:** Bristly sedge was not observed in the BSA during the botanical survey conducted in July 2020 during the evident and identifiable period.

**Woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*)**

**HABITAT AND BIOLOGY:** Woolly rose-mallow is a perennial rhizomatous herb found in riprap on sides of levees, freshwater marshes, wet banks, swamps and wetlands from sea level to 395 feet. It blooms from June through September (CNPS 2020a); July through November (Jepson eFlora 2020).

**RANGE:** Endemic to California. Woolly rose-mallow is known from Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo counties (CNPS 2020a).

**KNOWN RECORDS:** There are three CNDDDB records for woolly rose-mallow in the three Project quads. The closest record (Occurrence #189) is from 2009 and is 2 miles southwest of Sump 089.

**HABITAT PRESENT IN THE BSA:** The banks of Steelhead Creek, Morrison Creek, Arcade Creek, the American River, and the American River Floodplain Channel provide potential habitat for woolly rose mallow.

**DISCUSSION:** Woolly rose-mallow was not observed in the BSA during the botanical survey conducted in July 2020, during the evident and identifiable period.

**Sanford's arrowhead (*Sagittaria sanfordii*)**

**HABITAT AND BIOLOGY:** Sanford's arrowhead is a perennial rhizomatous herb found in assorted shallow freshwater marshes and swamps (CNPS 2020a). It blooms May through October (Jepson eFlora 2020); May through November (CNPS 2020a).

**RANGE:** Endemic to California. Known from Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Marin, Napa, Orange, Placer, Sacramento, San Bernardino, Shasta, San Joaquin, Solano, Tehama, Tulare, Ventura, Yuba counties. Presumed extirpated from Orange and Ventura counties (CNPS 2020a).

**KNOWN RECORDS:** There are 25 CNDDDB records within the three Project quads. The closest record (Occurrence #26) is from 1993, and overlaps the BSA at Sump 154. The next nearest record (Occurrence #97) is from 2011, approximately 200 feet east of the BSA at Sump 154.

**HABITAT PRESENT IN THE BSA:** The banks of Steelhead Creek, Morrison Creek, Arcade Creek, the American River, and the American River Floodplain Channel provide potential habitat for Sanford's arrowhead.

**DISCUSSION:** Sanford's arrowhead was not observed in the BSA during the botanical survey conducted in July 2020, during the evident and identifiable period.

## VI. LITERATURE CITED

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- Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, eds. 2012. The Jepson manual: Vascular plants of California, 2nd Ed. University of California Press, Berkeley, CA.
- California Data Exchange Center (CDEC). Accessed August 2020. Real-Time and historic average precipitation data from the Sacramento Gauge (SCR). California Department of Water Resources, Sacramento, CA. <http://cdec.water.ca.gov/dynamicapp/QueryMonthly?end=2020-08&s=scr>
- California Department of Fish and Game (CDFG). 2001. Fish Bulletin 170 – Contributions to the Biology of Central Valley Salmonids: Central Valley Steelhead. Denis R. McEwan. Vol 1 of 2.
- California Department of Fish and Wildlife (CDFW). Accessed April 2020. Longfin smelt. Fisheries Branch, West Sacramento, CA. <https://wildlife.ca.gov/Conservation/Fishes/Longfin-Smelt>
- California Department of Fish and Wildlife (CDFW). April 2019 (2019a). State and federally listed endangered and threatened animals of California. Biogeographic Data Branch, CNDDDB, Sacramento, CA.
- California Department of Fish and Wildlife (CDFW). August 2019 (2019b). Special vascular plants, bryophytes, and lichens list. Habitat Conservation Division, CNDDDB, Sacramento, CA. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline>
- California Department of Fish and Wildlife (CDFW). August 2019 (2019c). Special animals. Periodic publication. Natural Diversity Database, Sacramento, CA.
- California Department of Fish and Wildlife (CDFW). 8 November 2019 (2019d). California Natural Community List. Natural Heritage Division, CNDDDB, Sacramento, CA. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline>
- California Department of Fish and Wildlife (CDFW). 20 March 2018 (2018). Protocols for surveying and evaluating impacts to special status native plant populations and sensitive natural communities. California Natural Resources Agency, CA Department of Fish and Wildlife.
- California Native Plant Society (CNPS). Accessed May 2020 (2020a). Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.38). California Native Plant Society, Sacramento, CA. <http://www.rareplants.cnps.org/simple.html>
- California Native Plant Society (CNPS). Accessed May 2020 (2020b). A Manual of California Vegetation, Online Edition. California Native Plant Society, Sacramento, CA. <http://www.cnps.org/cnps/vegetation/>
- California Wildlife Habitat Relationships (CWHR) Program. Accessed August 2020. California Wildlife Habitat Relationships System, life history account and range map for various wildlife species. Updated from Zeiner, D.C. et al 1988-1990. CWHR Program, California Department of Fish and Game, Sacramento, CA. <http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx>
- CalPhotos. Accessed 2020. Plant images. <http://calphotos.berkeley.edu/flora/>
- Cardno. 2017. Technical Memorandum 9: Lower American River Water Temperature Regression Relationships. Placer County Water Agency.
- Cech, J.J. Jr., & C.A. Myrick. 1999. Steelhead and Chinook salmon bioenergetics: Temperature, ration, and genetic effects. Technical Completion Report, University of California Water Resources Center.

- City of Sacramento. October 2013. Administrative and Technical Procedures Manual for Grading and Erosion and Sediment Control. Department of Utilities. 215 pp.
- Collinge, S.K., M. Holyoak, C.B. Barr, and T.J. Marty. 2001. Riparian habitat fragmentation and population persistence of the threatened valley elderberry longhorn beetle in central California. *Biological Conservation*. 100. 103–113 pp.
- Federal Energy Regulatory Commission (FERC). January 2003. Interim Report. Literature Review of Life History and Habitat Requirements for Feather River Fish Species: Chinook Salmon.
- Hansen, G. E. 1988. Review of the status of the giant garter snake (*Thamnophis couchi gigas*) and its supporting habitat during 1986-1987. Final report for California Department of Fish and Game, Contract C-2060. Unpublished. Sacramento, CA. In draft recovery plan for the giant garter snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Portland, OR.
- Hansen, E. C., R. D. Scherer, E. Fleishman, B. G. Dickson, and D. Krolick. 2017. Relations between Environmental Attributes and Contemporary Occupancy of Threatened Giant Gartersnakes (*Thamnophis gigas*). *Journal of Herpetology*. 51 (2)
- Jepson eFlora. Accessed 2020. Online version of Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, eds. 2012. The Jepson manual: Vascular plants of California, 2nd ed. University of California Press, Berkeley, CA.  
<http://ucjeps.berkeley.edu/eflora/>
- Jones and Stokes. 2007. Existing Conditions and Assessment Report and Stream Corridor Management Plan for Arcade Creek, Sacramento County, California. Sacramento, CA.
- McEwan, D., T. A. Jackson. 1996. Steelhead restoration and management plan for California. California Department of Fish and Game.
- McGinnis, S. M. 1984. Freshwater fishes of California. University of California Press, Berkeley, CA.
- Migratory Bird Protection Act. 2020. H.R. 5552, 116th Congress.
- Moyle, P. B. 2002. Inland fishes of California. University of California Press, Berkeley, CA.
- Moyle, P. B., R. D. Baxter, T. Sommer, T. C. Foin, and S. A. Matern. 2004. Biology and population dynamics of Sacramento splittail (*Pogonichthys macrolepidotus*) in the San Francisco Estuary: a review. *San Francisco Estuary and Watershed Science*. 2 (2).
- Moyle, P. B., R. M. Quinones, J. V. Katz, and J. Weaver. 2015. Fish Species of Special Concern in California, 3rd Edition: Fish Species of Special Concern Accounts. California Department of Fish and Wildlife, Sacramento, CA. <https://www.wildlife.ca.gov/Conservation/Fishes/Special-Concern>.
- National Marine Fisheries Service (NMFS). 19 March 1998 (1998). Endangered and threatened species: Threatened status for two ESUs of Steelhead in Washington, Oregon, and California; final rule. *Federal Register* 63(53):13347-13371; 50 CFR Part 227.
- National Marine Fisheries Service (NMFS). 2 September 2005. Endangered and threatened species; designation of critical habitat for seven evolutionarily significant units of Pacific salmon and steelhead in California. Final Rule; *Federal Register* 70(170):52488-52627; 50 CFR Part 226. National Oceanic and Atmospheric Administration.
- National Marine Fisheries Service (NMFS). 5 January 2006. Endangered and threatened species: Final listing determinations for 10 distinct population segments of West Coast steelhead; Final rule. *Federal Register* 71(3): 834-862; 50 CFR Parts 223 and 224.
- National Marine Fisheries Service (NMFS). 15 October 2008. Fisheries Off West Coast States; West Coast Salmon Fisheries; Amendment 14; Essential Fish Habitat Descriptions for Pacific Salmon. Final rule. *Federal Register* 73(200): 60987-60994; 50 CFR Part 660.

- National Marine Fisheries Service (NMFS). 16 June 2009 (2009a). List of all Federal candidate, proposed, and listed threatened or endangered species that could occur within Arcade Creek and Natomas East Main Drainage Canal where the proposed Sump 154 Outfall Maintenance Project would occur.
- National Marine Fisheries Service (NMFS). 9 October 2009 (2009b). Endangered and Threatened Wildlife and Plants: Final Rulemaking to Designate Critical Habitat for the Threatened Southern Distinct Population Segment of North American Green Sturgeon. Federal Register. 74 (195): 080730953–91263–02, 50 CFR Part 226.
- National Marine Fisheries Service (NMFS). 2014. Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook Salmon and Central Valley Spring-run Chinook Salmon and the Distinct Population Segment of California Central Valley Steelhead. California Central Valley Area Office.
- National Marine Fisheries Service (NMFS). 24 October 2016 (2016). NMFS Biological Opinion for USBR Mendota Pool Bypass and Reach 2B Improvements Project. Letter from Barry Thom Regional Administrator, to Alicia Forsythe, Program Manager, U.S. Bureau of Reclamation. Reference: 2016-4138
- National Marine Fisheries Service (NMFS). 10 May 2019. Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project.
- National Marine Fisheries Service (NMFS). Accessed 1 May 2020 (2020b). Essential Fish Habitat Mapper. <https://www.habitat.noaa.gov/application/efhmapper/index.html>
- Natural Resources Conservation Service (NRCS). Accessed August 2020 (2020a). Official soil series descriptions. Soil Survey Staff, United States Department of Agriculture. [http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/survey/class/data/?cid=nrcs142p2\\_053587](http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/survey/class/data/?cid=nrcs142p2_053587)
- Natural Resources Conservation Service (NRCS). Accessed August 2020 (2020b). Web soil survey for Sacramento, CA. National Soil Survey Center, Lincoln, NE. <http://websoilsurvey.nrcs.usda.gov/app/NimbusFishHatchery>. 2018. Salmonid Spawning and Release Operations at Nimbus Fish Hatchery. <https://www.calfish.org/ProgramsData/ConservationandManagement/CentralValleyMonitoring/SacramentoValleyTributaryMonitoring/LowerAmericanRiver/NimbusFishHatchery.aspx>
- Reily, B. M., and T. J. Benson. 2019. Avian fitness consequences match habitat selection at the nest-site and landscape scale in agriculturally fragmented landscapes. *Ecology and Evolution*. 12 (9).
- Sacramento County Regional Sanitation District (Regional San). 16 July 2014. Sacramento Regional County Sanitation District/Sacramento Power Authority/City of Sacramento Water Recycling Pipeline Project Draft Environmental Impact Report. Sacramento, CA.
- Sacramento Regional County Sanitation District (Regional San Bufferlands). Received 22 July 2020. Year 2020 raptor survey results for the Sacramento Regional San Bufferlands. Google Earth kmz file: *Raptor Nests 2020.kmz*.
- Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California vegetation, 2<sup>nd</sup> ed. California Native Plant Society, Sacramento, CA.
- Shuford, W. D. and T. Gardali. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

- Schwartz, R. and B. May. 2008. Genetic Evaluation of Isolated Populations for Use in Reintroductions Reveals Significant Genetic Bottlenecks in Potential Stocks of Sacramento Perch. *Transactions of The American Fisheries Society*: 137 (6).
- Sycamore Environmental Consultants, Inc. (Sycamore Environmental). 2020. Aquatic Resources Delineation Report for the Pump Outfalls Replacement Project. Sycamore Environmental, Sacramento, CA.
- Talley, T. S., D. Wright, M. Holyoak. 14 February 2007. Assistance with the 5-year review of the Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). Prepared for U.S. Fish and Wildlife Service, Sacramento Office, Sacramento, California
- Thomson, R. C., A. N. Wright, H. B. Shaffer. 2016. California amphibian and reptile species of special concern. Co-published by University of CA and CA Dept of Fish and Wildlife. University of California Press, Oakland, CA.
- U.S. Army Corps of Engineers (Corps). 1987. Corps of Engineers wetlands delineation manual, Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- U.S. Department of Agriculture and Natural Resources Conservation Service (NRCS). Accessed August 2020 (2020a). Official soil series descriptions. <https://soilseries.sc.egov.usda.gov/osdname.asp>
- U.S. Department of Agriculture and Natural Resource Conservation Service (NRCS). Accessed August 2020 (2020b). Official soil series descriptions. <https://soilseries.sc.egov.usda.gov>. Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/>
- U.S. Fish and Wildlife Service (USFWS). 8 August 1980. Listing the Valley elderberry longhorn beetle as a threatened species with critical habitat; final rule. *Federal Register* 45(155):52803-52807, 50 CFR Part 17.
- U.S. Fish and Wildlife Service (USFWS). 1991. The distribution, habitat, and status of the Valley elderberry longhorn beetle. U.S. Fish and Wildlife Service, Sacramento, CA.
- U.S. Fish and Wildlife Service (USFWS). January 2000. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants.
- U.S. Fish and Wildlife Service (USFWS). September 2006. Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) 5-year review: Summary and evaluation. U.S. Fish and Wildlife Service, Sacramento, CA.
- U.S. Fish and Wildlife Service (USFWS). June 2012 (2012). Five year review: giant garter snake (*Thamnophis gigas*). Sacramento Fish and Wildlife Office, Sacramento, CA. [http://ecos.fws.gov/docs/five\\_year\\_review/doc4009.pdf](http://ecos.fws.gov/docs/five_year_review/doc4009.pdf)
- U.S. Fish and Wildlife Service (USFWS). September 2017 (2017a). Recovery Plan for Giant Garter Snake (*Thamnophis gigas*). Pacific Southwest Region, Region 8, U.S. Fish and Wildlife Service, Sacramento, CA.
- U.S. Fish and Wildlife Service (USFWS). Revised 30 November 2017 (2017b). Species account for giant garter snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, Sacramento, CA.
- U.S. Fish and Wildlife Service (USFWS). May 2017 (2017c). Framework for assessing impacts to the Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). U.S. Fish and Wildlife Service, Sacramento, CA.
- U.S. Fish and Wildlife Service (USFWS). Accessed July 2020. Unofficial species list for the Pump Outfall Replacement Project. Information for Planning and Conservation (IPaC). Sacramento Fish and Wildlife Office, Sacramento, CA. <http://ecos.fws.gov/ipac/>

- U.S. Fish and Wildlife Service (USFWS). 2020. Regulations Governing Take of Migratory Birds. Proposed Rule. FR 85(22):5915-5926. 50 CFR Part 10.
- Water Forum. Accessed August 2020. River Temperature: American River at Watt Avenue. <https://www.waterforum.org/the-river/river-dashboard/?AWB=1&startorend=2&cstart=1&choosecustom=1&yearvalue=2017&nummonths=12%27>
- Wilson, C.R., R. J. Meese, A. C. Wyckoff. 2016. Breeding chronology, movements, and life history observations of tricolored blackbirds in the California Central Coast. 102 (4).
- Yolo Habitat Conservancy (YHC). 2018. Yolo Habitat Conservation Plan/Natural Community Conservation Plan. Yolo Habitat Conservancy, Woodland, CA.

#### Personal Communications

- Hansen, Eric. 12 August 2020. Email communication regarding GGS presence near Steelhead Creek.
- Kong, Ray (City of Sacramento Dept. of Utilities Engineer). 31 July 2020. Phone conversation providing information on fish access to Morrison Creek.

## PREPARERS

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**Jeffery Little, Vice President**, Sycamore Environmental. Principal, Project Manager, and Regulatory Compliance Specialist with over 27 years experience working with environmental review, permitting, biological, and cultural issues.

Responsibilities: Principal in charge

**Jessie Quinn Ph.D.**, Ecology, University of California, Davis, CA. Over 20 years of experience in ecological and wildlife research, including over 9 years of experience as an environmental consultant. She has managed and conducted wetland functional analyses, environmental risk assessments, and restoration design evaluations. Her research has focused on the ecology and management of mammals, birds, and grasslands.

Responsibilities: Project management, fieldwork, report review

**Michael Bower, M.S.**, Ecology, University of California, Davis, CA. Twelve years of experience as a biologist/ botanist with Sycamore Environmental. Mr. Bower serves as both field biologist and technical report writer. He conducts wetland delineations and surveys for special-status plants and wildlife. He prepares reports used in CEQA/NEPA that quantify resources, identify impacts, and recommend mitigation measures. He prepares restoration, weed management, and monitoring plans. He is a certified Ecologist and Professional Wetland Scientist (#2230).

Responsibilities: Fieldwork, plant identification, and report preparation

**Monica Coll, B.A.**, Environmental Science and Conservation Biology, Clark University, Worcester, MA. Two years experience as a biologist. Her background is in conservation biology and she has accumulated a range of knowledge including project management skills and wildlife survey experience. Ms. Coll serves as both field biologist and technical report writer. She conducts construction monitoring and wildlife surveys, writes biological resource evaluations, and assists with plant surveys and wetland delineations.

Responsibilities: Fieldwork, report preparation

**Kalia Schuster, M.S.**, Applied Marine and Watershed Science, California State University, Monterey Bay, CA. Three years experience as a biologist. Her background is in habitat conservation, and she has accumulated extensive experience in vegetation mapping, specifically in the Sacramento-San Joaquin Delta. Ms. Schuster serves as both field biologist and assisting technical report writer. She assists with construction monitoring, wildlife surveys, plant surveys, wetland delineations, and biological resource evaluations.

Responsibilities: Fieldwork and figure preparation

**Aramis Respall**, GIS Analyst/ CAD Operator. Over 20 years experience in drafting and spatial analysis using AutoCAD map and ArcGIS for public and private projects. He prepares figures for biological and permitting documents such as project location maps, aerial photograph exhibits, biological resource maps, wetlands/waters delineation maps, project impact maps, and other supporting graphics. Mr. Respall provides geospatial analysis and support for projects involving geodesy, hydrology, watershed studies, project impact and mitigation analyses, listed species, and designated critical habitat.

Responsibilities: Figure preparation, spatial analysis

# **APPENDIX A.**

## **Database Queries**

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# Selected Elements by Scientific Name

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Query Criteria:** Quad</span> IS </span>(Florin (3812144)</span> OR </span>Sacramento East (3812154)</span> OR </span>Rio Linda (3812164))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Accipiter cooperii</i></b> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<b><i>Agelaius tricolor</i></b> tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
<b><i>Ardea alba</i></b> great egret	ABNGA04040	None	None	G5	S4	
<b><i>Ardea herodias</i></b> great blue heron	ABNGA04010	None	None	G5	S4	
<b><i>Athene cunicularia</i></b> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<b><i>Branchinecta lynchi</i></b> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
<b><i>Branchinecta mesoavallensis</i></b> midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
<b><i>Buteo regalis</i></b> ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
<b><i>Buteo swainsoni</i></b> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<b><i>Coccyzus americanus occidentalis</i></b> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<b><i>Cuscuta obtusiflora</i> var. <i>glandulosa</i></b> Peruvian dodder	PDCUS01111	None	None	G5T4?	SH	2B.2
<b><i>Desmocerus californicus dimorphus</i></b> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
<b><i>Downingia pusilla</i></b> dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
<b><i>Elanus leucurus</i></b> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<b><i>Elderberry Savanna</i></b> Elderberry Savanna	CTT63440CA	None	None	G2	S2.1	
<b><i>Emys marmorata</i></b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<b><i>Falco columbarius</i></b> merlin	ABNKD06030	None	None	G5	S3S4	WL
<b><i>Fritillaria agrestis</i></b> stinkbells	PMLIL0V010	None	None	G3	S3	4.2
<b><i>Gratiola heterosepala</i></b> Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	G2	S2	1B.2



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i></b> woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
<b><i>Lasthenia chrysantha</i></b> alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
<b><i>Legenere limosa</i></b> legenere	PDCAM0C010	None	None	G2	S2	1B.1
<b><i>Lepidium latipes</i> var. <i>heckardii</i></b> Heckard's pepper-grass	PDBRA1M0K1	None	None	G4T1	S1	1B.2
<b><i>Lepidurus packardii</i></b> vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
<b><i>Linderiella occidentalis</i></b> California linderiella	ICBRA06010	None	None	G2G3	S2S3	
<b><i>Melospiza melodia</i></b> song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
<b><i>Northern Claypan Vernal Pool</i></b> Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
<b><i>Northern Hardpan Vernal Pool</i></b> Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
<b><i>Nycticorax nycticorax</i></b> black-crowned night heron	ABNGA11010	None	None	G5	S4	
<b><i>Oncorhynchus mykiss irideus</i> pop. 11</b> steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
<b><i>Phalacrocorax auritus</i></b> double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
<b><i>Pogonichthys macrolepidotus</i></b> Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
<b><i>Progne subis</i></b> purple martin	ABPAU01010	None	None	G5	S3	SSC
<b><i>Riparia riparia</i></b> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<b><i>Sagittaria sanfordii</i></b> Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
<b><i>Spirinchus thaleichthys</i></b> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
<b><i>Taxidea taxus</i></b> American badger	AMAJF04010	None	None	G5	S3	SSC
<b><i>Thamnophis gigas</i></b> giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
<b><i>Trifolium hydrophilum</i></b> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<b><i>Xanthocephalus xanthocephalus</i></b> yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC

Record Count: 40

\*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

## Plant List

13 matches found. *Click on scientific name for details*

### Search Criteria

Found in Quads 3812154 3812144 and 3812164;

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
<a href="#">Brodiaea rosea ssp. vallicola</a>	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	4.2	S3	G5T3
<a href="#">Centromadia parryi ssp. rudis</a>	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
<a href="#">Cuscuta obtusiflora var. glandulosa</a>	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	2B.2	SH	G5T4?
<a href="#">Downingia pusilla</a>	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
<a href="#">Fritillaria agrestis</a>	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
<a href="#">Gratiola heterosepala</a>	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	S2	G2
<a href="#">Hesperervax caulescens</a>	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	4.2	S3	G3
<a href="#">Hibiscus lasiocarpus var. occidentalis</a>	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
<a href="#">Juglans hindsii</a>	Northern California black walnut	Juglandaceae	perennial deciduous tree	Apr-May	1B.1	S1	G1
<a href="#">Legenere limosa</a>	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
<a href="#">Lepidium latipes var. heckardii</a>	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	1B.2	S1	G4T1
<a href="#">Sagittaria sanfordii</a>	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3

[Trifolium hydrophilum](#)

saline clover

Fabaceae

annual herb

Apr-Jun

1B.2

S2

G2

**Suggested Citation**

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# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Sacramento County, California



## Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [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.

The following species are potentially affected by activities in this location:

## Reptiles

NAME

STATUS

Giant Garter Snake *Thamnophis gigas*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4482>

## Amphibians

NAME

STATUS

California Red-legged Frog *Rana draytonii*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/2891>California Tiger Salamander *Ambystoma californiense*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/2076>

## Fishes

NAME

STATUS

Delta Smelt *Hypomesus transpacificus*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/321>

## Insects

NAME

STATUS

Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus*

Threatened

There is **final** critical habitat for this species. Your location overlaps the critical habitat.<https://ecos.fws.gov/ecp/species/7850>

## Crustaceans

NAME

STATUS

Vernal Pool Fairy Shrimp *Branchinecta lynchi*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/498>Vernal Pool Tadpole Shrimp *Lepidurus packardii*

Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/2246>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> <a href="https://ecos.fws.gov/ecp/species/7850#crithab">https://ecos.fws.gov/ecp/species/7850#crithab</a>	Final

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds  
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds  
<http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

#### Clark's Grebe *Aechmophorus clarkii*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Jan 1 to Dec 31

#### Common Yellowthroat *Geothlypis trichas sinuosa*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/2084>

Breeds May 20 to Jul 31

#### Lawrence's Goldfinch *Carduelis lawrencei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9464>

Breeds Mar 20 to Sep 20

#### Long-billed Curlew *Numenius americanus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/5511>

Breeds elsewhere

#### Nuttall's Woodpecker *Picoides nuttallii*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9410>

Breeds Apr 1 to Jul 20

#### Oak Titmouse *Baeolophus inornatus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9656>

Breeds Mar 15 to Jul 15

**Rufous Hummingbird** *selasphorus rufus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

**Song Sparrow** *Melospiza melodia*

Breeds Feb 20 to Sep 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**Spotted Towhee** *Pipilo maculatus clementae*

Breeds Apr 15 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/4243>

**Tricolored Blackbird** *Agelaius tricolor*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3910>

**Whimbrel** *Numenius phaeopus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

**Yellow-billed Magpie** *Pica nuttalli*

Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9726>

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that

- week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
- To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
  - The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

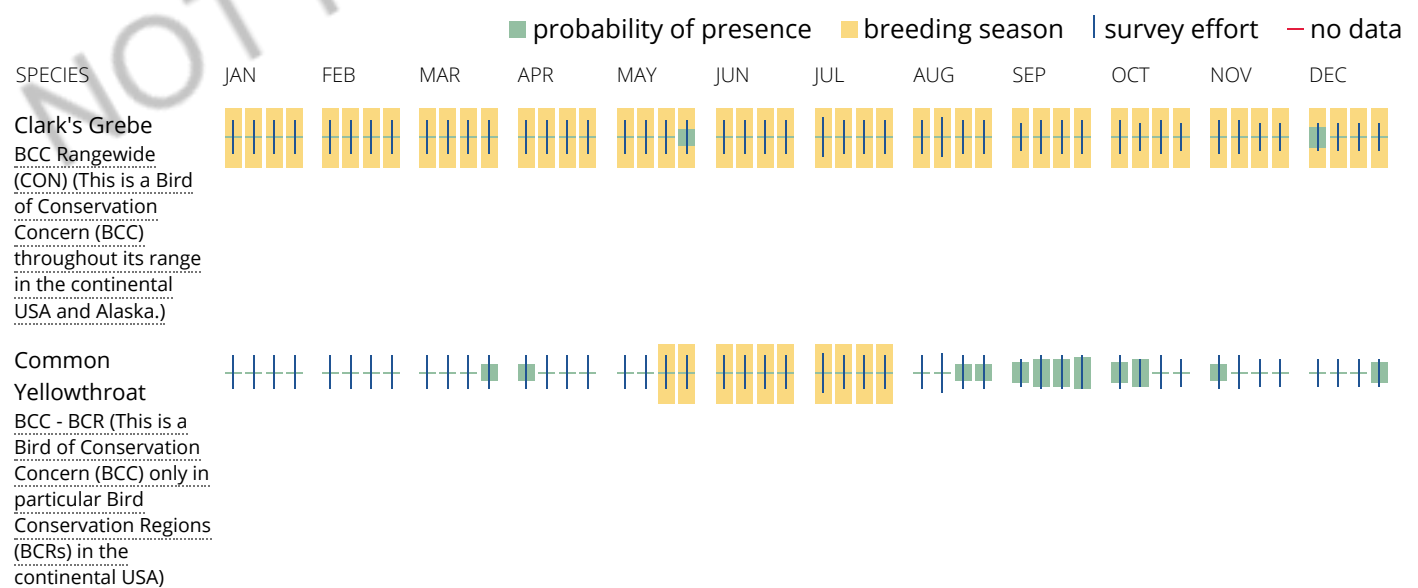
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (—)

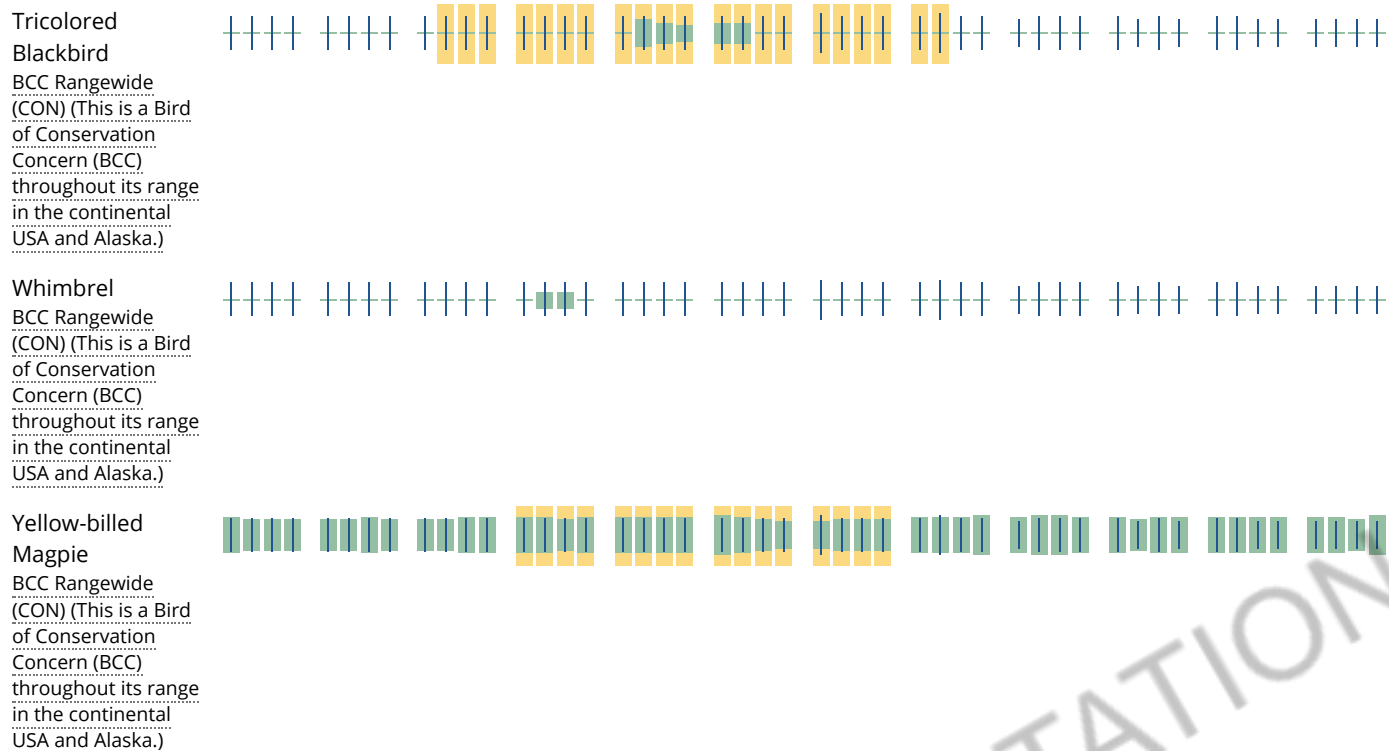
A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.







Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1C](#)

[PEM1Cx](#)

## FRESHWATER FORESTED/SHRUB WETLAND

[PFOC](#)[PSS/EM1A](#)[PFO/EM1C](#)[PSSC](#)

## LAKE

[L1UBHh](#)

## RIVERINE

[R4SBC](#)[R2UBH](#)[R5UBF](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

**Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

**Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

**Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Sacramento County, California



## Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

- 1. Draw the project location and click CONTINUE.
- 2. Click DEFINE PROJECT.
- 3. Log in (if directed to do so).
- 4. Provide a name and description for your project.
- 5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

- 1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
- 2. [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.

The following species are potentially affected by activities in this location:

## Reptiles

NAME	STATUS
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Giant Garter Snake *Thamnophis gigas*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4482>

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/2076">https://ecos.fws.gov/ecp/species/2076</a>	Threatened

## Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened

## Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/7850">https://ecos.fws.gov/ecp/species/7850</a>	Threatened

## Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/2246">https://ecos.fws.gov/ecp/species/2246</a>	Endangered

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A  
BREEDING SEASON IS INDICATED  
FOR A BIRD ON YOUR LIST, THE  
BIRD MAY BREED IN YOUR  
PROJECT AREA SOMETIME WITHIN  
THE TIMEFRAME SPECIFIED,  
WHICH IS A VERY LIBERAL  
ESTIMATE OF THE DATES INSIDE  
WHICH THE BIRD BREEDS  
ACROSS ITS ENTIRE RANGE.  
"BREEDS ELSEWHERE" INDICATES  
THAT THE BIRD DOES NOT LIKELY  
BREED IN YOUR PROJECT AREA.)

#### Clark's Grebe *Aechmophorus clarkii*

Breeds Jan 1 to Dec 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

#### Common Yellowthroat *Geothlypis trichas sinuosa*

Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/2084>

#### Lawrence's Goldfinch *Carduelis lawrencei*

Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9464>

#### Long-billed Curlew *Numenius americanus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/5511>

#### Nuttall's Woodpecker *Picoides nuttallii*

Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9410>

#### Oak Titmouse *Baeolophus inornatus*

Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9656>

#### Rufous Hummingbird *Selasphorus rufus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

**Song Sparrow** *Melospiza melodia*

Breeds Feb 20 to Sep 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**Spotted Towhee** *Pipilo maculatus clementae*

Breeds Apr 15 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/4243>

**Tricolored Blackbird** *Agelaius tricolor*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3910>

**Whimbrel** *Numenius phaeopus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

**Yellow-billed Magpie** *Pica nuttalli*

Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9726>

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted

Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

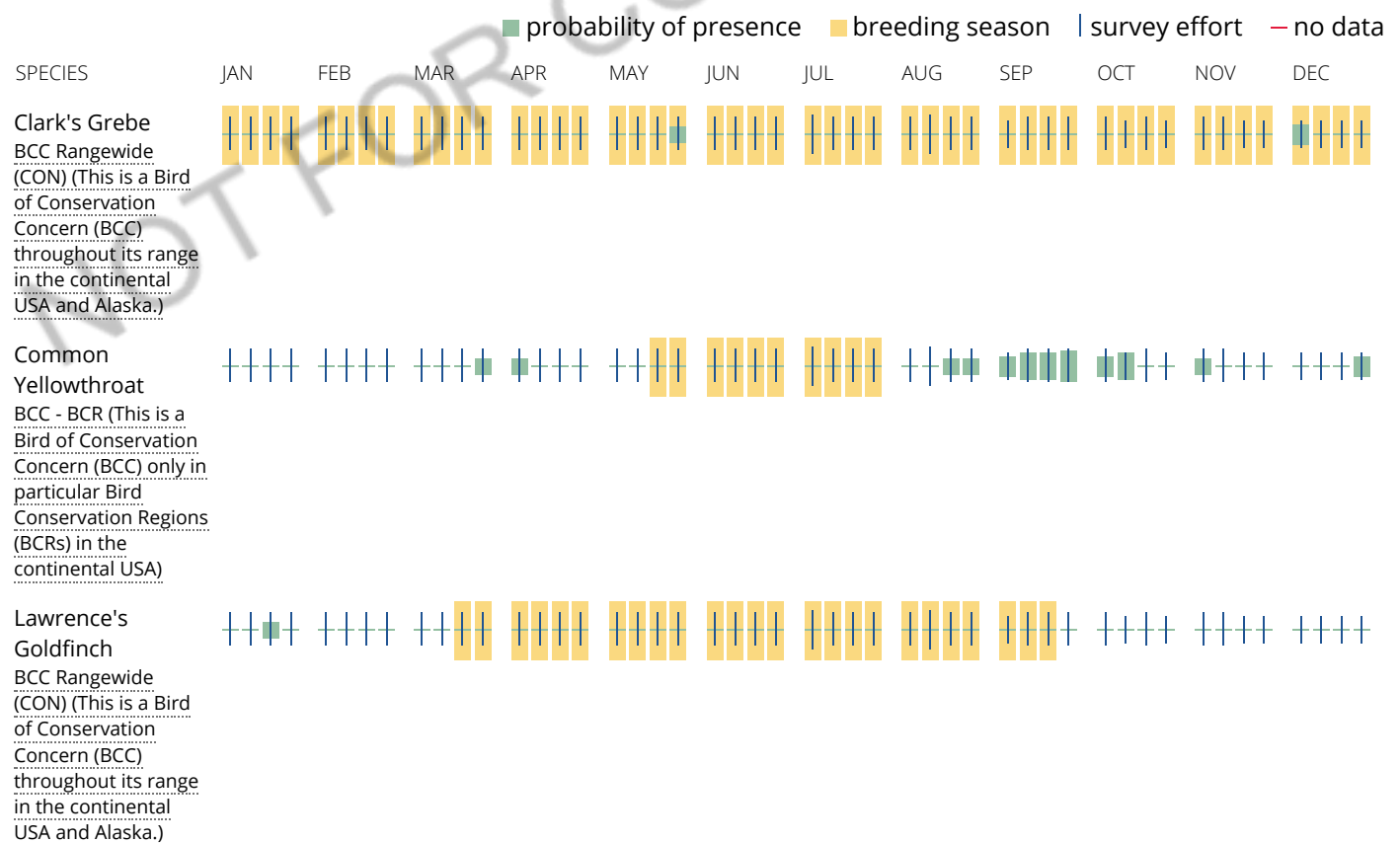
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (—)

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Whimbrel  
BCC Rangewide  
(CON) (This is a Bird  
of Conservation  
Concern (BCC)  
throughout its range  
in the continental  
USA and Alaska.)



Yellow-billed  
Magpie  
BCC Rangewide  
(CON) (This is a Bird  
of Conservation  
Concern (BCC)  
throughout its range  
in the continental  
USA and Alaska.)



**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to

confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

### Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

[R2UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

#### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error

is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### **Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Sacramento County, California



## Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [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.

The following species are potentially affected by activities in this location:

## Reptiles

NAME

STATUS

Giant Garter Snake *Thamnophis gigas*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4482>

## Amphibians

NAME

STATUS

California Red-legged Frog *Rana draytonii*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/2891>California Tiger Salamander *Ambystoma californiense*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/2076>

## Fishes

NAME

STATUS

Delta Smelt *Hypomesus transpacificus*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/321>

## Insects

NAME

STATUS

Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/7850>

## Crustaceans

NAME

STATUS

Vernal Pool Fairy Shrimp *Branchinecta lynchi*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/498>Vernal Pool Tadpole Shrimp *Lepidurus packardii*

Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/2246>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A  
BREEDING SEASON IS INDICATED  
FOR A BIRD ON YOUR LIST, THE  
BIRD MAY BREED IN YOUR  
PROJECT AREA SOMETIME WITHIN  
THE TIMEFRAME SPECIFIED,  
WHICH IS A VERY LIBERAL  
ESTIMATE OF THE DATES INSIDE  
WHICH THE BIRD BREEDS  
ACROSS ITS ENTIRE RANGE.  
"BREEDS ELSEWHERE" INDICATES  
THAT THE BIRD DOES NOT LIKELY  
BREED IN YOUR PROJECT AREA.)

#### Bald Eagle *Haliaeetus leucocephalus*

Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

#### Burrowing Owl *Athene cunicularia*

Breeds Mar 15 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9737>

#### California Thrasher *Toxostoma redivivum*

Breeds Jan 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

#### Clark's Grebe *Aechmophorus clarkii*

Breeds Jan 1 to Dec 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

#### Common Yellowthroat *Geothlypis trichas sinuosa*

Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/2084>

#### Golden Eagle *Aquila chrysaetos*

Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

<b>Lewis's Woodpecker</b> <i>Melanerpes lewis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9408">https://ecos.fws.gov/ecp/species/9408</a>	Breeds Apr 20 to Sep 30
<b>Long-billed Curlew</b> <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/5511">https://ecos.fws.gov/ecp/species/5511</a>	Breeds elsewhere
<b>Marbled Godwit</b> <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9481">https://ecos.fws.gov/ecp/species/9481</a>	Breeds elsewhere
<b>Nuttall's Woodpecker</b> <i>Picoides nuttallii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9410">https://ecos.fws.gov/ecp/species/9410</a>	Breeds Apr 1 to Jul 20
<b>Oak Titmouse</b> <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9656">https://ecos.fws.gov/ecp/species/9656</a>	Breeds Mar 15 to Jul 15
<b>Rufous Hummingbird</b> <i>selasphorus rufus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8002">https://ecos.fws.gov/ecp/species/8002</a>	Breeds elsewhere
<b>Short-billed Dowitcher</b> <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9480">https://ecos.fws.gov/ecp/species/9480</a>	Breeds elsewhere
<b>Song Sparrow</b> <i>Melospiza melodia</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 20 to Sep 5
<b>Spotted Towhee</b> <i>Pipilo maculatus clementae</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/4243">https://ecos.fws.gov/ecp/species/4243</a>	Breeds Apr 15 to Jul 20

**Tricolored Blackbird** *Agelaius tricolor*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3910>

**Whimbrel** *Numenius phaeopus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

**Willet** *Tringa semipalmata*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Wrentit** *Chamaea fasciata*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Yellow-billed Magpie** *Pica nuttalli*

Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9726>

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any

week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .

- The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

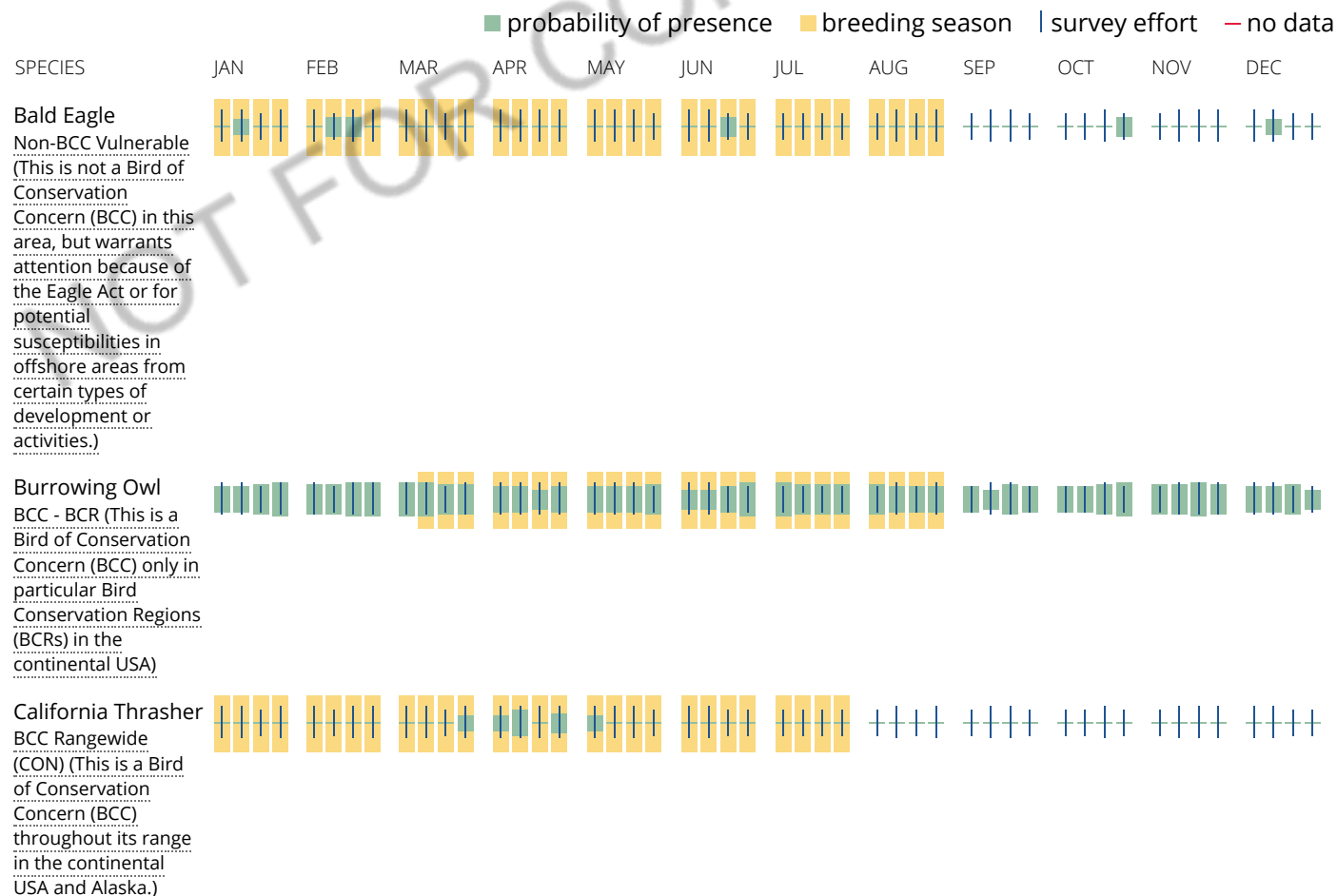
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

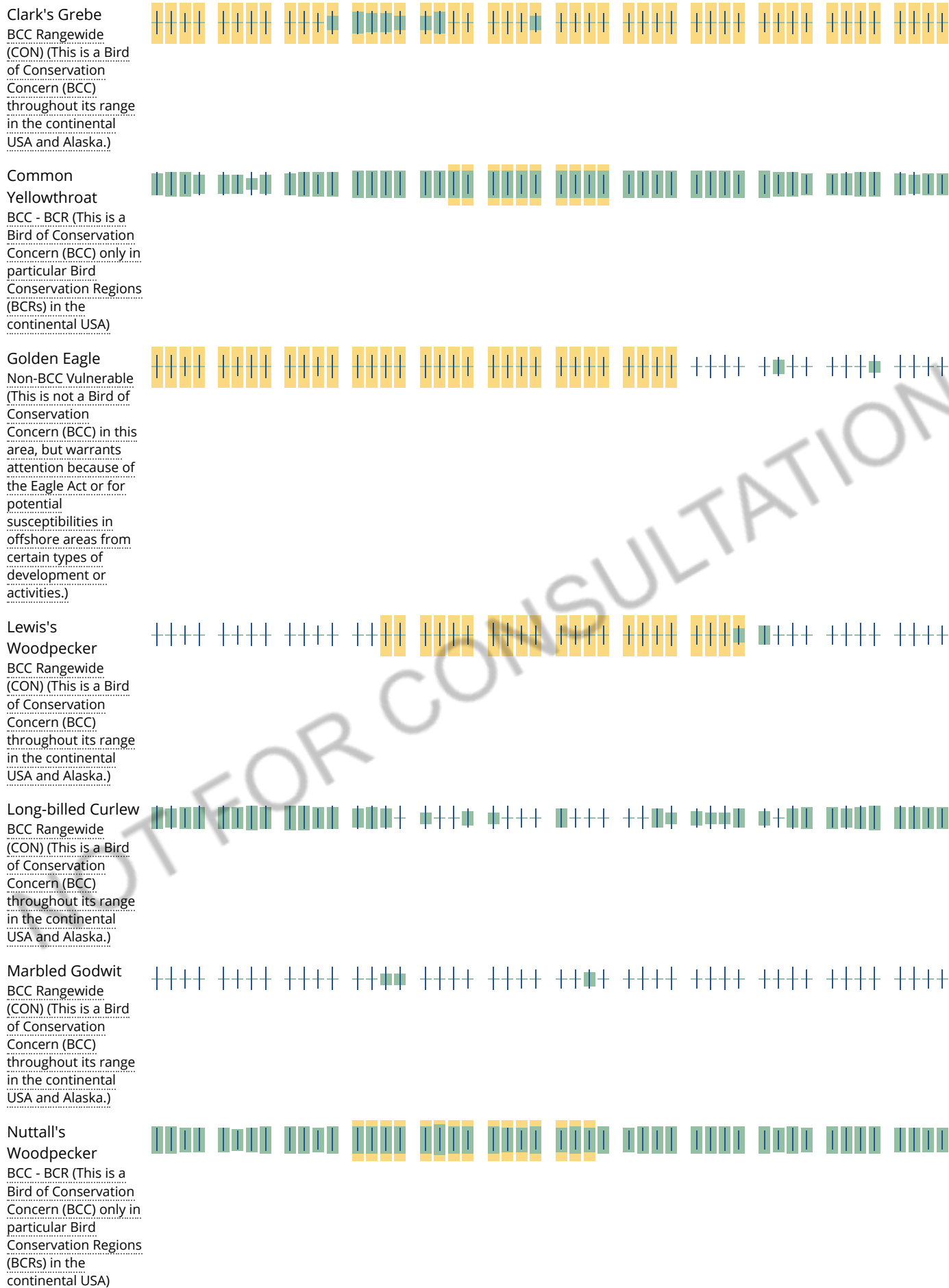
### No Data (—)

A week is marked as having no data if there were no survey events for that week.

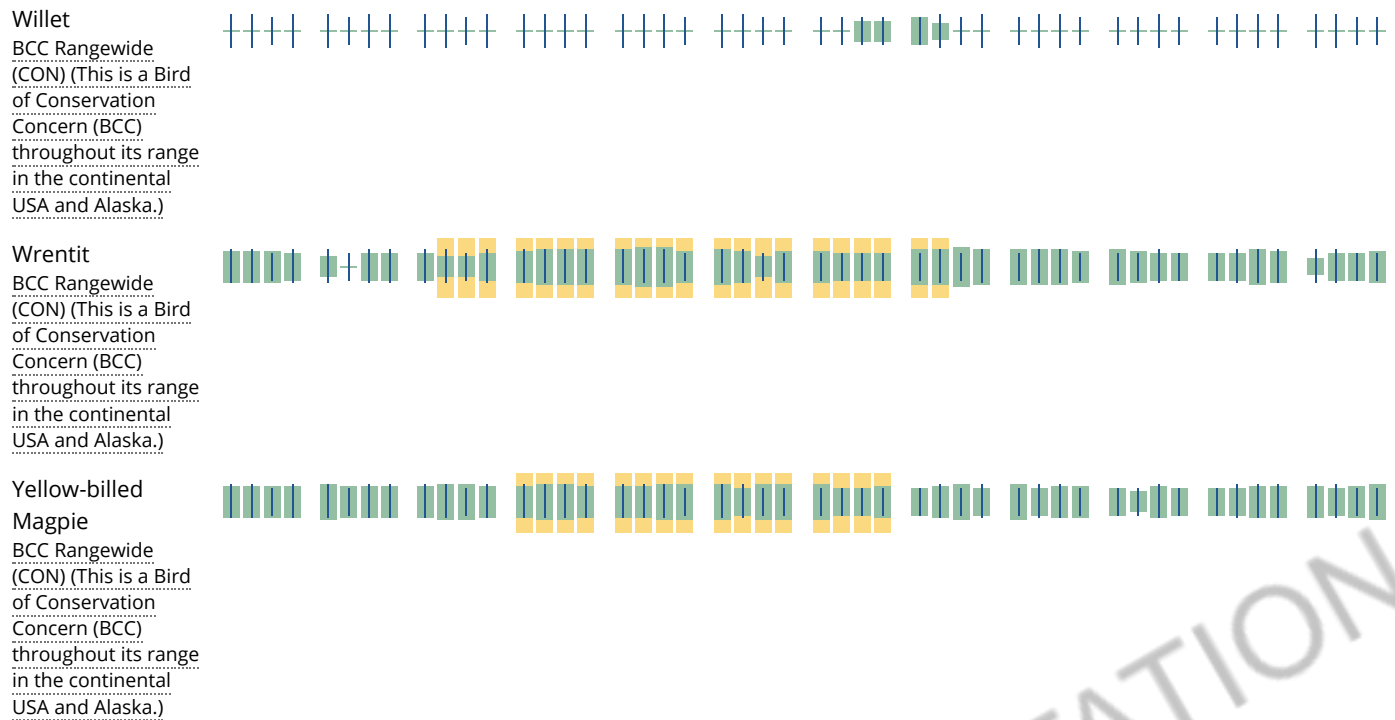
### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.









**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1Ch](#)

[PEM1A](#)

[PEM1C](#)

## FRESHWATER FORESTED/SHRUB WETLAND

[PSS1C](#)[PSS1A](#)

## FRESHWATER POND

[PUBFh](#)[PUBHh](#)

## RIVERINE

[R2UBH](#)[R2UBHx](#)[R2UBHh](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

**Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

**Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

**Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Quad Name **Florin**  
Quad Number **38121-D4**

### **ESA Anadromous Fish**

SONCC Coho ESU (T) -  
CCC Coho ESU (E) -  
CC Chinook Salmon ESU (T) -  
CVSR Chinook Salmon ESU (T) - **X**  
SRWR Chinook Salmon ESU (E) - **X**  
NC Steelhead DPS (T) -  
CCC Steelhead DPS (T) -  
SCCC Steelhead DPS (T) -  
SC Steelhead DPS (E) -  
CCV Steelhead DPS (T) - **X**  
Eulachon (T) -  
sDPS Green Sturgeon (T) -

### **ESA Anadromous Fish Critical Habitat**

SONCC Coho Critical Habitat -  
CCC Coho Critical Habitat -  
CC Chinook Salmon Critical Habitat -  
CVSR Chinook Salmon Critical Habitat -  
SRWR Chinook Salmon Critical Habitat -  
NC Steelhead Critical Habitat -  
CCC Steelhead Critical Habitat -  
SCCC Steelhead Critical Habitat -  
SC Steelhead Critical Habitat -  
CCV Steelhead Critical Habitat -  
Eulachon Critical Habitat -  
sDPS Green Sturgeon Critical Habitat -

### **ESA Marine Invertebrates**

Range Black Abalone (E) -  
Range White Abalone (E) -

### **ESA Marine Invertebrates Critical Habitat**

Black Abalone Critical Habitat -

### **ESA Sea Turtles**

East Pacific Green Sea Turtle (T) -  
Olive Ridley Sea Turtle (T/E) -  
Leatherback Sea Turtle (E) -  
North Pacific Loggerhead Sea Turtle (E) -

### **ESA Whales**

Blue Whale (E) -  
Fin Whale (E) -  
Humpback Whale (E) -  
Southern Resident Killer Whale (E) -  
North Pacific Right Whale (E) -  
Sei Whale (E) -  
Sperm Whale (E) -

### **ESA Pinnipeds**

Guadalupe Fur Seal (T) -  
Steller Sea Lion Critical Habitat -

### **Essential Fish Habitat**

Coho EFH -  
Chinook Salmon EFH - **X**  
Groundfish EFH -  
Coastal Pelagics EFH -  
Highly Migratory Species EFH -

### **MMPA Species (See list at left)**

### **ESA and MMPA Cetaceans/Pinnipeds**

**See list at left and consult the NMFS Long Beach office  
562-980-4000**

MMPA Cetaceans -  
MMPA Pinnipeds -



Quad Name **Rio Linda**

Quad Number **38121-F4**

### **ESA Anadromous Fish**

SONCC Coho ESU (T) -

CCC Coho ESU (E) -

CC Chinook Salmon ESU (T) -

CVSR Chinook Salmon ESU (T) - **X**

SRWR Chinook Salmon ESU (E) - **X**

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) -

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) - **X**

Eulachon (T) -

sDPS Green Sturgeon (T) -

### **ESA Anadromous Fish Critical Habitat**

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -

CC Chinook Salmon Critical Habitat -

CVSR Chinook Salmon Critical Habitat -

SRWR Chinook Salmon Critical Habitat -

NC Steelhead Critical Habitat -

CCC Steelhead Critical Habitat -

SCCC Steelhead Critical Habitat -

SC Steelhead Critical Habitat -

CCV Steelhead Critical Habitat - **X**

Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat -

### **ESA Marine Invertebrates**

Range Black Abalone (E) -

Range White Abalone (E) -

### **ESA Marine Invertebrates Critical Habitat**

Black Abalone Critical Habitat -

### **ESA Sea Turtles**

East Pacific Green Sea Turtle (T) -  
Olive Ridley Sea Turtle (T/E) -  
Leatherback Sea Turtle (E) -  
North Pacific Loggerhead Sea Turtle (E) -

### **ESA Whales**

Blue Whale (E) -  
Fin Whale (E) -  
Humpback Whale (E) -  
Southern Resident Killer Whale (E) -  
North Pacific Right Whale (E) -  
Sei Whale (E) -  
Sperm Whale (E) -

### **ESA Pinnipeds**

Guadalupe Fur Seal (T) -  
Steller Sea Lion Critical Habitat -

### **Essential Fish Habitat**

Coho EFH -  
Chinook Salmon EFH - **X**  
Groundfish EFH -  
Coastal Pelagics EFH -  
Highly Migratory Species EFH -

### **MMPA Species (See list at left)**

### **ESA and MMPA Cetaceans/Pinnipeds**

**See list at left and consult the NMFS Long Beach office  
562-980-4000**

MMPA Cetaceans -  
MMPA Pinnipeds -



Quad Name **Sacramento East**

Quad Number **38121-E4**

### **ESA Anadromous Fish**

SONCC Coho ESU (T) -

CCC Coho ESU (E) -

CC Chinook Salmon ESU (T) -

CVSR Chinook Salmon ESU (T) - **X**

SRWR Chinook Salmon ESU (E) - **X**

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) -

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) - **X**

Eulachon (T) -

sDPS Green Sturgeon (T) - **X**

### **ESA Anadromous Fish Critical Habitat**

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -

CC Chinook Salmon Critical Habitat -

CVSR Chinook Salmon Critical Habitat - **X**

SRWR Chinook Salmon Critical Habitat -

NC Steelhead Critical Habitat -

CCC Steelhead Critical Habitat -

SCCC Steelhead Critical Habitat -

SC Steelhead Critical Habitat -

CCV Steelhead Critical Habitat - **X**

Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat - **X**

### **ESA Marine Invertebrates**

Range Black Abalone (E) -

Range White Abalone (E) -

## **ESA Marine Invertebrates Critical Habitat**

Black Abalone Critical Habitat -

## **ESA Sea Turtles**

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -

Leatherback Sea Turtle (E) -

North Pacific Loggerhead Sea Turtle (E) -

## **ESA Whales**

Blue Whale (E) -

Fin Whale (E) -

Humpback Whale (E) -

Southern Resident Killer Whale (E) -

North Pacific Right Whale (E) -

Sei Whale (E) -

Sperm Whale (E) -

## **ESA Pinnipeds**

Guadalupe Fur Seal (T) -

Steller Sea Lion Critical Habitat -

## **Essential Fish Habitat**

Coho EFH -

Chinook Salmon EFH -

**X**

Groundfish EFH -

**X**

Coastal Pelagics EFH -

Highly Migratory Species EFH -

## **MMPA Species (See list at left)**

## **ESA and MMPA Cetaceans/Pinnipeds**

**See list at left and consult the NMFS Long Beach office  
562-980-4000**

MMPA Cetaceans -

MMPA Pinnipeds -

## **APPENDIX B.**

### **Species Evaluated Table**

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Species Evaluated Table.

Special-Status Species/ Common Name	Federal Status <sup>a</sup>	State Status <sup>ab</sup>	Source <sup>c</sup>	Habitat Requirements	Potential to Occur within the Study Area?
<b>Invertebrates</b>					
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	CH, T	--	1, 2	Occurs in vernal pools or vernal pool-like habitats. Does not occur in riverine contexts or in permanent waters. Found in 28 counties across the Central Valley and coast ranges of CA, and in southern OR. Most commonly found in small (< 0.05 ac), clear to tea-colored vernal pools with mud, grass, or basalt bottoms in unplowed grasslands (USFWS 2005).	No, there are no vernal pools within the BSA at any of the 8 sump sites.
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	CH, T	--	1, 2	Requires an elderberry shrub ( <i>Sambucus</i> sp.) as a host plant (USFWS 2014). Occurs throughout the Central Valley, from approximately Shasta Co. to Madera Co. Their range includes the valley floor and lower foothills below 500 ft in elevation (USFWS 2019). Females lay their eggs on the bark of elderberry, and larvae hatch and burrow into the stems and feed on the pith (USFWS 2006). The elderberry stems must be greater than 1.0 in. in diameter to support larvae (USFWS 1999b).	Yes. There is an elderberry shrub on the land side of the levee at Sump 155. See discussion.
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	CH, E	--	1, 2	Occurs in large, deep vernal pools, but can also make use of smaller pools within larger vernal pool complexes (USFWS 2005).	No, there are no vernal pools within the BSA at any of the 8 sump sites.
<b>Fish</b>					
<i>Archoplites interruptus</i> Sacramento perch	--	SC	2	A freshwater fish that occurs in beds of rooted, submerged, and emergent vegetation and submerged objects. Beds of aquatic plants are important for young-of-year, although perch can achieve high numbers in shallow, highly turbid reservoirs with no aquatic plants (Moyle 2002). Sacramento perch are endemic to the Central Valley, the Pajaro and Salinas rivers, tributaries to the San Francisco Estuary (e.g., Alameda Creek), and Clear Lake. Sacramento perch are generally found at low elevations (<330 ft.) except for Clear Lake. Thought extirpated from their native range. Sacramento perch exist in six California watersheds and are known to still be present in five Central Valley waters but all populations are small and unlikely to persist over the long term (Moyle 2011).	No. The BSA is outside the species range (Schwartz et al. 2008).

<i>Acipenser medirostris</i> Green sturgeon	CH, T	SC	1	An anadromous species that moves up large rivers to spawn (McGinnis 1984). Spawning in the mainstem Sacramento River has been documented at sites over 240 mi both downstream and upstream of Red Bluff Diversion Dam (Brown, 2007). Spawning most likely occurs in fast, deep water (> 10 ft. deep) over substrates ranging from clean sand to bedrock, with preferences for cobble substrates (Emmett et al., 1991; Moyle et al., 1995). Adult green sturgeon occur in the Sacramento River when temperatures are between 8 - 14°C (Moyle, 2002). Temperatures $\geq 73^{\circ}\text{F}$ are lethal to embryos (Van Eenennaam et al., 2005). Deep pools $\geq 16$ ft. with high turbulence and upwelling are critical for adult green sturgeon spawning and summer holding within the Sacramento River (Corwin and Poytress 2008). Some spawning may occur in the lower San Joaquin River as young green sturgeon have been taken near Brannan Island State Recreation Area (Moyle 2002).	No. Only Sump 155 is located on along a large river (American River). Green sturgeon is not known to occur in the American River (NMFS 2018).
<i>Hypomesus transpacificus</i> Delta smelt	CH, T	E	1	Euryhaline (tolerant of a wide salinity range) species that is confined to the San Francisco Estuary, principally in the Delta and Suisun Bay. Occurs in the Delta primarily below Isleton on the Sacramento River side and below Mossdale on the San Joaquin River side. Found seasonally throughout Suisun Bay and in small numbers in larger sloughs of Suisun marsh. Moves into sloughs and channels of the western Delta (e.g., Lindsey Slough) when spawning (mainly March-April). Can be washed into San Pablo Bay during high-outflow periods, but do not establish permanent populations there (Moyle 2002).	No. The BSA is outside the species range.
<i>Oncorhynchus mykiss</i> California Central Valley steelhead DPS	CH, T	--	1, 2	Anadromous salmonid that spawns in small tributaries on coarse gravel beds in riffle areas (Busby et al. 1996). Once thought extirpated from the San Joaquin Basin (Moyle 2002). Now potentially widespread throughout accessible streams and rivers in the Central Valley, including known populations or observations in Deer and Mill creeks in Tehama Co., the Yuba, Stanislaus, Mokelumne, Calaveras, Tuolumne, and Merced rivers, and other streams (NMFS 2009).	Yes. Suitable migration habitat occurs at Sumps 58, 102, 103, 154, 155 and 159 (NMFS 2014). See discussion.
<i>Oncorhynchus tshawytscha</i> Central Valley spring-run Chinook salmon ESU	CH, T	T	1, 2	Extant populations of this ESU spawn in the Sacramento River and its tributaries. Populations in the San Joaquin River are believed to be extirpated (NMFS 1998). Though historically found in Sacramento, San Joaquin, Klamath and Eel Rivers and their larger tributaries, today populations are only known to exist in the Sacramento and Klamath drainages (Moyle 2002). Adult female chinook will prepare a spawning bed in a stream with suitable gravel composition, water depth, and velocity (NMFS 2013). Enters the Sacramento River Basin from March through September and spawns from late August to October (Moyle 2002).	Yes. Suitable migration habitat occurs at Sump 155 (NMFS 2014). See discussion.

<i>Oncorhynchus tshawytscha</i> Sacramento River winter-run Chinook salmon ESU	CH, E	E	1, 2	Once found throughout the upper Sacramento River basin, the winter-run Chinook salmon ESU is now confined to the mainstem Sacramento River below Keswick Dam (Moyle 2002). Adults enter the Sacramento River from December through July and spawn from April to July. Spawning occurs in streams with suitable gravel composition, water depth, and velocity (McGinnis 1984). This ESU is believed to be extirpated from the San Joaquin River Basin. However, an intermittent run has been reported in the lower Calaveras River (NMFS 1998a).	No. The BSA is outside the species range (NMFS 2014).
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	--	SC	2	Endemic to sloughs, lakes and rivers of CA, mainly in the Central Valley. Historically, non-estuarine dependent populations existed in the Central Valley, but they have been extirpated. Adapted to estuarine waters with fluctuating conditions, and tolerant of high salinities. Swims upstream from the Delta into areas with flooded vegetation when ready to spawn. Spawning occurs in late February to early July, mainly in the Sutter and Yolo Bypasses along the Sacramento River. Fertilized eggs are attached to submerged vegetation and debris. During most years confined to the Delta, Suisun Bay, Suisun Marsh, lower Napa River, lower Petaluma River, and other parts of the San Francisco Estuary. Historically were found as far up the Sacramento River as Redding; up the Feather River as high as Oroville; in the American River to Folsom. Today they are found most frequently in the Sacramento River below the mouth of the Feather River (Moyle 2002).	No. This species is not known to occur in the BSA. The BSA does not contain suitable habitat for the species. The species is not expected to be present in the BSA during the summer construction window.
<i>Spirinchus thaleichthys</i> Longfin smelt, San Francisco Bay-Delta DPS	C	T	2	An anadromous fish that spawns from November to June in freshwater over sandy-gravel substrates, rocks, or aquatic plants. After hatching, larvae move up into surface waters and are transported downstream into brackish-water nursery areas. In the San Francisco estuary, longfin smelt are usually found downstream of Rio Vista on the Sacramento River and from the vicinity of Medford Island downstream on the San Joaquin River. They are occasionally found upstream of these locations (Moyle 2002). In all years, longfin smelt are likely spawning in the Delta, Suisun Marsh and Suisun Bay. In dry years, longfin smelt can spawn in the upper Sacramento River and have been observed as far up as Colusa State Park (USFWS 2016).	No. The BSA is outside the species range (CDFW 2018).

<b>Amphibians</b>					
<i>Ambystoma californiense</i> California tiger salamander, Central California DPS	CH, T	T	1	Occurs in grassland, oak savannah, and edges of mixed woodland and lower elevation coniferous forest. Spends much time underground in mammal burrows. The Central California DPS occurs in Alameda, Amador, Calaveras, Contra Costa, Fresno, Kern, Kings, Madera, Mariposa, Merced, Monterey, Sacramento, San Benito, San Mateo, San Joaquin, San Luis Obispo, Santa Clara, Santa Cruz, Stanislaus, Solano, Tulare, Tuolumne, and Yolo cos. (USFWS 2015a). Usually breeds in temporary ponds such as vernal pools but may also breed in slower parts of streams and some permanent waters (Stebbins 2003). Requires long-lasting vernal pools to complete larval development lasting 10+ weeks (Jennings and Hayes 1994).	No, there is no suitable habitat within the BSA at any of the 8 sump sites.
<i>Rana draytonii</i> California red-legged frog	CH, T	--	1	Inhabits ponds, quiet pools of streams, marshes, and riparian areas with dense, shrubby, or emergent vegetation. Requires permanent or nearly permanent pools for larval development (CWHR 2020; USFWS 2010). May use ephemeral water bodies for breeding if permanent water is nearby (Thomson et al. 2016). Occurs from near sea level to approximately 5,200 ft., though nearly all sightings have occurred below 3,500 ft. Probably extirpated from the floor of the Central Valley before 1960 (USFWS 2002).	No. The BSA is outside the species range.
<b>Reptiles</b>					
<i>Emys marmorata</i> Western pond turtle	--	SC	2	Highly aquatic species found in a broad range of aquatic habitats including rivers and streams, permanent lakes, ponds, reservoirs, settling ponds, marshes, and other inundated wetlands. May use brackish, semi-permanent, or ephemeral features when inundated. Requires basking sites and loose soil in surrounding uplands suitable for nest excavation. Eggs are typically laid in spring and early summer in nests located within 330 ft. of water. Eggs hatch in the fall, but hatchlings often remain in the nest through the first winter, emerging the following spring. Adults remain active year-round in warmer climates. In colder climates, adults overwinter in upland burrows safe from high winter flows. Occurs throughout non-desert CA from sea level to 6,700 ft. Isolated populations are known from the Mojave, Susan, Truckee, and Carson rivers, and the Klamath Basin (Thomson et al. 2016).	Yes. Suitable habitat occurs at all sump sites. See discussion.
<i>Thamnophis gigas</i> Giant garter snake	T	T	1, 2	Endemic to the wetlands of the Sacramento and San Joaquin valleys, inhabiting the tule marshes and seasonal wetlands created by overbank flooding of the rivers and streams. Requires 1) freshwater aquatic habitat with protective emergent vegetative cover that allows foraging; 2) upland habitat near the aquatic habitat that can be used for thermoregulation and summer shelter in burrows; and 3) upland refugia that serve as winter hibernacula (USFWS 2017).	Yes. Suitable habitat occurs at Sump 89. See discussion.

Birds					
<i>Agelaius tricolor</i> Tricolored blackbird	--	T, SC	2	Forages on ground in cropland, grassland, and on pond edges. Nests near freshwater, prefers emergent marsh of dense cattails or tules, but also nests in thickets of willow, blackberry, and wild rose. Highly colonial. Nesting area must be large enough to support a minimum colony of about 50 pairs (CWHR 2016). Nesting colonies are of concern to CDFW (2019c).	No. There is no suitable habitat within the BSA at any of the 8 sump sites.
<i>Athene cunicularia</i> Burrowing owl	--	SC	2	Yearlong resident of open, dry grassland and desert habitat, and in grass, forb, and open shrub stages of pinyon-juniper and Ponderosa pine habitats, from sea level to 5,300 ft. Uses small mammal burrows, often those of ground squirrels, for roosting and nesting cover. Nest boxes, pipes, and culverts may be used if burrows are scarce. Occurs throughout CA except the high mountains and northwestern coastal forests (CWHR 2020). Burrowing sites and some wintering sites are of concern to CDFW (2019c).	Yes. Suitable habitat occurs at Sump 89. See discussion.
<i>Buteo swainsoni</i> Swainson's hawk	--	T	2	An uncommon breeding resident and migrant in CA in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen Co., and Mojave Desert. Nests in open riparian habitat, in scattered trees or in small groves in sparsely vegetated flatlands. Forages in adjacent grasslands, grain or alfalfa fields, or livestock pastures. Feeds on rodents, mammals, reptiles, large arthropods, amphibians, small birds, and, rarely, fish (CWHR 2020). Nesting sites are of concern to CDFW (2019c).	Yes. Suitable habitat occurs at all sumps. See discussion.
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	CH, T	E	2	Uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in CA. Breeding populations known from the Colorado River, Sacramento and Owens valleys, along the South Fork of the Kern River (Kern Co.), along the Santa Ana River (Riverside Co.), and along the Amargosa River (Inyo & San Bernardino cos). Nests in dense cover of deciduous trees and shrubs, especially willows, which usually abut a slow-moving watercourse, backwater or seep. Also utilizes adjacent orchards, especially walnuts, in the Central Valley. Nests typically in sites with at least some willow, dense low-level or understory foliage, high humidity, and wooded foraging spaces with an area of at least 25 ac. and width of at least 300 ft. (CWHR 2020). Nesting sites are of concern to CDFW (2019c).	No. Forests adjacent to the BSA are patchy and do not provide adequate understory for nesting. There is no suitable habitat within the BSA at any of the 8 sump sites.
<i>Elanus leucurus</i> White-tailed kite	--	FP	2	Occurs in coastal and valley lowlands in agricultural areas, and in herbaceous and open stages of most habitats. Nests in groves of dense, broad-leaved deciduous trees (CWHR 2020). Nesting sites are of concern to CDFW (2019c).	Yes. Suitable habitat occurs at all sumps. See discussion.

<i>Laterallus jamaicensis coturniculus</i> California black rail	--	T, FP	2	Inhabits saline, brackish, and freshwater emergent wetlands in the Bay Area, Sacramento-San Joaquin Delta, the Salton Sea, the lower Colorado River, a few locations in coastal southern CA, and the northern Sierra foothills of Butte, Nevada, Placer, and Yuba cos. Typically found in the immediate vicinity of tidal sloughs near the upper limit of tidal flooding in tidal emergent wetlands dominated by pickleweed and in brackish marshes supporting bulrushes in association with pickleweed. In freshwater areas, generally found in marshes dominated by bulrush, cattail, or saltgrass (CWHR 2020). Water regime is a critical habitat factor; black rails are often found in wetlands with perennial standing or flowing water. Black rails use wetland zones with shallower water than other North American rails, generally less than 1.2 in. Wetlands in the Sacramento Valley managed for waterfowl or rice typically lack sufficient shallow water habitat (Richmond et al. 2010).	No. The BSA is outside the species range.
<i>Melospiza melodia</i> Song sparrow, "Modesto Population"	--	SC	2	A year-round resident that prefers emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets. Modesto song sparrows also nest in riparian forests of valley oak with sufficient understory of blackberry, along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites. Endemic to CA, with established populations in the Sacramento Valley, Sacramento-San Joaquin River Delta, and northern San Joaquin Valley. The Modesto song sparrow thrives where extensive wetlands remain. Most abundant in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta. Immediately adjacent to the Butte Sink, song sparrows breed in sparsely vegetated irrigation canals, although they are almost entirely absent from the main stem and tributaries of the Sacramento River above Sacramento (Shuford and Gardali 2008).	Yes. Suitable habitat occurs at sumps 58, 102, 103, 151, and 159. See discussion.
<i>Progne subis</i> Purple martin	--	SC	2	Widely distributed throughout nearly the entire eastern U.S. In the western U.S., occurs in the Rocky Mountains, Sonoran Desert, Central Mexico, and Pacific Coast states (Shuford and Gardali 2008). Breeding occurs from April into August. Generally inhabits open areas with an open water source nearby. Purple martins nest colonially or singly in cavities both natural and human-made. Purple martins occasionally use nest boxes (CWHR 2020). All current known nesting sites in Sacramento are in vertical weep holes beneath bridges built of steel and concrete box girders over urban areas and railroad tracks (Airola and Grantham 2003). Nesting sites are of concern to CDFW (2019c).	No. There is no suitable nesting habitat in or within 500 ft. of the BSA.

<i>Riparia riparia</i> Bank swallow	--	T	2	Restricted to riparian areas with vertical cliffs and banks with fine-textured or sandy soil. Nest holes are excavated into banks, usually in colonies. The majority of the breeding population in CA nests along Central Valley streams and the Sacramento River where meanders and vegetation are relatively undisturbed (CWHR 2020). Nesting sites are of concern to CDFW (2019c).	No. There is no suitable nesting habitat in or within 500 ft. of the BSA.
<i>Vireo bellii pusillus</i> Least Bell's vireo	E	E	2	Inhabits willow thickets and other dense riparian habitat below $\pm$ 2,000 ft. Known from canyons in San Benito and Monterey cos., coastal areas from Santa Barbara Co. south, and western edges of southern CA deserts. Usually found near water, including intermittent streams (CWHR 2020). Nesting sites are of concern to CDFW (2019c).	No. The species is not known to occur in the City of Sacramento. The BSAs are generally cleared of extensive dense riparian habitat during levee maintenance.
<i>Xanthocephalus xanthocephalus</i> Yellow-headed blackbird	--	SC	2	Breeds east of Cascade Range and Sierra Nevada, in the Central Valley, and in the Imperial and Colorado River valleys in southern CA. Nests, roosts, and forages primarily in fresh emergent wetland. Also feeds along shorelines and in open fields. Nests in densely vegetated fresh emergent wetland, often along borders of lakes or ponds. Uncommon winter resident in the Central Valley as much of the breeding population migrates south to winter. Breeds mid-April to late July. Usually nests in large colonies with nests somewhat closely scattered (CWHR 2020).	No. Vegetation in the BSA is largely riparian rather than emergent wetland. There is no suitable nesting habitat in or within 500 ft. of the BSA.
<b>Mammals</b>					
<i>Taxidea taxus</i> American badger	--	SC	2	Found throughout most of CA except the northern North Coast. Abundant in drier open stages of many shrub, forest, and herbaceous habitats with friable soils. Feeds on fossorial rodents, some reptiles, insects, earthworms, bird eggs, and carrion. Friable soils are required to dig burrows for refugia and rearing young (CWHR 2020).	No. The BSA is fairly isolated from more suitable habitat on all sides by urban/suburban development, the Sacramento River, and Interstate-5.
<b>Plants</b> / CNPS <sup>d</sup>					
<i>Astragalus tener</i> var. <i>ferrisiae</i> Ferris' milk-vetch	--	--/1B.1	2	Annual herb found in vernal mesic meadows, seeps and valley and foothill grasslands from 6 to 250 ft. Known from Butte, Colusa, Glenn, Sutter, and Yolo cos. Presumed extirpated from Solano Co. (CNPS 2020). Blooms from March through June (Jepson eFlora 2020); April through May (CNPS 2020).	No. The BSA is heavily disturbed and contains no suitable habitat for this species.
<i>Carex comosa</i> Bristly sedge	--	--/2B.1	2	Perennial rhizomatous herb found in coastal prairie, marshes and swamps, and valley and foothill grassland from 0 to 2,050 ft. Known from Contra Costa, Lake, Mendocino, Sacramento, San Bernardino, Santa Cruz, San Francisco, Shasta, San Joaquin and Sonoma cos. Presumed extirpated from San Bernardino and San Francisco cos. Blooms from May through September (CNPS 2020); July through September (Jepson eFlora 2020).	Yes. Suitable habitat occurs at all sumps. See discussion.

<i>Centromadia parryi</i> ssp. <i>parryi</i> Pappose tarplant	--	--/1B.2	2	Annual herb often found in alkaline conditions of chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, and vernal mesic valley and foothill grasslands from 7 to 1,400 ft. Known from Butte, Colusa, Glenn, Lake, Napa, San Mateo, Solano, Sonoma and Yolo cos. Blooms from May through November (CNPS 2020); June through October (Jepson eFlora 2020).	No. The BSA is heavily disturbed and contains no suitable habitat for this species.
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i> Peruvian dodder	--	--/2B.2	2	Annual parasitic vine found in freshwater marshes and swamps from 50 to 920 ft. Once known or possibly known from Butte, Los Angeles, Merced, Sacramento, San Bernardino, Sonoma and Sutter cos. (CNPS 2020). Presumed extirpated in CA (Jepson eFlora 2020). Blooms July through October (CNPS 2020; Jepson eFlora 2020).	No. The species is presumed extirpated. No dodder ( <i>Cuscuta</i> spp.) plants were observed during the botanical survey in July 2020.
<i>Downingia pusilla</i> Dwarf downingia	--	--/2B.2	2	Annual herb found in mesic valley and foothill grasslands and vernal pools from 3-1450 ft. Known from Amador, Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yuba cos. Blooms from March through May (CNPS 2020; Jepson eFlora 2020).	No. The BSA is heavily disturbed and contains no suitable habitat for this species.
<i>Fritillaria agrestis</i> Stinkbells	--	--/4.2	2	Perennial bulbiferous herb found in sometimes serpentinite, clay, chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland from 10-5,100 ft. Known from Alameda, Contra Costa, Fresno, Kern, Mendocino, Merced, Monterey, Mariposa, Placer, Sacramento, Santa Barbara, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, Stanislaus, Tuolumne, Ventura, and Yuba cos. Presumed extirpated from Santa Cruz and San Mateo cos. Blooms from March through June (CNPS 2020; Jepson eFlora 2020).	No. The BSA is heavily disturbed and contains no suitable habitat for this species.
<i>Gratiola heterosepala</i> Boggs Lake hedge-hyssop	--	E/1B.2	2	Annual herb found in clay, lake margin marshes and swamps, and vernal pools from 30 to 7,790 ft. Known from Fresno, Lake, Lassen, Madera, Mendocino, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, Sonoma, and Tehama cos. Blooms from April through August (CNPS 2020); April through September (Jepson eFlora).	No. The BSA is heavily disturbed and contains no suitable soils or habitat for this species.
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> Woolly rose-mallow	--	--/1B.2	2	Perennial rhizomatous herb found in freshwater marshes and swamps from 0 to 394 ft. Often found on river banks, low peat islands in sloughs, or in riprap on sides of levees. Known from Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo cos. (CNPS 2020). Blooms from June through September (CNPS 2020); July through November (Jepson eFlora 2020).	Yes. Suitable habitat occurs at all sumps. See discussion.

<i>Juglans hindsii</i> Northern California black walnut	--	--/1B.1	2	Deciduous tree found in riparian forests and riparian woodlands from 0 to 1,444 ft. Known from Contra Costa and Napa cos, and possibly from Lake Co. Presumed extirpated in Sacramento, Solano, and Yolo cos. This species blooms in the spring, but is identifiable for most of the year based on leaves and fruits. There is only one confirmed, native occurrence that CNPS considered viable as of 2003. Trees of this species have hybridized extensively with other <i>Juglans</i> sp., and have naturalized widely in areas of cismontane CA that are not part of its historic range. The 1B.1 status applies to non-hybrid trees that recruited naturally long ago.	No. There are no relict native stands of Northern California black walnut in the BSA.
<i>Legenere limosa</i> Legenere	--	--/1B.1	2	Annual herb found in vernal pools from 3 to 2,880 ft. Known from Alameda, Lake, Monterey, Napa, Placer, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo, Solano, Sonoma, Stanislaus, Tehama, and Yuba cos. Presumed extirpated from Stanislaus Co. Blooms from April through June (CNPS 2020); May through June (Jepson eFlora 2020).	No. The BSA is heavily disturbed and contains no suitable habitat for this species.
<i>Lepidium latipes</i> var. <i>heckardii</i> Heckard's pepper-grass	--	--/1B.2	2	Annual herb found in valley and foothill grassland (alkaline flats) from 6 to 650 feet. Known from Glenn, Merced, Sacramento, Solano, and Yolo cos. (CNPS 2020). Blooms from March through May (CNPS 2020); March through June (Jepson eFlora 2020).	No. The BSA is heavily disturbed and contains no suitable habitat for this species.
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	--	R/1B.1	2	Perennial rhizomatous herb found in brackish or freshwater marshes and swamps, and riparian scrub from 0 to 30 ft. Occurs in tidal habitats. Known from Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, Solano, and Yolo cos. Blooms from April through November (CNPS 2020); June through August (Jepson eFlora 2020).	No. The BSA is heavily disturbed and contains no tidal habitat.
<i>Sagittaria sanfordii</i> Sanford's arrowhead	--	--/1B.2	2	Perennial rhizomatous herb found in shallow freshwater marshes and swamps from 0 to 2130 ft. Known from Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Marin, Napa, Orange, Placer, Sacramento, San Bernardino, Shasta, San Joaquin, Solano, Tehama, Tulare, Ventura, and Yuba cos. Presumed extirpated from Orange and Ventura cos. Blooms from May through October (Jepson eFlora); May through November (CNPS 2020).	Yes. Suitable habitat occurs at all sumps. See discussion.
<i>Symphyotrichum lentum</i> (= <i>Aster lentus</i> ) Suisun Marsh aster	--	--/1B.2	2	Perennial rhizomatous herb found in brackish and freshwater marshes and swamps from 0 to 10 ft. Known from Contra Costa, Napa, Sacramento, San Joaquin, Solano, and Yolo cos. (CNPS 2020). Blooms April through November (CNPS 2020); May through November (Jepson eFlora 2020).	No. This species is generally restricted to tidal rivers and marshes. The BSA is outside the geographic and elevation range.
<i>Trifolium hydrophilum</i> Saline clover	--	--/1B.2	2	Annual herb found in marshes and swamps, mesic and alkaline soils of valley and foothill grassland, and vernal pools from 0 to 984 ft. Known from Alameda, Contra Costa, Lake, Monterey, Napa, Sacramento, San Benito, Santa Clara, Santa Cruz, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, and Yolo cos., and potentially from Colusa Co. (CNPS 2020). Blooms April through June (Jepson eFlora 2020; CNPS 2020).	No. The BSA is heavily disturbed and contains no suitable habitat for this species.

Natural Communities					
Elderberry Savanna	--	--/ --	2	Open shrub savannah dominated by <i>Sambucus mexicana</i> , usually with an understory of nonnative annual herbs. Requires grazing, fire, or flooding to prevent succession to Great Valley Mixed Riparian Forest. Occurs in areas of fine-textured alluvium that are set back from active river channels, but still subject to flooding and silt deposition. Additional characteristic species include: <i>Bromus</i> spp., <i>Centaurea solstitialis</i> , and <i>Marrubium vulgare</i> . Scattered among surviving stands of riparian vegetation throughout the Sacramento and northern San Joaquin valleys beyond Merced County (Holland 1986).	This community does not occur in the BSA. (One elderberry shrub occurs at Sump 155. See VELB discussion).
Great Valley Cottonwood Riparian Forest	--	--/ --	2	Deciduous riparian forest dominated by <i>Populus fremontii</i> and <i>Salix gooddingii</i> with dense understory. Lianas are common including <i>Vitis californica</i> . Frequent flooding prevents other trees, such as <i>Acer negundo californica</i> and <i>Fraxinus latifolia</i> , from reaching canopy height. Occurs in areas of fine-textured alluvium nears streams with subsurface flow even when the channel is dry. Additional characteristic species include: <i>Cephalanthus occidentalis</i> , <i>Elymus triticoides</i> , and <i>Salix</i> spp. (Holland 1986).	This community may occur at Sump 58 and other sump sites. See discussion of the riparian forest community.
Northern Claypan Vernal Pool	--	--/--	2	A low, herbaceous, wetland emergent community dominated by annual herbs and grasses. Pools may be small or quite large. On fairly old, circum-neutral to alkaline, silica-cemented hardpan soils. Often saline. Intergrades with cismontane swale and, cismontane alkali marsh, which has water present throughout the year. Loses water primarily by evaporation. Typical species include <i>Epilobium campestre</i> , <i>Cressa truxillensis</i> , <i>Downingia</i> spp., <i>Eryngium aristulatum</i> , <i>Lasthenia</i> spp., <i>Plagiobothrys</i> spp., and <i>Spergularia marina</i> (Holland 1986).	This community does not occur in the BSA.
Northern Hardpan Vernal Pool	--	--/--	2	A low emergent wetland community dominated by annual herbs and grasses on very acidic soils with an iron-silicon cemented hardpan. Evaporation (not runoff) dries pools in spring creating concentric bands of vegetation. Occurs primarily on old alluvial terraces on the east side of the Great Valley from Tulare or Fresno County north to Shasta County (Holland 1986).	This community does not occur in the BSA.

<sup>a</sup> **Listing Status** Codes used in table are:

**E** = Endangered; **T** = Threatened; **P** = Proposed; **C** = Candidate; **R** = California Rare

<sup>b</sup> **Other Codes** Codes used in table are as follows:

**SC** = CDFW Species of Special Concern; **FP** = CDFW Fully Protected; **Prot** = CDFW Protected; **CH** = Critical habitat designated.

**CNPS California Rare Plant Rank** (plants only): **1A** = Presumed Extinct in CA; **1B** = Rare or Endangered (R/E) in CA and elsewhere; **2** = R/E in CA and more common elsewhere; **3** = Need more information; **4** = Plants of limited distribution

**CNPS Rank Decimal Extensions**: **.1** = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat); **.2** = Fairly endangered in CA (20-80% of occurrences threatened); **.3** = Not very endangered in CA (< 20% of occurrences threatened or no current threats known).

<sup>c</sup> **Sources** **1** = From USFWS (2020) or NMFS (2020). **2** = From CNDDDB (CDFW 2020) and/or CNPS (2020). **3** = Observed or included by Sycamore Environmental biologists.

# **APPENDIX C.**

## **Species Observed**

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**Plant Species Observed.**

Family	Scientific Name <sup>1</sup>	Common Name	N/I <sup>2</sup>	Cal-IPC <sup>3</sup>	Observed at Sump Number(s)
<b>EUDICOTS</b>					
<b>Adoxaceae</b>	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	Blue elderberry	N		155
<b>Altingiaceae</b>	<i>Liquidambar styraciflua</i>	Liquidambar, sweet gum	I		103
<b>Amaranthaceae</b>	<i>Amaranthus albus</i>	Tumbleweed	I		89
<b>Anacardiaceae</b>	<i>Toxicodendron diversilobum</i>	Western poison oak	N		58, 151
<b>Apiaceae</b>	<i>Conium maculatum</i>	Poison hemlock	I	Moderate	58, 159
	<i>Foeniculum vulgare</i>	Fennel	I	High	155
<b>Apocynaceae</b>	<i>Asclepias fascicularis</i>	Narrow-leaf milkweed	N		154
<b>Asteraceae</b>	<i>Anthemis cotula</i>	Mayweed	I		102, 154, 159
	<i>Artemisia douglasiana</i>	Mugwort	N		155, 159
	<i>Bidens</i> sp.	Bidens	--		102, 154, 159
	<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian thistle	I	Moderate	58, 155
	<i>Centaurea solstitialis</i>	Yellow star-thistle	I	High	103, 151, 154, 155
	<i>Chondrilla juncea</i>	Skeleton weed	I	Moderate	151
	<i>Cichorium intybus</i>	Chicory	I		102, 103, 154, 159
	<i>Cirsium vulgare</i>	Bull thistle	I	Moderate	58, 151
	<i>Dittrichia graveolens</i>	Stinkwort	I	Moderate	102
	<i>Erigeron bonariensis</i>	Flax-leaved horseweed	I		103, 151, 155
	<i>Erigeron canadensis</i>	Horseweed	N		103, 154, 155
	<i>Euthamia occidentalis</i>	Western goldenrod	N		155
	<i>Helminthotheca echioides</i>	Bristly ox-tongue	I	Limited	58, 89
	<i>Heterotheca grandiflora</i>	Telegraph weed	N		155
	<i>Hypochaeris glabra</i>	Smooth cat's-ear	I	Limited	155
	<i>Lactuca serriola</i>	Prickly lettuce	I		58, 102, 103, 151, 154, 155, 159
	<i>Pseudognaphalium</i> sp.	Cudweed, everlasting	--		155
	<i>Silybum marianum</i>	Milk thistle	I	Limited	89, 102
	<i>Sonchus oleraceus</i>	Common sow thistle	I		58, 103, 159
	<i>Xanthium strumarium</i>	Cocklebur	N		89, 154, 159
<b>Betulaceae</b>	<i>Alnus rhombifolia</i>	White alder	N		103, 155
<b>Bignoniaceae</b>	<i>Catalpa bignonioides</i>	Southern catalpa	I		103
<b>Boraginaceae</b>	<i>Amsinckia menziesii</i>	Common fiddleneck, small-flowered	N		159
<b>Brassicaceae</b>	<i>Brassica nigra</i>	Black mustard	I	Moderate	89
	<i>Hirschfeldia incana</i>	Summer mustard	I	Moderate	102, 103, 151, 154, 155, 159
	<i>Lepidium latifolium</i>	Perennial pepperweed	I	High	89, 159

Family	Scientific Name <sup>1</sup>	Common Name	N/T <sup>2</sup>	Cal-IPC <sup>3</sup>	Observed at Sump Number(s)
	<i>Raphanus sativus</i>	Radish	I	Limited	58, 89, 103, 154
<b>Cannabaceae</b>	<i>Celtis chinensis</i>	Chinese hackberry	I		155
<b>Chenopodiaceae</b>	<i>Atriplex prostrata</i>	Fat hen	I		89, 154
	<i>Chenopodium</i> sp.	Pigweed, goosefoot	--		154
	<i>Chenopodium album</i>	Lamb's quarters	I		102
	<i>Salsola tragus</i>	Russian thistle, tumbleweed	I	Limited	89, 103
<b>Convolvulaceae</b>	<i>Convolvulus arvensis</i>	Orchard morning-glory	I		102, 103, 154
<b>Euphorbiaceae</b>	<i>Chamaesyce maculata</i>	Spotted spurge	I		89, 103
	<i>Triadica sebifera</i>	Chinese tallowtree	I	Moderate	155
<b>Fabaceae</b>	<i>Acmispon americanus</i> var. <i>americanus</i>	Deervetch, deerweed	N		89, 151, 154, 155
	<i>Albizia julibrissin</i>	Silk tree, mimosa	I		155
	<i>Sesbania punicea</i>	Scarlet sesban	I	High	102, 151, 154, 155, 159
	<i>Trifolium hirtum</i>	Rose clover	I	Limited	58
	<i>Vicia villosa</i>	Hairy vetch, winter vetch	I		151
<b>Fagaceae</b>	<i>Quercus</i> sp.	Oak	--		151
	<i>Quercus lobata</i>	Valley oak	N		58, 103, 151
	<i>Quercus wislizeni</i>	Interior live oak	N		58, 155
<b>Geraniaceae</b>	<i>Erodium moschatum</i>	Greenstem filaree	I		89
<b>Juglandaceae</b>	<i>Juglans hindsii</i>	Northern California black walnut	N		58, 89, 102, 103, 151, 155, 159
<b>Lamiaceae</b>	<i>Mentha pulegium</i>	Pennyroyal	I	Moderate	89
<b>Lythraceae</b>	<i>Lythrum hyssopifolia</i>	Loosestrife	I	Limited	102, 103, 151, 154
<b>Malvaceae</b>	<i>Abutilon</i> sp.	Abutilon	--		89
	<i>Malva</i> sp.	Mallow	I		89, 102
	<i>Malvella leprosa</i>	Alkali-mallow	N		89, 154
<b>Moraceae</b>	<i>Morus alba</i>	White mulberry	I		103, 159
<b>Myrsinaceae</b>	<i>Anagallis arvensis</i>	Scarlet pimpernel	I		58
<b>Myrtaceae</b>	<i>Eucalyptus camaldulensis</i>	Red gum, river red gum	I	Limited	155
<b>Oleaceae</b>	<i>Fraxinus latifolia</i>	Oregon ash	N		89, 102, 103
	<i>Ligustrum lucidum</i>	Chinese privet	I		58
<b>Onagraceae</b>	<i>Epilobium ciliatum</i>	Willowherb	N		89, 103, 151, 154, 159
	<i>Oenothera elata</i>	Evening-primrose	N		58
	<i>Ludwigia hexapetala</i>	Uruguayan primrose-willow	I	High	89, 102, 151, 154
<b>Papaveraceae</b>	<i>Eschscholzia californica</i>	California poppy	N		102
<b>Phytolaccaeae</b>	<i>Phytolacca americana</i> var. <i>americana</i>	Pokeweed	I	Limited	58
<b>Plantaginaceae</b>	<i>Kickxia</i> sp.	Kickxia	I		58, 89, 151, 154

Family	Scientific Name <sup>1</sup>	Common Name	N/I <sup>2</sup>	Cal-IPC <sup>3</sup>	Observed at Sump Number(s)
	<i>Plantago lanceolata</i>	English plantain	I	Limited	89, 102, 103, 151, 154, 155
	<i>Plantago major</i>	Common plantain	I		58
<b>Platanaceae</b>	<i>Platanus</i> sp.	Sycamore	--		58
<b>Polygonaceae</b>	<i>Persicaria hydropiperoides</i>	False waterpepper	N		89
	<i>Persicaria</i> sp.	Smartweed	--		89, 154, 159
	<i>Polygonum aviculare</i> ssp. <i>depressum</i>	Knotweed, knotgrass	I		89, 102
	<i>Rumex crispus</i>	Curly dock	I	Limited	89, 102, 151, 154
<b>Rosaceae</b>	<i>Prunus cerasifera</i>	Cherry plum	I	Limited	151
	<i>Prunus dulcis</i>	Almond	I		103
	<i>Rubus armeniacus</i>	Himalayan blackberry	I	High	58, 151, 155
<b>Rubiaceae</b>	<i>Cephalanthus occidentalis</i>	California button willow	N		58, 155
	<i>Galium aparine</i>	Goose grass	N		58, 155
<b>Salicaceae</b>	<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood	N		58, 155
	<i>Salix exigua</i>	Willow	N		151
	<i>Salix gooddingii</i>	Goodding's black willow	N		102, 103, 154, 159
	<i>Salix lasiandra</i>	Willow	N		155
	<i>Salix lasiolepis</i>	Arroyo willow	N		151
<b>Sapindaceae</b>	<i>Acer negundo</i>	Box elder	N		58, 89, 151, 155
	<i>Acer saccharinum</i>	Silver maple	I		159
	<i>Aesculus californica</i>	California buckeye	N		58
<b>Scrophulariaceae</b>	<i>Verbascum blattaria</i>	Moth mullein	I		151
	<i>Solanum nigrum</i>	Black nightshade	I		151
<b>Verbenaceae</b>	<i>Phyla nodiflora</i>	Phyla	N		103, 154
	<i>Verbena</i> sp.	Vervain	--		89, 103, 159
<b>Viscaceae</b>	<i>Phoradendron</i> sp.	Mistletoe	N		102, 103
<b>Vitaceae</b>	<i>Vitis californica</i>	California wild grape	N		58, 151
<b>Zygophyllaceae</b>	<i>Tribulus terrestris</i>	Puncture vine, caltrop	I		151
<b>MONOCOTS</b>					
<b>Alismataceae</b>	<i>Alisma</i> sp.	Water-plantain	--		154
<b>Cyperaceae</b>	<i>Cyperus eragrostis</i>	Nutsedge	N		58, 89, 102, 151, 154, 159
	<i>Schoenoplectus acutus</i> var. <i>occidentalis</i>	Common tule	N		89
<b>Iridaceae</b>	<i>Iris pseudacorus</i>	Iris	I	Limited	155
<b>Juncaceae</b>	<i>Juncus effusus</i>	Soft or lamp rush	N		89
<b>Poaceae</b>	<i>Avena</i> sp.	Oat	I		103
	<i>Avena fatua</i>	Wild oat	I	Moderate	58, 89, 102, 151, 154, 155, 159

Family	Scientific Name <sup>1</sup>	Common Name	N/I <sup>2</sup>	Cal-IPC <sup>3</sup>	Observed at Sump Number(s)
	<i>Bromus diandrus</i>	Ripgut grass	I	Moderate	58, 89, 103, 151, 155, 159
	<i>Bromus hordeaceus</i>	Soft chess	I	Limited	58, 155
	<i>Cynodon dactylon</i>	Bermuda grass	I	Moderate	58, 103, 151, 155, 159
	<i>Digitaria</i> sp.	Crab grass	--		102
	<i>Echinochloa</i> sp.	Barnyard grass	--		103, 151, 154
	<i>Elymus glaucus</i>	Blue or western wild-rye	N		89, 102, 159
	<i>Elymus triticoides</i>	Beardless wild rye	N		151
	<i>Eriochloa</i> sp.	Cup grass	--		154
	<i>Festuca perennis</i>	Rye grass	I	Moderate	58, 89, 102, 103, 154, 155
	<i>Festuca myuros</i>	Rattail sixweeks grass	I	Moderate	58, 151, 155
	<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Hare barley	I	Moderate	103, 151, 155
	<i>Leersia oryzoides</i>	Rice cutgrass	N		159
	<i>Paspalum dilatatum</i>	Dallis grass	I		89, 102, 155
	<i>Poa annua</i>	Annual blue grass	I		103
	<i>Polypogon monspeliensis</i>	Rabbitfoot grass	I	Limited	154
	<i>Setaria pumila</i> ssp. <i>pumila</i>	Yellow bristle grass	I		151, 155
	<i>Sorghum halapense</i>	Johnson grass	I		58, 155
	<i>Stipa pulchra</i>	Purple needle grass	N		58, 103, 154, 159

<sup>1</sup> Nomenclature and taxonomy follow *The Jepson manual: Vascular plants of California*, 2nd ed. (Baldwin et al., eds. 2012).

<sup>2</sup> N = Native to California; I = Introduced.

<sup>3</sup> Negative ecological impact ranking by the California Invasive Plant Council (Cal-IPC 2020).

## Wildlife Species Observed.

Common Name	Scientific Name	Observed at Sump Number(s)
<b>AMPHIBIANS</b>		
American bullfrog	<i>Lithobates catesbeianus</i>	89, 154
<b>FISH</b>		
Mosquito fish	<i>Gambusia affinis</i>	154
<b>REPTILES</b>		
Red-eared slider	<i>Trachemys scripta elegans</i>	151
Western fence lizard	<i>Sceloporus occidentalis</i>	155
<b>BIRDS</b>		
Anna's hummingbird	<i>Calypte anna</i>	102, 103, 154, 159
Barn swallow <sup>1</sup>	<i>Hirundo rustica</i>	89, 102, 103, 151
Belted kingfisher	<i>Megaceryle alcyon</i>	89
Black phoebe	<i>Sayornis nigricans</i>	103, 151, 154, 159
Bushtit	<i>Psaltiriparus minimus</i>	151, 154
California scrub jay	<i>Aphelocoma californica</i>	102, 103, 151, 159
California towhee	<i>Melospiza crissalis</i>	102
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	89, 103
Common raven	<i>Corvus corax</i>	103, 154
Cooper's hawk	<i>Accipiter cooperii</i>	159
Great egret	<i>Ardea alba</i>	89, 103
House finch	<i>Haemorhous mexicanus</i>	103, 154, 155
Mourning dove	<i>Zenaidura macroura</i>	58, 103, 151
Northern harrier	<i>Circus hudsonius</i>	155
Northern mockingbird	<i>Mimus polyglottos</i>	103, 155
Nuttall's woodpecker	<i>Picoides nuttallii</i>	103, 151, 155
Red-shouldered hawk	<i>Buteo lineatus</i>	154
Red-tailed hawk	<i>Buteo jamaicensis</i>	89
Song sparrow	<i>Melospiza melodia</i>	89
Spotted towhee	<i>Pipilo maculatus</i>	151
Swainson's hawk	<i>Buteo swainsoni</i>	89, 154
Turkey vulture	<i>Cathartes aura</i>	89, 102, 154, 155
Western kingbird	<i>Tyrannus verticalis</i>	58
White-breasted nuthatch	<i>Sitta carolinensis</i>	102, 159
Wild turkey	<i>Meleagris gallopavo</i>	151
<b>MAMMALS</b>		
California ground squirrel	<i>Otospermophilus beecheyi</i>	89, 151
Domestic cat	<i>Felis catus</i>	159
Domestic dog	<i>Canis lupus familiaris</i>	159

<sup>1</sup> Active nests assumed to occur in openings of concrete pump structures at sumps 89, 102, and 103 based on adult swallow visitation and territorial defensive behavior observed on 22 July 2020.

# **APPENDIX D.**

## **Photographs**

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## Photographs

### Sump 58



Photo 1. View looking northeast toward the Sump 58 Outfall Channel as it leaves the outfall structure and enters a heavily eroded channel. 23 July 2020.



Photo 2. View looking north toward Steelhead Creek. The Sump 58 Outfall Channel is obscured by riparian vegetation at center. 23 July 2020.



Photo 3. View looking northwest toward the Sump 58 concrete outfall structure, and the steep drop-off into the Sump 58 Outfall Channel. 23 July 2020.



Photo 4. View looking southeast toward the upper portion of the waterside levee slope along Garden Highway. 23 July 2020.

## Photographs

### Sump 89



Photo 5. View looking southwest (downstream) toward the Sump 89 outfall into Morrison Creek. Hydrophytic ludwigia (*Ludwigia hexapetala*) and knotweed (*Persicaria* sp.) are abundant along the OHWM. 22 July 2020.



Photo 6. View looking northeast (upstream) toward Morrison Creek and the Sump 89 outfall (circled). Native riparian vegetation such as black walnut (*Juglans hindsii*) is present on the bank above OHWM. 22 July 2020.



Photo 7. View looking northeast toward the Sump 89 outfall (circled). Data Point 1 is located at shovel in foreground. 22 July 2020.



Photo 8. View looking southwest toward the nonnative grassland on the land side of the levee and Sump 89. 22 July 2020.

## Photographs

### Sump 102



Photo 9. View looking west toward the Sump 102 Outfall as it enters the Steelhead Creek. Ludwigia (*Ludwigia hexapetala*) and red sesbania (*Sesbania punicea*) are dominant in and along the canal. 23 July 2020.



Photo 10. View looking north (upstream) along the Steelhead Creek low flow channel just east of the BSA. 23 July 2020.



Photo 11. View looking south toward the OHWM of Steelhead Creek at the Sump 102 outfall structure. 23 July 2020.



Photo 12. View looking east along the Sump 102 outfall pipe alignment from the levee crest. This area was under construction during fieldwork. 23 July 2020.

## Photographs

### Sump 103



Photo 13. View looking northwest toward the Sump 103 outfall as it enters Arcade Creek. The banks around the outfall have been reinforced with concrete. 23 July 2020.



Photo 14. View looking south toward the Sump 103 outfall as it enters Arcade Creek. The riparian corridor along Arcade Creek is visible in background. 23 July 2020.



Photo 15. View looking west, toward the water side of the levee. The outfall occurs at white arrow. A fenced vault occurs near the top of the levee. 23 July 2020.



Photo 16. View looking west on the land side of the levee. Sump 103 occurs in the fenced facility on right. 23 July 2020.

## Photographs

### Sump 151



Photo 17. View looking north toward the Sump 151 outfall. A pool of water occurs at the outfall. No flowing water was observed during fieldwork. 22 July 2020.



Photo 18. View looking south toward the pool of water at the Sump 151 outfall on the American River floodplain. Native riparian vegetation is present. 22 July 2020.



Photo 19. View looking southeast toward the Sump 151 outfall and grassland on the waterside levee slope. 22 July 2020.



Photo 20. View looking west toward the fenced Sump 151 facility (white arrow) and landside levee slope. 22 July 2020.

## Photographs

### Sump 154



Photo 21. View looking south toward the Sump 154 concrete outfall structures from the dry bed of Arcade Creek. Some riprap occurs below the outfall. 23 July 2020.



Photo 22. View looking northeast (upstream) in Arcade Creek at the Sump 154 outfall. 23 July 2020.



Photo 23. View looking northeast toward the waterside levee slope at the Sump 154 outfall. Arcade Creek visible on left. 23 July 2020.



Photo 24. View looking southwest toward the fenced Sump 154 facility on the land side of the levee. 23 July 2020.

## Photographs

### Sump 155



Photo 25. View looking southwest toward the Sump 155 outfall structure. 22 July 2020.



Photo 26. View looking west toward the OHWM of the American River just north of the Sump 155 outfall structure (visible on left). 22 July 2020.



Photo 27. View looking north on the waterside levee slope. Nonnative grassland occurs on the levee. A large red gum eucalyptus occurs near the outfall. 22 July 2020.



Photo 28. View looking south (upstream) toward the American River from the Sump 155 outfall. Native riparian vegetation occurs along the river OHWM. 22 July 2020.

## Photographs

### Sump 159



Photo 29. View looking southwest toward the Sump 159 outfall into Arcade Creek. 23 July 2020.



Photo 30. View looking northeast (upstream) toward the dry bed of Arcade Creek just upstream of Sump 159. 23 July 2020.



Photo 31. View looking south toward the alignment of the Sump 159 outfall pipes on the water side of the levee. Nonnative grassland occurs on the levee slope. 23 July 2020.



Photo 32. View looking southwest along the land side of the levee. The fenced Sump 159 facility is on left. 23 July 2020.

## **APPENDIX E.**

### **Summary of Recommended Mitigation Measures for Biological Resources**

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Environmental Factor	Mitigation Measure #	Recommended Environmental Protection Measures	Sump Sites	Timing
Biological Resources	BIO-1	<b>Riparian Forest, Riparian Scrub Shrub, and Trees</b> <ul style="list-style-type: none"> <li>Removal of trees and riparian vegetation will be minimized to the extent possible.</li> <li>To protect avoided riparian forest, riparian scrub shrub, retained trees, and other sensitive natural communities, prior to construction, environmentally sensitive area (ESA) fencing or equivalent demarcation approved by the engineer will be placed along the limits of construction in the BSA to exclude construction activities. Trucks and other vehicles will not be allowed to park beyond, nor shall equipment be stored beyond, the fencing. No vegetation trimming/mowing or ground-disturbing activities will be permitted beyond the fencing.</li> <li>For all Sumps, the City will obtain a Streambed Alteration Agreement from the CDFW in compliance with Fish and Game Code Section 1602. The City and its contractor will be required to comply with terms of the Agreement and provide any required documentation of proof of compliance to CDFW.</li> </ul>	All Sumps	Pre-Construction and Construction Phases
Biological Resources	BIO-2	<b>Perennial and Intermittent Channels.</b> <ul style="list-style-type: none"> <li>The Project will comply with the provisions of Title 9, Chapters 9.31 through 9.35 of the City of Sacramento Code (Grading, Erosion and Sediment Control Ordinance). Code compliance includes preparation of an Erosion and Sediment Control Plan.</li> <li>If required, the Project will obtain National Pollutant Discharge Elimination System (NPDES) coverage via the State Water Resources Control Board's (SWRCB) Construction General Permit, which requires preparation of a Stormwater Pollution Prevention Plan prior to construction.</li> <li>Best management practices to control soil erosion, sediment transport, and runoff pollution will be implemented during construction per the City's Administrative and Technical Procedures Manual for Grading and Erosion and Sediment Control (City of Sacramento 2013).</li> <li>Construction activities on the water side of the levee will not occur during the flood season, as determined by the Central Valley Flood Protection Board (CVFPB) – typically 1 November through 15 April or 15 July, as specifically determined by the CVFPB for each sump site. The Project will adhere to further work period restrictions in applicable permits and requirements from CDFW, USFWS, and NMFS, unless the applicable permitting agencies approve work window modification.</li> <li>Equipment will be refueled and serviced at designated construction staging areas. All construction material will be stored and contained in designated areas located away from aquatic resources to prevent transport of materials into adjacent waterways. Appropriate BMPs will be installed to collect any discharge, and adequate materials for spill cleanup will be kept on site. Construction vehicles and equipment will be properly maintained to prevent contamination of soil or water from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease.</li> <li>For all sump sites, the City will obtain a Streambed Alteration Agreement from CDFW in compliance with Fish and Game Code Section 1602 and an Encroachment Permit permission in compliance with Section 408 of the Clean Water Act from the CVFPB. For Sumps 089 and 155, the City will obtain approval from U.S. Army Corps of Engineers for Project coverage under Nationwide Permits 33 and 3, respectively, in compliance with Section 404 of the Clean Water Act and a Water Quality Certification from the Central Valley Regional Water Quality Control Board in compliance</li> </ul>	All Sumps	Pre-Construction and Construction Phases

		with Section 401 of the Clean Water Act. The City and its contractor will be required to comply with terms of all permits and provide any required documentation of proof of compliance to the permitting agencies.		
Biological Resources	BIO-3	<p><b>Valley elderberry longhorn beetle (VELB)</b></p> <ul style="list-style-type: none"> <li>Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) will avoid elderberry shrubs by a minimum of 20 feet from the drip-line. Areas within 20 feet of elderberry shrubs at the Lathrop Staging Area and areas west of the levee access road at Sump 155 shall be designated as Environmentally Sensitive Areas (ESAs). No construction personnel, equipment, or material storage shall be allowed within the ESAs. Brightly colored construction fencing shall be installed at least 20 feet from elderberry shrubs to demarcate the ESA at the Lathrop Staging Area and along the length of the western edge of the levee access road at Sump 155. The fencing shall include signage prohibiting entry by construction personnel. At Sump 155, signage will prohibit vehicle or equipment parking along the access road within 20 feet of the elderberry shrub.</li> <li>A qualified biologist will provide training for all contractors, work crews, and any onsite personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance</li> </ul>	Sump 155  Lathrop Staging Area	Pre-Construction and Construction Phases
Biological Resources	BIO-4	<p><b>Western Pond Turtle</b></p> <ul style="list-style-type: none"> <li>A qualified biologist shall conduct a preconstruction survey for WPT within 48 hours prior to the onset of vegetation removal or ground disturbance. The survey shall cover the waterside of the levee. If a WPT is located during the survey, the biologist will be given sufficient time prior to construction to relocate the WPT to the closest suitable habitat where they will not be affected by construction.</li> <li>If WPT are found during construction, construction activities with potential to harm the individual(s) will stop and a qualified biologist will be notified. Construction will resume when the biologist has either relocated the WPT out of the construction zone to nearby suitable habitat, or, after thorough inspection, determined that the WPT has moved away from the construction zone.</li> <li>Environmental awareness training will be conducted by a qualified biologist prior to the onset of project work. Construction personnel will be trained on how to identify WPT, and how to proceed if WPT is encountered. If a WPT is encountered in the work area, construction should stop and a qualified biologist should be notified. The training will be repeated for new personnel as they arrive at the site. Upon completion of training, employees will sign a form stating that they attended the training and understand all the protection measures.</li> </ul>	All Sumps	Pre-Construction and Construction Phases
Biological Resources	BIO-5	<p><b>Giant Garter Snake</b></p> <ul style="list-style-type: none"> <li>To the maximum extent possible, movement of heavy equipment will be confined to existing roadways and developed areas to minimize habitat disturbance.</li> <li>Construction activity within GGS habitat should be conducted between May 1 and October 1. This is the active period for GGS and direct mortality is lessened because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take.</li> </ul>	Sump 089	Pre-Construction and Construction Phases

		<ul style="list-style-type: none"> <li>Clearing will be confined to the minimal area necessary to facilitate construction activities. Avoided GGS habitat within or adjacent to the BSA will be flagged as ESAs. These areas will be avoided by all construction personnel.</li> <li>Construction personnel will receive USFWS-approved worker environmental awareness training. This training instructs workers to recognize GGS and their habitat.</li> <li>Twenty-four hours prior to construction activities, the BSA will be surveyed for GGS. Survey of the BSA will be repeated if a lapse in construction activity of two weeks or greater has occurred. If a GGS is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Any sightings and any incidental take will be reported to the Service immediately by telephone at (916) 414-6600.</li> <li>Any dewatered habitat will remain dry for at least 24 hours after April 15 and prior to excavating or filling of the dewatered habitat.</li> <li>After completion of construction activities, any temporary fill and construction debris will be removed and, wherever feasible, disturbed areas will be restored to pre-project conditions. Restoration work may include such activities as replanting species removed from banks or replanting emergent vegetation in the active channel.</li> </ul>		
Biological Resources	BIO-5	<p><b>Nesting Birds Listed Under the MBTA or Regulated by CA Fish and Game Code</b></p> <ul style="list-style-type: none"> <li>To minimize effects to nesting birds, trees and shrubs scheduled for removal will be removed during the non-breeding season, between 2 September and 14 February.</li> <li>A preconstruction survey for nesting birds will be conducted prior to any work initiated between 15 February and 1 September. A qualified biologist will conduct the survey within 14 days prior to initiation of construction activities. The survey will cover areas within 500 feet of the project for birds of prey and 100 feet of the project for migratory birds.</li> <li>If an active nest of a bird of prey, migratory bird, or other protected bird species is discovered, then construction within 500 feet of the nest will stop until a qualified biologist confirms where work may resume without threat of nest abandonment. The biologist will establish a minimum 500-foot Environmentally Sensitive Area (ESA) around nests of bird of prey. A minimum 100-foot ESA will be established around nests of migratory or other protected bird species. No construction activity will be allowed in the ESA until the biologist determines the nest is no longer active or that a smaller ESA will protect the active nest. Buffer sizes may be adjusted at the discretion of the biologist depending on the species of bird, the location of the nest relative to the project, the existing level of disturbance, and other site-specific conditions.</li> </ul>	All Sumps	Pre-Construction
Biological Resources	BIO-6	<p><b>Burrowing Owl</b></p> <ul style="list-style-type: none"> <li>A qualified biologist will conduct Take Avoidance Surveys in accordance with Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFW 2012). An initial Take Avoidance Survey will be conducted no less than 14 days prior to initiating ground disturbance activities and a final survey will be conducted within 24 hours prior to ground disturbance.</li> <li>The preconstruction survey for burrowing owls will include all potential burrowing owl habitat within 500 feet of the project. Portions of the survey area located on private land will be surveyed from all publicly accessible areas.</li> </ul>	Sump 089	Pre-Construction

		<ul style="list-style-type: none"> <li>• If active burrowing owl burrows are found, the following measures shall be implemented:               <ul style="list-style-type: none"> <li>○ During the non-breeding season (1 September through 31 January), the biologist shall establish a 160-foot ESA around the burrow. During the breeding season (1 February through 31 August), the biologist shall establish a 300-foot ESA around the burrow in consultation with CDFW.</li> <li>○ The size of the ESA may be reduced if the biologist monitors the construction activities and determines that no disturbance to the burrowing owl is occurring. Reduction of ESA size depends on the location of the burrow relative to the project, project activities during the time the burrow is active, and other project-specific factors.</li> <li>○ If the burrow is located within the construction zone and it is during the non-breeding season, the burrowing owl can be passively excluded from the burrow using one-way doors, as described in the Exclusion Plan of Appendix E of the Staff Report on Burrowing Owl Mitigation (CDFW 2012).</li> <li>○ If the burrow is located within the construction zone and it is during the breeding season, the burrow owl can only be passively excluded if it has been confirmed that the owl has not begun egg laying and incubation, the clutch was unsuccessful, or juveniles from the occupied burrows are foraging independently and are capable of independent survival.</li> </ul> </li> </ul>		
Biological Resources	BIO-7	<p><b>Swainson's hawk</b></p> <ul style="list-style-type: none"> <li>• If construction or tree removal cannot be avoided during the nesting season (15 March through 30 August), a qualified biologist shall conduct a properly timed preconstruction survey for Swainson's hawk in accordance with the applicable portions of the 2000 Swainson's Hawk Technical Advisory Committee (TAC) guidelines within 15 days prior to the beginning of construction. The survey area will extend 0.25 miles out from the BSA. If a Swainson's hawk nest is active within the 0.25-mile survey area at the time of project initiation, protective buffers will be established around the nest in coordination with CDFW to avoid 'take'.</li> </ul>	All Sumps	Pre-Construction