FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT
VOLUME II APPENDICES

AMERICAN RIVER PARKWAY NATURAL RESOURCES MANAGEMENT PLAN

Control Number: PLER2019-00073
State Clearinghouse Number: 2021040230
Date: February 2023

COUNTY OF SACRAMENTO
PLANNING AND ENVIRONMENTAL REVIEW
827 7TH STREET, ROOM 225
SACRAMENTO, CALIFORNIA 95814

Board Of Supervisors

1st District: Phil Serna

2nd District: Patrick Kennedy

3rd District: Rich Desmond

4th District: Sue Frost

5th District: Patrick Hume

County Executive

Ann Edwards, County Executive

Prepared By

County of Sacramento
Planning and Environmental Review

APPENDICES

The subject of this ~~Draft~~ **Final** Supplemental Environmental Impact Report (~~D~~**F**SEIR) is a project known as the Natural Resources Management Plan (NRMP).

1 - Introduction	IN-1: Mitigation Monitoring and Reporting Program for the Environmental Impact Report for the American River Parkway Plan Update (2003-0332) prepared by County of Sacramento Department of Environmental Review and Assessment
1 - Introduction	IN-2: Notice of Preparation of a Draft Supplemental Environmental Impact Report for American River Parkway Natural Resources Management Plan (PLER2019-00073) prepared by County of Sacramento Office of Planning and Environmental Review dated April 8, 2021
1 - Introduction	IN-3: Notice of Preparation Comment Letters from the Native American Heritage Commission dated April 12, 2021 and from Sacramento Regional County Sanitation District (RegionalSan) dated May 21, 2021
2 – Project Description	PD-1: American River Parkway Natural Resources Management Plan (NRMP) prepared by MIG for Sacramento County and Sacramento County Regional Parks. Due to the size of the document, it is available for review at the following website: https://regionalparks.saccounty.gov/Parks/Pages/NaturalResourcesManagement.aspx The document is also available for review in person at: Planning and Environmental Review: 827 7th Street, Rm 225 Sacramento, CA 95814 916-874-6141
2 – Project Description	PD-2: Table of Relevant ARPP Policies in relation to NRMP Goals, Objectives, and Performance Measures prepared by County of Sacramento Planning and Environmental Review
2 – Project Description	PD-3: NRMP Area Plan Maps and Potential Resource Management Actions prepared by MIG for Sacramento County and Sacramento County Regional Parks
2 – Project Description	PD-4: Table of ARPPU Area Plans Land Use Designations and Potential Resource Management Actions for the American River Parkway Natural Resources Management Plan (NRMP) prepared by Sacramento County Regional Parks
5 - Hydrology	HY-1: A Hydrology Report titled *Natural Resource Management Plan Modeling Support Project: Cumulative Hydraulic Impact Assessment* (Hydrology Report) was prepared by cbec eco engineering dated October 29, 2021
5 - Hydrology	HY-2: NRMP Management Actions incorporated into the hydraulic modeling by Area Plan

13 – Response to Comments	RTC-1: Response to Comment Letters from the Central Valley Bird Club dated November 2, 2022, California State Lands Commission dated November 3, 2022, Central Valley Regional Water Quality Control Board dated November 3, 2022, and Wildlife Conservation Board.

Appendix IN-1_ARPP MMRP from 2008

COUNTY OF SACRAMENTO
DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT

MITIGATION MONITORING AND REPORTING PROGRAM

CONTROL NUMBER: 03-GPB-0332

NAME: American River Parkway Plan Update 2006

LOCATION: The American River Parkway (Parkway) is an open space area surrounding the American River. The Parkway extends approximately 29 miles from Folsom Dam in the northeast portion of Sacramento County to the confluence of the American and Sacramento Rivers in the northwest area of downtown Sacramento.

ASSESSOR'S PARCEL NUMBER: MULTIPLE

APPLICANT:

Sacramento County Board of
Supervisors
700 H Street, Room 2450
Sacramento, CA

PROJECT DESCRIPTION: A **General Plan Amendment** to the American River Parkway Plan, an Element of the Sacramento County General Plan.

TYPE OF ENVIRONMENTAL DOCUMENT:

___ Negative Declaration
___ Prior Negative Declaration
_X_ Environmental Impact Report
___ Prior Environmental Impact Report
___ Supplemental Environmental Impact Report

PREPARED BY: Sacramento County Department of
Environmental Review and Assessment
827 7th Street, Room 220
Sacramento, CA 95814

PHONE: (916) 874-7914

MITIGATION MONITORING AND REPORTING PROGRAM
ADOPTED BY: BOARD OF SUPERVISORS **DATE:**

ATTEST:_____

CLERK

TABLE OF MEASURES

PURPOSE AND PROCEDURES

Pursuant to Section 21081.6 of the Public Resources Code and Chapter 20.02 of the Sacramento County Code, a Mitigation Monitoring and Reporting Program has been established for the project entitled American River Parkway Plan Update 2006 **(Control Number:** 03-GPB-0332).

PURPOSE

The purpose of this program is to assure diligent and good faith compliance with the Mitigation Measures which have been recommended in the environmental document, and adopted as part of the project or made conditions of project approval, in order to avoid or mitigate potentially significant effects on the environment.

PROCESSING

Processing of the Mitigation Monitoring and Reporting Program is described in Chapter 20.02.050 of the Sacramento County Code. It is recognized that the regulatory framework may alter between the time of project approval and project implementation. An adopted mitigation measure that has become unnecessary due to the de-listing of a species previously listed as special-status may be deleted or modified by the Environmental Coordinator to reflect the regulatory framework and guidance in effect at the time of Project implementation.

NOTIFICATION AND COMPLIANCE

It shall be the responsibility of the project applicant to provide written notification to the Environmental Coordinator, in a timely manner, of the completion of each Mitigation Measure as identified on the following pages. The Department of Environmental Review and Assessment (DERA) will verify that the project is in compliance. Any non-compliance will be reported to the project applicant, and it shall be the project applicant's responsibility to rectify the situation by bringing the project into compliance and re-notifying the Environmental Coordinator.

PAYMENT

It shall be the responsibility of the project applicant to reimburse DERA for all expenses incurred in the implementation of the Mitigation Monitoring and Reporting Program (MMRP), including any necessary enforcement actions.

COMPLETION

Pursuant to Section 20.02.060 of the Sacramento County Code, upon the determination of the Environmental Coordinator that compliance with the terms of the approved Mitigation Monitoring and Reporting Program has been achieved, and that there has

been full payment of all fees for the project, the Environmental Coordinator shall issue a Program Completion Certificate for the project.

STANDARD PROVISIONS

The project applicant shall submit one copy of all Project Plans and Construction Specifications and/or revisions to the Department of Environmental Review and Assessment prior to board approval to advertise Plans and Specifications. If the Department of Environmental Review and Assessment determines that the Plans are not in full compliance with the adopted MMRP, the Plans shall be returned to the project applicant with a letter specifying the items of non-compliance, and instructing the applicant to revise the Plans, and then resubmit one copy of the revised Plans to the Department of Environmental Review and Assessment prior to board approval to advertise.

Additionally, the project applicant shall notify the Department of Environmental Review and Assessment **no later than 48 hours** prior to the start of construction and no later than 24 hours after its completion. The applicant shall notify the Department of Environmental Review and Assessment no later than 48 hours prior to any/all Final Inspection(s) by the County of Sacramento.

The project applicant shall notify the Department of Environmental Review and Assessment (DERA) of any pre-construction meetings. Upon notification, a determination will be made as to whether or not DERA will need to attend the meeting.

MITIGATION MEASURE LU-1

One of the following shall be implemented to clarify the definitions and functions of the two types of boat launch facilities:

1. The car-top boat launch and the boat ramp/trailer boat designation shall be eliminated and shall be replaced by a single boat launch designation. If this measure is chosen, mitigation for habitat loss must also be implemented in order to reduce impacts to less-than-significant levels (refer to the Biological Resources measures).

OR

2. The Parkway Plan shall be amended to include a definition for car-top boat launch facility and the boat ramp/trailer boat facility. At a minimum, the definition of the car-top boat launch shall include the following elements: no motorized boats may be launched from this point, boats must be hand-carried to the water, and no impervious surfacing shall be used to create the boat launch site or access pathway.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Parkway Plan to ensure that the definitions have been included.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE LU-2

The proposed bridge shown on the far eastern side of the Discovery Park Area Plan (adjacent to the existing 16th Street bridge) shall be removed from the Area Plan.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Discovery Park Area Plan to ensure that the proposed bridge has been removed.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE LU-3

One of the following revisions shall be made to the proposed Cal Expo Area Plan:

1. The existing Nature Study Area designation shall be retained in the northwestern portion of the site.

   OR

2. The proposed Limited Recreation Area in the northwestern portion of the site shall be restricted to the area of the levee, the levee slope, and the toe of the levee where the habitat is primarily grassy. The Limited Recreation Area shall not overlay the existing marsh habitat, or encumber areas of dense riparian canopy or understory.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Cal Expo Area Plan to ensure that the measure has been implemented.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE LU-4

Policy 5.17 shall be modified to specify that an implementation plan shall be in place prior to allowing the use of unpaved maintenance roads by users on mountain bicycles. The implementation plan shall include a design component and an educational component. The design component shall include surveys of the roads to identify blind curves, intersections and other areas of potential safety concern. The educational component shall include signage and outreach efforts designed to decrease user group conflicts.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Submit the Implementation Plan to the Department of Environmental Review and Assessment prior to allowing the new uses described in Policy 5.17.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Parkway Plan to ensure that Policy 5.17 has been modified as described by the measure.

2. Review the Implementation Plan to ensure that it contains the identified minimum components.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE LU-5

One of the following changes shall be made to the Parkway Plan in order to resolve an internal inconsistency related to access to car-top boat launches:

1. A pedestrian trail designation shall be shown on the Area Plans connecting existing and proposed car-top boat launches to the nearest reasonable access point.

OR

2. A new trail designation shall be defined in the Parkway Plan and shown on the Area Plans connecting existing and proposed car-top boat launches to the nearest reasonable access point. The new trail designation shall be described as a footpath primarily maintained through use, not requiring any surface treatment (or similar language). Signage must still be provided, consistent with the requirements for other trail types.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Parkway Plan to ensure that the measure has been implemented.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE LU-6

One of the following changes shall be made to the Cal Expo Area Plan in order to resolve an internal inconsistency:

1. A pedestrian access trail shall be designated leading to the Interpretive Area in the center of Bushy Lake. The trail designation shall overlie the existing utility road.

   OR

2. The Interpretive Area shown in the center of Bushy Lake shall either be removed or shall be relocated to an area adjacent to a proposed or existing public access path.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Cal Expo Area Plan to ensure that the measure has been implemented.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-1

Prior to approval of grading plans or issuance of building permits, all development projects within the Discovery Park and Cal Expo Area Plans must provide documentation that there are no wetlands present within the construction area (including staging areas and similar). A person qualified to perform wetland delineations (in accordance with the most recent United States Army Corps of Engineers delineation manual) shall inspect the construction area, determine if wetlands are present, and provide written documentation of the findings. This need not include a formal wetland delineation if the site investigator determines a finding of negative presence can be made without the delineation. If wetlands are not present, no further action is required. If wetlands are present, Mitigation Measure BR-2 shall apply.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Prior to start of construction in the Discovery Park and Cal Expo Area Plans, submit either documentation that wetlands are not present or a jurisdictional wetland delineation verified by the U.S. Corps of Engineers to the Department of Environmental Review and Assessment. Include the name, address and phone number of the qualified professionals that prepared the wetland delineation.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the submitted documentation for compliance.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-2

All projects that have identified wetlands within the construction area (which includes staging areas and similar) shall adhere to one or a combination of the following, to the satisfaction of the Department of Environmental Review and Assessment (unless the wetland is habitat for vernal pool branchiopods, in which case Mitigation Measure BR-21 shall apply):

A. *Total avoidance: The project is designed to achieve total wetland avoidance, which requires that the construction footprint shall be no closer than 50 feet to any wetland*. Orange temporary construction fencing shall be installed to delineate this buffer area. If total avoidance is achieved, no further action is required.

B. *Partial avoidance: The project is designed to avoid encroaching within the delineated wetland boundaries, but is within 50 feet of the wetland boundaries.* In such a case, orange temporary construction fencing shall be installed at the limits of construction. Regardless of the construction season, this shall be supplemented by straw wattles (or similar) and silt fencing. If the edge of the facility is closer than 50 feet to the wetland margin, informational signage shall be installed next to the facility to inform Parkway users that a sensitive wetland habitat is located nearby and that off-trail activities could result in serious harm to this resource. Any new parking lot in the buffer area shall be designed so that runoff from the surface of the lot shall be directed away from the wetland. Fencing shall also be placed around the boundary of the facility on all sides where a wetland is within 50 feet. The fencing shall be of open style, to allow the passage of wildlife (e.g. vertical pipe fencing).

C. *Compensation:* Compensation may be either through restoration or creation of wetlands, with priority being placed on the restoration option, and shall take place within the Parkway.

    a. *Restoration:* Restoration may include either enhancing an existing degraded wetland area (rehabilitation) or returning function to an historic wetland area that is no longer functioning (re-establishment). As the former type of restoration does not result in net-gain of wetland habitat, this type of restoration shall only be permissible when mitigating for loss of a wetland that is also degraded or otherwise low-quality (according to a qualified biologist). High-quality wetlands must be mitigated through either the re-establishment restoration method or through creation (see item b, below). Mitigation may take place at multiple locations if multiple wetlands are impacted, but the total size of each restoration area shall be at least the same size as the wetland impacted. Any vegetation planted as part of the restoration activities shall be locally native plants chosen from the Army Corps list of wetland plants that is current at the time of project approval. In the case of re-establishment, mitigation is required at a

minimum 1:1 ratio. In the case of rehabilitation, mitigation is required at a minimum 2:1 ratio.

b. *Creation:* An equivalent amount of in-kind wetland habitat removed shall be created within the Parkway. Creation shall be in accordance with the Army Corps guidelines that are current at the time of project approval.

Implementation and Notification (Action by Project Applicant):

1. Include the above measure verbatim as a Construction Note and incorporate it as necessary into any/all Preliminary Grading Plans, Improvement Plans and Building/Development Plans which are submitted to the Department of County Engineering and/or the Planning Department for projects subject to this measure, and any/all revisions to those Plans which are subsequently submitted.

2. Prior to construction within 50 feet of the on-site wetlands, submit to the Department of Environmental Review and Assessment a copy of any/all permit(s) from the USACOE and written evidence of compliance with General Plan Conservation Element Policy No. CO-96.

3. Notify the Department of Environmental Review and Assessment no later than 48 hours prior to the start of each phase of construction work (including clearing and grubbing) and no later than 24 hours after its completion.

4. Comply fully with the above measure.

5. Notify the Department of Environmental Review and Assessment no later than 48 hours prior to any/all Final Inspection(s) by the Department of County Engineering.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Review the required jurisdictional wetland delineation, and consult with the professional contacts as necessary to determine compliance.

3. Review any/all applicable permits from the USACOE and written evidence of compliance with General Plan Conservation Element Policy No. CO-96.

4. Monitor compliance during periodic site inspections of the construction work.

5. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-3

This measure applies to the Limited Recreation area along the American River in the Cal Expo Area Plan, and shall be added to the Parkway Plan policies applicable to the Cal Expo Area Plan. No permanent facilities are permitted in this location. Temporary facilities may not be placed within the area prior to June 1 or the recession of high water from the area (whichever is *later*), and must be removed by October 15. All trash and debris must also be cleaned from this area by October 15. Signs shall be posted at the head of the main access trails to this area from October 15 to June 1 (or later – see above) stating that the area is closed to recreation until the summer.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Parkway Plan to ensure that a policy containing the provisions above has been included.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-4

The proposed maintenance roadway shown on the northwestern margin of Bushy Lake and extending to the levee shall be removed from the Cal Expo Area Plan.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Cal Expo Area Plan to ensure that the proposed roadway has been removed.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-5

This measure applies to the Limited Recreation area in the northwestern portion of the Cal Expo Area Plan. Up to two piers may be placed within the marsh margins, but all other development or fill within the marsh margins is prohibited. The piers shall extend no more than 10 feet into the marsh, and shall be no wider than the minimum required for ADA access. If Mitigation Measure LU-3 is adopted, this Measure no longer applies.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for projects in the area protected by the measure, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-6

This Measure applies to the expanded Developed Recreation area in the Woodlake Area Plan (the "Woodlake Gateway"). No more than 10% of the native trees of 19" dbh or greater in this location may be removed, and no more than 5 acres of riparian habitat area may be removed. Mitigation Measure BR-9 applies to any removal of riparian habitat, and Mitigation Measure BR-12 shall apply to all native trees that will not be removed.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for projects in the Woodlake Gateway area, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-7

This measure applies to the Limited Recreation area in the northwestern portion of the Cal Expo Area Plan. The removal of any native tree of 19" dbh or greater in this location is prohibited, and no more than 0.10 acres of riparian habitat area may be removed. Mitigation Measure BR-9 applies to any removal of riparian habitat, and Mitigation Measure BR-12 shall apply to all native trees that will not be removed. If Mitigation Measure LU-3 is adopted, this Measure no longer applies.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for projects in the area protected by the measure, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-8

This measure applies to the SARA Park Area Plan. The proposed Developed Recreation designation on the eastern side of the Area Plan shall be dropped from the Project and the existing designations in this location shall be retained.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the SARA Park Area Plan to ensure that the measure has been implemented.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-9

To mitigate riparian woodland and scrub habitat removal, an equivalent amount of habitat removed shall be restored elsewhere in the American River Parkway. Mitigation may also be achieved by invasive plant removal activities in a riparian area, but in this case the invasive plant removal area must be twice the size of the area impacted by the project. Preference shall be given to complying with this mitigation by passive restoration activities consisting of blocking off and restoring unauthorized/undesignated roads or trails within the Parkway (if the roads are within riparian habitat). Signs shall be placed at all access points to these roads and trails indicating that restoration is in progress and entry is prohibited (or similar message). This passive restoration area will take longer to replace the lost habitat, and therefore must be twice the size of the area impacted.

For active restoration mitigation, revegetation shall consist of locally native riparian plant and tree species. To ensure species diversity, a single species shall not comprise more than 50% of the total number of trees planted. Restoration activities shall commence prior to or concurrent with removal of riparian habitat and shall be monitored for three years from the date of planting. The success criteria for plant survival shall be 80 percent throughout the monitoring period. If the survival rate falls below the success criteria during the monitoring period, in-kind replacement plantings are required. Any new plantings shall be monitored for a further three years. Prior to commencement of restoration activities, a planting plan shall be submitted to and approved by the Department of Environmental Review and Assessment. The planting plan shall include plant species, planting locations, spacing, maintenance provisions, monitoring requirements, success criteria and plant replacement provisions should a plant die within the monitoring period.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Prior to start of construction submit the required Planting Plan to the Department of Environmental Review and Assessment for review and approval.

3. Prior to the start of construction, submit evidence that planting has occurred.

4. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Planting Plan and Project Plans prior to the start of construction. Approve Plans that are determined to be in compliance with all required mitigation.

2. Prior to start of construction, verify tree plantings have occured.

3. Monitor compliance during periodic site inspections of the construction work.

4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-10

Pursuant to General Plan Policy CO-133, mitigation shall be required for oak woodland canopy removed. The mitigation site shall be within the Parkway, shall be contiguous to an existing oak woodland area, and shall be equal in size to the canopy area removed. Oak trees shall be planted in this area. Tree plantings shall be varied from a 10-foot minimum to a 40-foot maximum, averaging 25 feet apart, in a mosaic pattern that mimics existing oak woodlands. A Replacement Oak Tree Planting Plan commensurate with the description in Mitigation Measure BR-13 shall be required, except that the monitoring period shall be seven years. Where removed oak trees are part of a riparian canopy area, instead of an oak woodland canopy area, mitigation for the oak trees shall be pursued through Mitigation Measure BR-9. Any individual oak tree that is standing alone, not part of any other canopy area, shall be treated as a fragment of riparian woodland if it is within a riparian scrub environment, and shall be treated as a fragment of oak woodland if within a grassland environment.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Prior to the start of construction, submit the required Replacement Oak Tree Planting Plan to the Department of Environmental Review and Assessment for review and approval.

3. Prior to the start of construction, submit evidence that tree planting has occurred or that a bond has been posted.

4. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Replacement Oak Tree Planting Plan and Project Plans prior to the start of construction. Approve Plans that are determined to be in compliance with all required mitigation.

2. Prior to start of construction, verify tree plantings have occurred.

3. Monitor compliance during periodic site inspections of the construction work.

4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-11

In lieu of either BR-10 or BR-13, the oak tree(s) proposed for removal may be transplanted to an area outside the construction footprint. A Department of Environmental Review and Assessment ISA-certified arborist must concur that relocation of the tree(s) in question is feasible, and any transplantation shall be planned and conducted under the supervision of an ISA-certified arborist. The transplanted tree(s) shall be monitored for a period of three years. If during this time the tree(s) die, mitigation shall be required in accordance with Mitigation Measures BR-10 or BR-13.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Prior to the start of construction, submit proposal for the relocation of the oak tree(s), prepared by an ISA-certified arborist, to the Department of Environmental Review and Assessment for review and approval.

3. Prior to the start of construction, submit evidence that the tree(s) have been relocated in accordance with the approved proposal.

4. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the relocation proposal prior to the start of construction. If appropriate, approve the proposal.

2. Prior to start of construction, verify that the tree(s) have been relocated in accordance with the approved proposal.

3. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

4. Monitor compliance during periodic site inspections of the construction work.

5. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-12

With the exception of the trees removed and compensated for through Mitigation Measures above, all native trees of 6 inches dbh or larger whose trunks or driplines are within 100 feet of construction activities shall be preserved and protected as follows:

A. A circle with a radius measurement from the trunk of the protected tree to the tip of its longest limb shall constitute the dripline protection area of each tree. Limbs must not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of each tree. Removing limbs that make up the dripline does not change the protected area.

B. Chain link fencing or a similar protective barrier shall be installed one foot outside the driplines of the protected trees prior to initiation of project construction, in order to avoid damage to the trees and their root systems.

C. No signs, ropes, cables (except cables which may be installed by a certified arborist to provide limb support) or any other items shall be attached to the protected tree.

D. No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the dripline of the protected tree.

E. Any soil disturbance (scraping, grading, trenching, and excavation) is to be avoided within the dripline of the protected trees, unless specific authorization has been granted by the Environmental Coordinator. Where this is necessary and approved by the Environmental Coordinator, an ISA Certified Arborist will provide specifications for this work, including methods for root pruning, backfill specifications and irrigation management guidelines. In no case shall the impact area be greater than 20% of the protected tree dripline.

F. Before grading or excavation for footings, walls, or trenching within five feet outside the driplines of protected trees, root pruning shall be required at the limits of grading or excavation to cut roots cleanly to a depth of the excavation or 36 inches (whichever is less). Roots shall be cut by manually digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades or other approved root-pruning equipment under the supervision of an ISA Certified Arborist.

G. All underground utilities and drain or irrigation lines shall be routed outside the driplines of protected trees. If lines must encroach upon the dripline, they should be tunneled or bored under the trees.

H. If temporary haul or access roads must pass within the driplines of protected trees, a roadbed of six inches of mulch or gravel shall be created to protect

the soil. The roadbed shall be installed from outside of the dripline and while the soil is in a dry condition, if possible. The roadbed material shall be replenished as necessary to maintain a six-inch depth.

I. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use. Any pesticides used on site must be tree-safe and not easily transported by water.

J. Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of an oak tree.

K. No sprinkler or irrigation system shall be installed in such a manner that it sprays water within the dripline of the protected tree.

L. Tree pruning required for clearance during construction must be performed by an ISA Certified Arborist or Tree Worker.

M. All portions of permanent fencing that will encroach into the dripline protection area of any protected tree shall be constructed using posts set no closer than 10 feet on center. Posts shall be spaced in such a manner as to maximize the separation between the tree trunks and the posts in order to reduce impacts to the trees.

N. Trunk protection measures, per Sacramento County standards, shall be used for all protected trees where development/construction activity, including installation of fencing, occurs within 10 feet of the trunk of a tree.

O. Landscaping beneath protected oak trees may include non-plant materials such as boulders, decorative rock, wood chips, organic mulch, non-compacted decomposed granite, etc. Landscape materials shall be kept two (2) feet away from the base of the trunk. The only plant species which shall be planted within the dripline of protected oak trees are those which are tolerant of the natural semi-arid environs of the trees. Limited drip irrigation approximately twice per summer is recommended for the understory plants.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

3. Regarding the above mitigation measure items B, D, H, and I, submit written evidence to the Department of Environmental Review and Assessment from a

certified arborist that indicates that the work has been properly completed as required. Provide the name, address and phone number of the certified arborist.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-13

Replacement Planting Plans shall adhere to this measure. The removal of native oak trees shall be compensated by planting native oak trees equivalent to the dbh inches lost, based on the ratios listed below, at locations that are authorized by the Department of Environmental Review and Assessment.

Equivalent compensation based on the following ratio is required:

- one preserved native oak tree < 6 inches dbh on-site = 1 inch dbh
- one D-pot seedling (40 cubic inches or larger) = 1 inch dbh
- one 15-gallon tree = 1 inch dbh
- one 24-inch box tree = 2 inches dbh
- one 36-inch box tree = 3 inches dbh

Replacement tree planting shall be completed prior to the start of construction or a bond shall be posted by the applicant in order to provide funding for purchase, planting, irrigation, and 3-year maintenance period, should the applicant default on replacement tree mitigation. The bond shall be in an amount equal to the prevailing rate of the County Tree Preservation Fund.

Prior to the approval of Improvement Plans or building permits, a Replacement Oak Tree Planting Plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the Environmental Coordinator for approval. The Replacement Oak Tree Planting Plan(s) shall include the following minimum elements:

1. Species, size and locations of all replacement plantings and < 6-inch dbh trees to be preserved
2. Method of irrigation
3. If planting in soils with a hardpan/duripan or claypan layer, include the Sacramento County Standard Tree Planting Detail L-1, including the 10-foot deep boring hole to provide for adequate drainage
4. Planting, irrigation, and maintenance schedules;
5. Identification of the maintenance entity and a written agreement with that entity to provide care and irrigation of the trees for a 3-year establishment period, and to replace any of the replacement oak trees which do not survive during that period.
6. Designation of 20 foot root zone radius and landscaping to occur within the radius of oak trees < 6-inches dbh to be preserved on-site.

No replacement tree shall be planted within 15 feet of the driplines of existing oak trees or landmark size trees that are retained on-site, or within 15 feet of a building foundation or swimming pool excavation. The minimum spacing for replacement oak trees shall be 20 feet on-center. Examples of acceptable planting locations are publicly owned lands, common areas, and landscaped frontages (with adequate spacing). Generally

unacceptable locations are utility easements (PUE, sewer, storm drains), under overhead utility lines, private yards of single family lots (including front yards), and roadway medians.

Oak trees <6 inches dbh to be retained on-site shall have at least a 20-foot radius suitable root zone. The suitable root zone shall not have impermeable surfaces, turf/lawn, dense plantings, soil compaction, drainage conditions that create ponding, utility easements, or other overstory tree(s) within 20 feet of the tree to be preserved. Trees to be retained shall be determined to be healthy and structurally sound for future growth, by an ISA Certified Arborist subject to Department of Environmental Review and Assessment approval.

If oak tree replacement plantings are demonstrated to the satisfaction of the Environmental Coordinator to be infeasible for any or all trees removed, then compensation shall be through payment into the County Tree Preservation Fund. Payment shall be made at a rate of $325.00 per dbh inch removed but not otherwise compensated, or at the prevailing rate at the time payment into the fund is made.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Prior to the start of construction, submit the required Replacement Oak Tree Planting Plan to the Department of Environmental Review and Assessment for review and approval.

3. Prior to the start of construction, submit evidence that tree planting has occurred or that a bond has been posted.

4. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Replacement Oak Tree Planting Plan and Project Plans prior to the start of construction. Approve Plans that are determined to be in compliance with all required mitigation.

2. Prior to building permits verify tree plantings or bond has been posted.

3. Monitor compliance during periodic site inspections of the construction work.

4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-14

Prior to any development within the Limited Recreation area to the east of the Live Steamers facility, the chain link fence that begins at the eastern edge of the Live Steamers facility and extends along the riverfront trail in the Rossmoor Bar Area Plan shall be removed. An ISA-certified arborist shall be present where the removal of the fence will require excavation within the driplines of any native trees, or where portions of the fence have been absorbed into the trunks of native trees.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Submit a report prepared by the ISA-certified arborist attending the work that verifies the arborist was present at the time of work, and that describes the results of the work completed, as it relates to the health of the affected oak trees.

3. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for projects in the area cited by the measure, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Review the report provided by the arborist to verify compliance with the measure.

3. Monitor compliance during periodic site inspections of the construction work.

4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-15

Within one year after approval of the first Parkway project involving at least ¼-acre of grassland loss, a trails maintenance program shall be established whose principle purpose is to minimize off-trail behavior and convert unofficially-created trails and roads back to grassland habitat. As part of the program, all trailheads shall include informational signs discussing the damage caused by off-trail use, and a statement that any trailhead or new trail intersection that is unmarked should be treated as an unauthorized trail and reported to the Parkway authorities. When discovered, unauthorized trails and roads should be marked as a habitat restoration area, with a caution that users should not enter. The program shall include target goals for trail restoration each year (in either acres or feet of trail).

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure, and submit a copy of the program to the Department of Environmental Review and Assessment.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the submitted program for compliance with the measure.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-16

The following shall be required for any construction activities within 300 feet of marsh or other wetland habitat that includes dense stands of bulrush, cattail, or blackberry bushes: In order to mitigate potential impacts to tricolored blackbird, two pre-construction surveys of the project impact area and areas of appropriate habitat within 300 feet of the site shall be performed by a qualified biologist. The surveys shall be done during the months of March and April (one each month) the year of project construction. If tricolored blackbirds are found nesting within the survey area, project construction shall be postponed until fledging of all nestlings (about July 15). If no active nests are found during the survey, submit a written report with date and the name of biologist to the Department of Environmental Review and Assessment. Upon receiving the report, no further mitigation will be required. If construction is proposed outside the nesting season (the nesting season is March 1 – July 15), no pre-construction surveys would be required.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Submit written evidence of compliance with the above Mitigation Measure to the Department of Environmental Review and Assessment.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the submitted written evidence of compliance.
2. Consult with the California Department of Fish and Game as necessary to determine compliance.
3. Monitor compliance during periodic site inspections of the construction work.
4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-17

Any construction activity within 200 feet of the bank of the American River shall comply with the following: A focused survey for bank swallow nests shall occur between April 1 and July 1 and be conducted by a qualified biologist no less than 14 days and no more than 30 days before construction commences. If active nests are found, the applicant shall consult with the California Department of Fish and Game for appropriate avoidance measures. If no active nests are found during the focused survey, submit a written report with date and the name of biologist to the Department of Environmental Review and Assessment. Upon receiving the report, no further mitigation will be required.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Submit written evidence of compliance with the above Mitigation Measure to the Department of Environmental Review and Assessment.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the submitted written evidence of compliance.
2. Consult with the California Department of Fish and Game as necessary to determine compliance.
3. Monitor compliance during periodic site inspections of the construction work.
4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-18

If construction occurs between March 1 and September 15, pre-construction nesting surveys for raptor nesting sites shall be conducted by a qualified raptor biologist. If any active nests are located both within the Parkway and within a quarter-mile of proposed heavy equipment operations or construction activities, the project proponent shall then consult with the California Department of Fish and Game to determine the appropriate course of action to reduce potential impacts upon nesting raptors and to determine under what circumstances equipment operation and construction activities can occur.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Submit written evidence of compliance with the above Mitigation Measure to the Department of Environmental Review and Assessment.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the submitted written evidence of compliance.

2. Consult with the California Department of Fish and Game as necessary to determine compliance.

3. Monitor compliance during periodic site inspections of the construction work.

4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-19

For all migratory bird species not covered in the prior mitigation measures (including purple martin and western yellow-billed cuckoo), the following guidelines shall be followed:

A. Trees slated for removal shall either be removed during the non-nesting season (September – January), or if removed during the nesting season (February – August) the trees that are to be removed shall be surveyed by a qualified biologist and will only be removed if no nesting birds are found.

B. Pre-construction surveys of all potentially active nesting trees within 200 feet of the construction area shall be conducted by a qualified biologist no less than 14 days and no more than 30 days before construction commences. If active nests are found in the vicinity of the project site, non-disturbance buffers must be established and maintained based on species-specific protocols approved by the California Department of Fish and Game.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Submit written evidence of compliance with the above Mitigation Measure to the Department of Environmental Review and Assessment.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the submitted written evidence of compliance.
2. Consult with the California Department of Fish and Game as necessary to determine compliance.
3. Monitor compliance during periodic site inspections of the construction work.
4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-20

The date, time, and location of any sighting of the American badger shall be reported to the California Department of Fish and Game. This mitigation shall be satisfied by either:

A. An administrative policy (not a Parkway Policy) shall be adopted that requires all Parkway employees and volunteers to be notified about the above requirement, and to be given basic information about how to identify the species. A copy of the policy shall be provided to the Department of Environmental Review and Assessment within 6 months of the adoption of the Parkway Plan.

B. Some other measure suggested by the Parkway Manager to comply with the above that meets with the satisfaction of the Department of Environmental Review and Assessment. This other measure must be implemented within 6 months of the adoption of the Parkway Plan.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure, and submit a copy of the policy (in the case of item A) or a proposal to comply with the measure (item B).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the submitted documentation for compliance with the measure, and approve the submitted proposal, as appropriate and necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-21

In all vernal pools, presence of listed vernal pool branchiopods shall be assumed unless determinate surveys that comply with Fish and Wildlife protocol conclude that the species is absent. In order to reduce impacts to listed vernal pool branchiopods the applicant shall comply with one of the following:

A. *Avoid impacts to listed vernal pool branchiopods.* Establish buffers with fencing around the perimeter of branchiopod habitat to be preserved. Fencing shall be installed as far from the shrimp habitat as possible (to be determined by the Department of Environmental Review and Assessment using US Fish and Wildlife Service guidelines). No project activity shall occur within fenced area(s) without prior approval by Department of Environmental Review and Assessment staff.

B. *Compensate for habitat removed (on-site).* An equivalent amount of vernal pool habitat removed shall be created within the Parkway. Creation shall be in accordance with Fish and Wildlife guidelines.

C. *Compensate for habitat removed (off-site).* If compensation within the Parkway is demonstrated to the satisfaction of the Department of Environmental Review and Assessment to be infeasible, off-site mitigation in accordance with Fish and Wildlife guidelines shall be permitted. An equivalent amount of vernal pool habitat removed shall be created, and <u>in addition</u> an equivalent amount shall be preserved.

<u>Implementation and Notification (Action by Project Applicant):</u>

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it as necessary into any/all Preliminary Grading Plans, Improvement Plans and Building/Development Plans which are submitted to the Department of County Engineering and/or the Planning Department for this project, and any/all revisions to those Plans which are subsequently submitted.

3. Prior to the start of construction less than 250-feet from the on-site vernal pool habitat, submit special status species surveys (unless presence is being assumed) and jurisdictional wetland delineations verified by the U.S. Corps of Engineers to the Department of Environmental Review and Assessment. Include the name, address and phone number of the qualified professionals that prepared the species survey and wetland delineation. Also submit to the Department of Environmental Review and Assessment a copy of any/all permit(s) from the USACOE and written evidence of compliance with General Plan Conservation Element Policy No. CO-96, as necessary.

4. Notify the Department of Environmental Review and Assessment no later than 48 hours prior to the start of each phase of construction work (including clearing and grubbing) and no later than 24 hours after its completion.

5. Notify the Department of Environmental Review and Assessment no later than 48 hours prior to any/all Final Inspection(s) by the Department of County Engineering.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the approved Plans pursuant to item #1 in the Standard Provisions section of this Mitigation Monitoring and Reporting Program.

2. Review any special status species surveys and jurisdictional wetland delineations, and consult with the professional contacts as necessary to determine compliance.

3. Review any/all applicable permits from the USACOE and written evidence of compliance with General Plan Conservation Element Policy No. CO-96.

4. Monitor compliance during periodic site inspections of the construction work.

5. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-22

Any construction project within 100 feet of an elderberry plant with at least one stem of a one inch diameter shall adhere to the following measures, consistent with United States Fish and Wildlife Service guidelines:

A. Unless a permit for removal is obtained from the Fish and Wildlife Service, temporary construction fencing and flagging shall be installed at least 100 feet outside the edge of the driplines of the elderberry plants. In areas where encroachment on the 100-foot buffer has been approved by Fish and Wildlife, provide a minimum setback of at least 20 feet from the dripline of each elderberry plant and provide documentation of Fish and Wildlife approval of the reduced setback. Contractors and work crews shall be briefed on the need to avoid damaging the elderberry plants, the status of the beetle, and the possible penalties for non-compliance with these requirements. Signs shall be erected every 50 feet along the edge of the avoidance area with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.

B. Prior to construction within the 100-foot buffer area (or lesser buffer, as approved by Fish and Wildlife) established around the elderberry plants implement one of the following methods (or a combination of the following two methods) to reduce impacts to the Valley Elderberry Longhorn Beetle to a less than significant level:

    a. Elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level shall be transplanted to a conservation area approved by Fish and Wildlife. The project applicant shall consult with Fish and Wildlife on all transplantation activities and obtain all applicable permits.

    b. The project applicant shall compensate for the loss of elderberry plants on the site to the satisfaction of Fish and Wildlife and shall obtain any/all applicable permit(s) from the U.S. Army Corps of Engineers and Fish and Wildlife.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Submit written evidence of compliance with the above Mitigation Measure to the Department of Environmental Review and Assessment.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the submitted written evidence of compliance.
2. Consult with the United States Fish and Wildlife Service as necessary to determine compliance.
3. Monitor compliance during periodic site inspections of the construction work.
4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-23

To avoid potential taking of northwestern pond turtle, for all construction projects involving work in or within 300 feet of a linear waterway (creek, slough, etc), a qualified biologist shall inform all construction personnel that turtles may occur in the area. A description of their natural history and identifying characteristics shall also be provided. The foreperson(s) shall be further instructed of the proper techniques for handling and relocating turtles if relocation is required. The biologist shall distribute reporting forms to all foreperson(s) to document observances or the relocation of any turtles.

If a turtle of any species enters an active construction area, or is in imminent danger, the foreperson shall carefully remove the turtle to a point at least 300 feet upstream of the project limits within the leveed floodway. Upon relocation the foreperson shall immediately notify the Sacramento County Department of Environmental Review and Assessment of the action taken and provide a completed reporting form to the Department within 48 hours of the relocation. Turtles found outside the active or proposed construction areas shall be left unharrassed, uninjured and alive. All observances of turtles within the construction limits shall be immediately reported via telephone to the Department of Environmental Review and Assessment (874-7914) and subsequently documented on a reporting form.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Submit written evidence of compliance with the above Mitigation Measure to the Department of Environmental Review and Assessment.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the submitted written evidence of compliance.

2. Consult with the California Department of Fish and Game as necessary to determine compliance.

3. Monitor compliance during periodic site inspections of the construction work.

4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-24

In order to avoid impacts to the steelhead, chinook salmon and Sacramento splittail, the following measures must be implemented for all work within the Ordinary High Water Mark of the American River:

A. In-channel construction and riparian revegetation work on the main channel of the American River during the peak migration period for all three species (November through May, or specific periods that are specified in permits issued for the project by the National Marine Fisheries Service, U.S. Fish and Wildlife Service and/or the California Department of Fish and Game) shall be prohibited.

B. Erosion control measures that prevent soil and sediment from entering the river shall be installed, monitored for effectiveness and maintained throughout construction operations.

C. Refueling of construction equipment and vehicles and storage of fuel shall not occur within the leveed floodway.

D. Truck and concrete equipment wash-down shall not occur within the leveed floodway.

E. Equipment and vehicles operated within the leveed floodway shall be checked and maintained daily to prevent leaks of fuels, lubricants or other fluids into the river.

F. Litter and construction debris shall be removed from below the Ordinary High Water Mark daily, and disposed of at an appropriate site.

G. Comply with water pollution protection provisions and conditions established by the Department of Fish and Game and all regulatory authorities with jurisdiction over the project.

H. An erosion control and water quality protection plan shall be prepared and implemented that will be subject to the review and approval of the County Department of Water Resources.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Submit written evidence of compliance with the above Mitigation Measure to the Department of Environmental Review and Assessment.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the submitted written evidence of compliance.

2. Consult with the California Department of Fish and Game or the United States Fish and Wildlife Service, as necessary to determine compliance.

3. Monitor compliance during periodic site inspections of the construction work.

4. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-25

Rare plant surveys will be required in any wetland, marsh, or stream habitats prior to any grading, grubbing, or excavation within 250 feet of the wetland margin. The rare plant surveyor shall have:

A. experience as a botanical field investigator;

B. taxonomic experience and a knowledge of plant ecology (the surveyor should have some college coursework in plant taxonomy and ecology, and be a biological professional), and

C. familiarity with the local flora and potential rare plants in the habitats to be surveyed.

The surveys shall be conducted when the rare plants at the site will be easiest to identify (i.e. flowering stage), and when the plants reach that stage of maturity. A minimum of three site visits shall be required, during the plants' flowering period in order to determine absence. Each site visit must be no less than 7 days apart.

Submit a written report to the Department of Environmental Review and Assessment. The survey report should include a brief description of the vegetation, survey results, photographs, time spent surveying, date of surveys, a map showing the location of the survey route and any rare plant populations and copies of any rare plant occurrence forms. Notify Fish and Game and Fish and Wildlife if species are found, and apply for "take" authorization (state law section 2081 of the Fish and Game Code and federal Endangered Species Act) prior construction. Priority shall be given to transplanting individual plants to a different surface water in the Parkway, unless it can be demonstrated to the satisfaction of the Department of Environmental Review and Assessment that transplantation is infeasible.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Prior to the start of construction, submit written evidence that rare plant survey has been performed to the Department of Environmental Review and Assessment for review and approval.

3. If listed species are found provide written evidence of consultation with the California Department of Fish and Game and the United States Fish and Wildlife Service.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the rare plant survey report and project plans prior to the start of construction. Approve Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-26

Parkway Plan Policy 5.8 shall be revised to read as follows: Overnight camping may be permitted in association with the programs at an interpretive center with permission from the Parkway Manager, so long as camping is not within a restoration area and natural resources are not degraded.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review Parkway Plan Policy 5.8 to ensure that the measure has been implemented.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE BR-27

Use of bicycles on the unpaved maintenance roads shall be prohibited when the roads are saturated with water. Implementation of this measure requires either:

A. Signs posted at all access points to the maintenance roads stating that bicycles are not permitted on the roads when the roads are wet from recent rain.

B. Maintenance roads are closed to bicycles at the onset of the rainy season and remain closed until the trails dry out in the spring, as determined by the Parkway Manager. During this period, signs are posted at all access points to the maintenance roads informing bicyclists of the closure.

Whichever option is chosen, the appropriate language shall be incorporated into Parkway Policy 5.17.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review Parkway Plan Policy 5.17 to ensure that the measure has been implemented.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE HY-1

All new construction projects within the Parkway shall incorporate the design components within the latest version of the *Sacramento County Guidance Manual for Development of Erosion and Sediment Control Plans*, even if a grading permit is not required for the project. No grading shall be permitted from October 1 – April 30, unless the grading is associated with an emergency project or it can be demonstrated to the Department of Environmental Review and Assessment that there is an environmental benefit to wet-season construction.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE HY-2

All new construction or redevelopment of facilities within the Parkway shall incorporate the design components within the latest version of the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*, unless the Department of Environmental Review and Assessment determines that the project does not have the potential to release post-construction pollutants (e.g. signage). This shall include all new roads and trails, which shall be designed to minimize transport of sediment from the road or trail surface into nearby water bodies.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE AQ-1

All projects shall comply with the following mitigation if active project grading in any one day falls within the acreage ranges below. This mitigation shall also apply if multiple projects occur in the Parkway within 0.25 miles of each other, and the aggregate total active grading for those projects fall within the acreage ranges below. This mitigation may be modified if current guidance from the Sacramento Metropolitan Air Quality Management District varies from the below.

A. 5.1 – 8 acres: Water exposed soil twice daily and maintain two feet of freeboard space on haul trucks.

B. 8.1 – 12 acres: Water exposed soil and soil piles three times daily and maintain two feet of freeboard space on haul trucks.

C. 12.1 – 15 acres: Keep soil moist at all times, maintain two feet of freeboard space on haul trucks, and use emulsified diesel or diesel catalysts on applicable heavy duty diesel construction equipment.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE AQ-2

All future construction projects shall include an ozone precursor analysis. If the analysis results indicate that the project will generate ozone precursors that exceed the current Sacramento Metropolitan Air Quality Management District thresholds, this mitigation shall apply. This mitigation shall also apply if multiple projects occur in the Parkway within 0.25 miles of each other, and the aggregate total emissions for those projects exceed thresholds. This mitigation may be modified if current guidance from the Sacramento Metropolitan Air Quality Management District varies from the below.

Category 1: Reducing NOx emissions from off-road diesel powered equipment

The project shall provide a plan, for approval by the lead agency and AQMD, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction (acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.) compared to the most recent CARB fleet average at time of construction; and

The project representative shall submit to the lead agency and AQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide AQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

and *Category 2: Controlling visible emissions from off-road diesel powered equipment*

The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately, and the lead agency and AQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The AQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supersede other AQMD or state rules or regulations.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE CR-1

Retain all important cultural features in the design of all future Parkway projects, unless doing so is proven to be infeasible to the satisfaction of the Department of Environmental Review and Assessment.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE CR-2

Prior to start of construction, all proposed facilities projects within the Parkway must provide documentation that there are no cultural resources present within the construction area (including staging areas and similar). A qualified cultural resources professional shall perform a preliminary analysis of the construction area, to determine the relative sensitivity of the construction area. This need not include a formal cultural resources survey if the cultural resources investigator determines a finding of negative presence can be made from previous surveys or otherwise. If cultural resources are considered not to be present, Mitigation Measure CR-4 will still apply. If additional work is required, Mitigation Measure CR-3 and CR-4 shall apply.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE CR-3

All projects that have been determined sensitive for known and/or unknown cultural resources within the construction area (which includes staging areas and similar) shall adhere to one or a combination of the following, to the satisfaction of the Department of Environmental Review and Assessment:

A. Conduct an archaeological/historical survey and assessment, by a qualified professional archaeologist, of the area of direct impact. If the project area includes known resources, than the survey will assess the condition of the resource.

B. Based on this review and, as appropriate, a subsurface testing program will be developed and implemented to determine the significance of the resource.

C. Following the field investigations, a technical report describing the evaluation shall be prepared to the satisfaction of the Department of Environmental Review and Assessment.

D. If based on the results of the field investigations the resource is not considered significant or important, no additional work would be required for that resource, and all construction related impacts would be considered less than significant.

E. If based on the results of the field investigations resources were identified as being significant the following mitigation would apply:

   a. Total Avoidance: Redesign the proposed project as to preserve and protect all significant cultural resources. This would reduce impacts to less than significant levels.

   b. Or, if a redesign is determined infeasible by the Department of Environmental Review and Assessment, then,

   c. Data Recovery: After all design options have been exhausted that would result in the preservation of significant resources, institute a data recovery program to the satisfaction of the Department of Environmental Review and Assessment. Impacts to the resource would remain significant.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE CR-4

Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains be encountered during any development activities, work shall be suspended and the Department of Environmental Review and Assessment (DERA) shall be immediately notified at (916) 874-7914.

At that time, the DERA will coordinate any necessary investigation of the find with appropriate specialists as needed. The project applicant shall be required to implement any mitigation deemed necessary for the protection of the cultural resources. In addition, pursuant to Section 5097.97 of the State Public Resources Code and Section 7050.5 of the State Health and Safety Code, in the event of the discovery of human remains, all work is to stop and the County Coroner shall be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE CR-5

Design interpretive uses so that locational data of sensitive cultural resources is not disclosed to the general public. If locational data of cultural resources is crucial to an interpretive use than the following shall apply:

A. Limit accessibility to envisioned cultural interpretive uses by requiring docent led tours or restricting access through fencing or elevated wooden walkways.

B. Consult with qualified cultural resources staff, local Native Americans, and historical societies during the design phases in order to create interpretive uses that are appropriate for specific cultural resources sites.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

MITIGATION MEASURE CR-6

The area utilized for Soil Born Farms and potential interpretive area, and all associated construction, shall be located outside the limits of all known cultural resources sites.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for projects in the area identified by the measure, and submit one copy to the Department of Environmental Review and Assessment for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Department of Environmental Review and Assessment):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Department of Environmental Review and Assessment

Signature: _____ **Date:** _____

Appendix IN-2_NOP

COUNTY OF SACRAMENTO
OFFICE OF PLANNING AND ENVIRONMENTAL REVIEW
NOTICE OF PREPARATION

4/8/2021

TO: ALL INTERESTED PARTIES

SUBJECT: NOTICE OF PREPARATION OF A DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT FOR AMERICAN RIVER PARKWAY NATURAL RESOURCES MANAGEMENT PLAN (PLER2019-00073)

Sacramento County will be the CEQA Lead Agency for preparation of a Supplemental Environmental Impact Report (SEIR) for a project known as American River Parkway Natural Resources Management Plan (NRMP). The SEIR will supplement the Final EIR, certified in September 2008, for the American River Parkway Plan Update (County Control No. 03-GPB-0332; State Clearinghouse No. 2007032125).

A SEIR is the appropriate CEQA document for the proposed project (i.e. NRMP) pursuant to CEQA (§15163). Only minor additions or changes are necessary to make the previous EIR (County Control No. 03-GPB-0332) adequately apply to the project. The SEIR will contain the information necessary to make the previous EIR adequate for the approval of the NRMP by the CEQA Lead and Responsible Agencies.

This Notice of Preparation has been sent to responsible and trustee agencies and involved federal agencies pursuant to §15082 of the CEQA Guidelines. Agencies should comment on the scope and content of the environmental information that is germane to the agencies' statutory responsibilities in connection with the proposed project. Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice.

The project description, location, and the probable environmental effects are contained in the attached materials and may be viewed online at:

https://planningdocuments.saccounty.net/ViewProjectDetails.aspx?ControlNum=PLER2019-00073

The draft NRMP can be viewed online at:

https://regionalparks.saccounty.net/Parks/Pages/NaturalResourcesManagement.aspx

The Final EIR for the American River Parkway Plan Update can be viewed online at:

https://planningdocuments.saccounty.net/ViewProjectDetails.aspx?ControlNum=2003-0332

Please send your Agency's response to this Notice to:

Joelle Inman, Environmental Coordinator
Office of Planning and Environmental Review
827 7th Street, Room 225, Sacramento, CA 95814

or via e-mail at: CEQA@saccounty.net.

Your response should include the name of a contact person in your agency.

Agencies with specific questions about the project should contact Josh Greetan, Project Manager, at greetanj@saccounty.net for further information.

PROJECT TITLE: AMERICAN RIVER PARKWAY NATURAL RESOURCES MANAGEMENT PLAN

Owner: Various

Applicant:

Sacramento County Department of Regional Parks
10361 Rockingham Drive
Sacramento, CA 95827

LOCATION:

The American River Parkway (Parkway) is an open space greenbelt extending approximately 29 miles and covers approximately 7,000 acres. The Sacramento County Department of Regional Parks (Regional Parks) manages lands on the lower 23 miles of the Parkway from the Hazel Avenue Bridge to the American River confluence with the Sacramento River, approximately 5,000 acres (Plate NOP-1). Several urban communities are located along the edges of the Parkway, including the City of Sacramento, the City of Rancho Cordova, and portions of unincorporated Sacramento County, including the communities of Arden-Arcade, Carmichael and Fair Oaks.

BACKGROUND:

The American River Parkway Plan (Parkway Plan) is the guiding policy document that directs management decisions within the Parkway. The Parkway Plan has been the major guiding document for the implementation of the Wild and Scenic River designation. The County of Sacramento has the principal responsibility for administration and management of the Parkway as guided by the Parkway Plan.

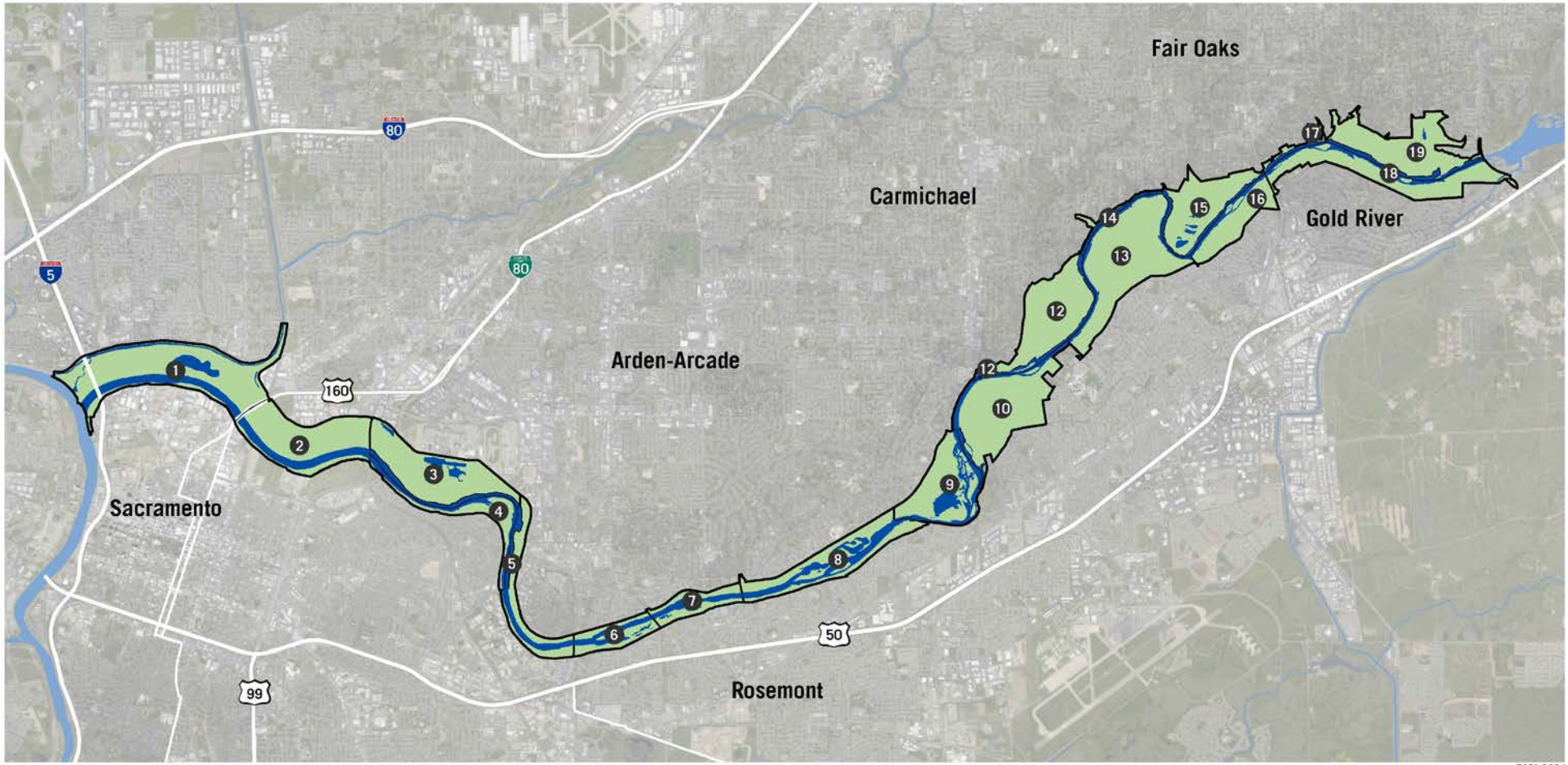
The purpose of the Parkway Plan is to provide direction for land use decisions affecting the Parkway. The Parkway Plan specifically addresses the preservation, use, development, and administration of the Parkway. The Parkway Plan outlines specific policies for the overall Parkway, as well as area-specific (e.g., SARA Park, Arden Bar, etc.) policies regarding authorized use of the Parkway and its resources. These include limits on development and protection of natural resources.

The NRMP advances management strategies and measures contained in the Parkway Plan. In 2008, Regional Parks began a process to develop a Natural Resource Management Plan (NRMP) for the Parkway. The original NRMP Stakeholder Committee (Committee) worked with Regional Parks from 2008 to 2010. The Committee was charged with gathering and evaluating natural resource data in order to provide recommendations to both protect and to improve the health of the Parkway's ecosystems and natural values. The Committee accomplished many important goals including baseline ecosystem mapping of the Parkway. The baseline mapping delineated the Parkway by ecosystem types, with an evaluation of current health, trends and threats in each area.

The Committee also identified high value resources as well as degraded areas that could be improved. The Committee made preliminary recommendations for Parkway management, including identifying opportunities for protecting high value resources and opportunities for creating desired habitat in degraded areas.

In 2014, Regional Parks reinitiated the NRMP effort with the goal of creating a document that would be aligned with the goals and policies of the 2008 American River Parkway Plan. A new Stakeholder Committee convened in Spring/Summer of 2015 to develop a set of recommended draft NRMP specifications to provide the guidelines and parameters of a Scope of Work. The Stakeholder Committee developed specifications and Sacramento County Regional Parks staff contributed supplementary specifications to develop the Scope of Work and current draft NRMP.

Plate NOP-1: Location Map of 19 Areas in the NRMP



AREAS							
1	Discovery Park	5	Campus Commons	10	River Bend Park	15	Sacramento Bar
2	Woodlake	6	Howe Avenue	11	Sarah Court Access	16	Lower Sunrise
3	Cal Expo	7	Watt Avenue	12	Ancil Hoffman County Park	17	Sunrise Bluffs
4	Paradise Beach	8	SARA Park	13	Rossmorr Bar	18	Upper Sunrise
		9	Arden Bar	14	San Juan Bluffs	19	Sailor Bar

Figure 3-1
American River Parkway

PROJECT DESCRIPTION:

The NRMP is intended to provide relevant and defensible information to the Parkway Manager for making informed decisions for managing, maintaining, and enhancing Parkway resources. In general, the NRMP shall provide a clear understanding of existing Parkway resources, the effects of disturbances such as flood, fire, invasive species and human impacts, as well as opportunities for protections and enhancements. It should advise resource management for promoting healthy ecosystems and resource protections, while balancing concurrent Parkway goals of flood control, recreational opportunities and public safety.

The purpose of the NRMP is to establish resource management guidelines to minimize the impact of human uses on the Parkway and on the environment. The NRMP includes goals and objectives designed to maintain natural communities located within the Parkway and identifies potential management actions to accomplish each goal and objective. The management categories are described below:

- Preservation: Existing mitigation sites that require protection in perpetuity (e.g. weed management, limited disturbance).

- Conservation: Existing conditions are considered to generally meet desired conditions, but have been degraded to varying degrees (e.g., fire, illegal camping, social trails, degraded understory, etc.) and should be improved to meet goals. The need for ongoing rehabilitation of degraded areas is expected.

- Naturalization: Modifying areas that were substantially altered in the past in order to improve existing natural resource conditions or otherwise modify to meet the management objectives of the Parkway Plan, NRMP, and Wild and Scenic Rivers Act policies. This applies to areas previously altered and outcomes are generally native habitat types that would typically be expected to occur in the Parkway.

- Rehabilitation Overlay: Applies to any of the aforementioned categories that are degraded or damaged in the future and require action to improve their condition. Rehabilitation is an overlay of all other categories and can happen anywhere in the Parkway, just as all areas in the Parkway are subject to degradation or damage.

In order to present management actions in the Parkway, an 11”x17” area plan map is provided in the NRMP for each of the 19 areas. Each map set shows potential resource management actions and management categories as described below.

DISCOVERY PARK

Potential Resource Management Actions (reference Plate NOP-3):

1. Rehabilitate homeless encampments
2. Establish low-growing native vegetation under power lines
3. Purchase and naturalize Urrutia property
4. Establish native riparian species / remove non-natives
5. Expand wildlife connectivity opportunities
6. Address and minimize impacts associated with proposed bridge crossing
7. Purchase and naturalize Riverdale mobile home park
8. Improve habitat and public access at Camp Pollock
9. Remediate social trail impacts to promote native vegetation growth
10. Remove urban rubble/redesign bank

11. Maintain tall tree overstory in parking and picnic area for nesting birds
12. Increase tall tree overstory in burned areas

WOODLAKE

Potential Resource Management Actions (reference Plate NOP-4):

1. Lower floodplain
2. Implement USACE ecosystem restoration project
3. Establish low-growing native vegetation under power lines
4. Rehabilitate homeless encampment impacts
5. Expand riparian corridor
6. Expand wildlife connectivity opportunities
7. Suppress fire in mature vegetation stands
8. Remediate social trail impacts to promote native vegetation growth
9. Maintain flow through drainage slough

CAL EXPO

Potential Resource Management Actions (reference Plate NOP-5):

1. Lower floodplain
2. Establish low-growing native vegetation under power lines
3. Rehabilitate homeless encampment impacts
4. Implement USACE ecosystem restoration project
5. Remediate social trail impacts to promote native vegetation growth
6. Manage invasive vegetation
7. Improve wildlife connectivity opportunities
8. Suppress fires and design fuel breaks in mature vegetation
9. Continue CSUS research and habitat development
10. Increase tall tree overstory in burned areas

Paradise Beach

Potential Resource Management Actions (reference Plate NOP-6):

1. Lower floodplain
2. Rehabilitate homeless encampment impacts
3. Remediate social trail impacts to promote native vegetation growth
4. Suppress fires in mature vegetation
5. Manage invasive vegetation

Campus Commons

Potential Resource Management Actions (reference Plate NOP-7):

1. Lower floodplain
2. Rehabilitate homeless encampment impacts
3. Establish low-growing native vegetation under power lines
4. Improve floodplain connectivity to reduce fish stranding
5. Manage invasive vegetation
6. Suppress fires in mature vegetation stands
7. Remediate social trail impacts to promote native vegetation growth

Howe Avenue

Potential Resource Management Actions (reference Plate NOP-8):

1. Lower floodplain
2. Rehabilitate homeless encampment impacts
3. Establish low-growing native vegetation under power lines
4. Suppress fires in mature vegetation stands
5. Remediate social trail impacts to promote native vegetation growth
6. Manage invasive vegetation

Watt Avenue

Potential Resource Management Actions (reference Plate NOP-9):

1. Lower floodplain
2. Rehabilitate homeless encampment impacts
3. Establish low-growing native vegetation under power lines
4. Manage invasive vegetation
5. Suppress fires in mature vegetation stands
6. Remediate social trail impacts to promote native vegetation growth

SARA Park

Potential Resource Management Actions (reference Plate NOP-10):

1. Lower floodplain
2. Rehabilitate homeless encampment impacts
3. Manage invasive vegetation
4. Establish valley oak riparian woodland
5. Maintain flow through drainage slough
6. Suppress fire in mature vegetation stands
7. Remediate social trail impacts to promote native vegetation growth

Arden Bar

Potential Resource Management Actions (reference Plate NOP-11):

1. Lower floodplain
2. Maintain spawning riffle
3. Manage invasive vegetation
4. Develop naturalization plan for Arden Pond
5. Improve native riparian and oak woodland communities
6. Remediate social trail impacts to promote native vegetation growth

River Bend Park

Potential Resource Management Actions (reference Plate NOP-12):

1. Lower floodplain
2. Improve spawning riffle
3. Manage invasive vegetation
4. Develop conceptual naturalization plan
5. Remediate social trail impacts to promote native vegetation growth

Sarah Court Access

Potential Resource Management Actions (reference Plate NOP-13):

1. Improve degraded riparian habitats

Ancil Hoffman County Park

Potential Resource Management Actions (reference Plate NOP-14):

1. Lower floodplain
2. Improve spawning riffle
3. Enhance native woodlands and grasslands
4. Improve habitat values on Carmichael Creek
5. Support interpretive uses at Effie Yeaw Nature Center
6. Manage invasive vegetation
7. Remediate social trail impacts to promote native vegetation growth
8. Improve degraded riparian habitats

Rossmoor Bar

Potential Resource Management Actions (reference Plate NOP-15):

1. Improve spawning riffle
2. Protect recently planted vegetation
3. Manage invasive vegetation
4. Improve degraded riparian habitats
5. Enhance woodland savanna and/or grasslands
6. Maintain historic mine tailings for interpretive purposes
7. Re-contour and improve substrate to support woody vegetation
8. Improve fallow agricultural areas with woodland savanna or grassland
9. Remediate social trail impacts to promote native vegetation growth

San Juan Bluffs

Potential Resource Management Actions (reference Plate NOP-16):

1. Manage invasive vegetation
2. Monitor bluff erosion

Sacramento Bar

Potential Resource Management Actions (reference Plate NOP-17):

1. Lower floodplain
2. Improve spawning riffle
3. Maintain spawning riffle
4. Maintain lowered floodplain
5. Remediate social trail impacts and promote native vegetation growth
6. Improve degraded riparian habitats
7. Manage invasive vegetation
8. Develop conceptual naturalization plan for open mining pits/ponds

Lower Sunrise

Potential Resource Management Actions (reference Plate NOP-18):

1. Lower floodplain
2. Maintain spawning riffle
3. Maintain lowered floodplain
4. Manage invasive vegetation
5. Enhance woodland savanna and/or grasslands

Sunrise Bluffs

Potential Resource Management Actions (reference Plate NOP-19):

1. Lower floodplain
2. Improve spawning riffle
3. Manage invasive vegetation
4. Improve degraded riparian habitat
5. Monitor bluff erosion

Upper Sunrise

Potential Resource Management Actions (reference Plate NOP-20):

1. Lower floodplain
2. Improve spawning riffle
3. Maintain spawning riffle
4. Maintain lowered floodplain
5. Manage invasive vegetation
6. Remediate social trail impacts and promote native vegetation growth
7. Develop conceptual naturalization plan for areas altered by mining

Sailor Bar

Potential Resource Management Actions (reference Plate NOP-21):

1. Lower floodplain
2. Maintain spawning riffle
3. Maintain lowered floodplain
4. Manage invasive vegetation
5. Maintain water levels at Sailor Bar-Pond for wildlife habitat
6. Improve degraded riparian habitats
7. Expand oak habitats in conservation and naturalization areas
8. Re-contour mined areas to support oak habitats
9. Lower elevation of relict pools / remove gunite
10. Remediate social trail impacts and promote native vegetation growth

PROJECT OBJECTIVE:

The objective of the NRMP is to provide relevant and defensible information to the Parkway Manager for making informed decisions for managing, maintaining, and enhancing Parkway resources.

The NRMP's goal areas, goals, objectives, and performance measures (PM) are listed below and follow the framework shown in Table NOP-1. There are objectives tied to each goal and performance measures (PM) tied to the objectives. The objectives follow the SMART (**S**pecific, **M**easurable, **A**ttainable, **R**elevant, **T**ime-Oriented) framework, the components of which are defined as follows:

- Specific: Objectives are linked to a goal or strategic plan and answer the questions, “Who?” and, “What?”

- Measurable: The success toward meeting the objective can be measured. Objectives answer the question, “How?”

- Attainable: Objectives are realistic and can be achieved in a specific amount of time.

- Relevant: Objectives are aligned with current tasks and projects and focus in one defined area. The objectives include the expected result.

- Time Oriented: Objectives have a clearly defined time-frame including a target or deadline date.

SMART objectives clarify expectations and provide the means to determine if the objective is successfully completed.

Specifically, where feasible, success criteria will be established for individual projects to enable monitoring of each project’s success over a 5-year period. After 5 years, the success of the projects will be evaluated to determine if modification of the NRMP’s goals and objectives, and projects is needed to improve resource protection, enhancement, and restoration within the Parkway.

As such, completion dates for the objectives are placed into two categories: (1) 1-2 years after NRMP completion; and (2) 3-5 years after completion. After five years, the NRMP will undergo a comprehensive review.

Plate NOP-2 depicts the five goal areas and the objectives framework. Table NOP-1 shows goals within each of the five goal areas, objectives and performance measures, lead and supporting roles, potential funding sources, and estimated timing for completion.

Plate NOP-2: NRMP Goals and Objectives Framework

Table NOP-1: Goals & Objectives/Performance Measures

GOAL AREA	GOAL	OBJECTIVES/PERFORMANCE MEASURES	LEAD	SUPPORT	FUNDING	COMPLETION DATE
GOAL AREA 1 Biological Resources	1.1 Assess biological resources within the Parkway.	1.1a Completion of periodic updates to vegetation community maps. 1.1b Completion of shaded riverine aquatic habitat map. 1.1c Completion of systematic sensitive species surveys. 1.1d Completion of systematic invasive species surveys. 1.1e Completion of periodic updates to wildfire and homeless encampment maps.	Regional Parks	Agencies and entities with an interest in conducting habitat/ ecosystem restoration, mitigation or construction projects	WCB conservation programs, Water Forum, Regional Parks, CNPS, Project proponents, State/federal grants	Within two years of NRMP completion
	1.2 Preserve high-quality native habitats.	1.2a Preservation of 176 ac of high-quality native riparian vegetation communities. 1.2b Preservation of 17 ac of high-quality native grassland vegetation communities. 1.2c Preservation of 54 ac of high-quality native woodland vegetation communities. 1.2d Preservation of 14 ac of high-quality native elderberry vegetation communities.	Regional Parks	NPOs, State agencies, Project proponents	CDFA, WCB conservation programs, Regional Parks, Mitigation projects, Other applicable grant programs	3-5 years
	1.3 Conserve high-quality native habitats that require improvement.	1.3a Conservation of 1184 ac of high-quality native riparian vegetation communities. 1.3b Conservation of 99 ac of high-quality native grassland vegetation communities. 1.3c Conservation of 578 ac of high-quality native woodland vegetation communities. 1.3d Conservation of 43 ac of high-quality native elderberry vegetation communities.	Regional Parks	USACE, Local jurisdictions, Landowners (e.g., Cal Expo, State Lands Commission)	USACE, WCB conservation programs, CSU Sacramento or UC Davis, Landowner general fund, Local jurisdiction general fund, Fire suppression authorities, Applicable state grants	3-5 years
	1.4 Naturalize habitats that have been altered by human activity.	1.4a Naturalization of 118 ac (3-5 years) and 64 ac (6-10 years) of native riparian vegetation communities (total = 182 acres).[1] 1.4b Naturalization of 2 ac (3-5 years) and 50 ac (6-10 years) of native grassland vegetation communities (total = 52 acres).[1] 1.4c Naturalization of 13 ac (3-5 years) and 111 ac (6-10 years) of native woodland vegetation communities (total = 124 acres).[1] 1.4d Naturalization of 33 ac (3-5 years) of native elderberry vegetation communities.[1] 1.4e Completion of five salmonoid habitat enhancement projects in cooperation with the Water Forum (3-5 years).[1]	Regional Parks	Local jurisdictions, Landowners, Project proponents (e.g., SAFCA, USACE)	WCB conservation programs, USACE, grant funds, Mitigation projects, USACE's Ecosystem Restoration and Tribal Partnership programs	3-5 years / 6-10 years
	1.5 Rehabilitate habitats damaged or degraded by fire or homeless populations.	1.5a Mapping and evaluation all areas damaged or degraded by wildfire or encampments annually. 1.5b Preparation of plan to determine if areas can be passively rehabilitated or if active rehabilitation.	Regional Parks	CSUS, SAFCA, Project proponents, Parkway stakeholders	CVPIA, CDFW, WCB conservation programs, USFWS Section 6 Conservation Grants, DWR grants, mitigation funds	3-5 years

GOAL AREA	GOAL	OBJECTIVES/PERFORMANCE MEASURES	LEAD	SUPPORT	FUNDING	COMPLETION DATE
GOAL AREA 1 **Biological Resources**	1.6 Expand corridors that connect disparate native vegetation communities and wildlife habitat	1.6a Reduction of barriers to fish and wildlife movement in the Lower Parkway.	Regional Parks	Water Forum, Project proponents	USACE, WCB conservation programs, CDFW, Wildlife Corridors Conservation Act, NFWF grant programs, mitigation funds	3-5 years
	1.7 Reduce the prevalence of invasive, non-native species.	1.7a Completion of Invasive Species Management Plan Update 1.7b Replacement of five acres of invasive, non-native species with native species identified in the NRMP.	Regional Parks	NPOs, ARPF, USACE, Project proponents, Parkway stakeholders	Regional Parks, Grants, USACE, state bond-funded projects that restore habitat, County general fund, grant funds and mitigation funds	3-5 years

GOAL AREA	GOAL	OBJECTIVES/PERFORMANCE MEASURES	LEAD	SUPPORT	FUNDING	COMPLETION DATE
GOAL AREA 2 **Physical Resources**	2.1 Stabilize bank conditions throughout the Parkway to minimize erosion and retain natural riverine processes.	2.1a Stabilization of 100% of all levees throughout the Parkway consistent with maintaining a natural riverine environment	Regional Parks, USACE, SAFCA	Reclamation Districts	USACE, SAFCA	3-5 years
	2.2 Improve water quality.	2.2a Coordination with State Water Quality Control Board to monitor E. coli consistent with guidelines for aquatic recreation activities.	Regional Parks, SWRCB	DWR, Cities of Sacramento and Rancho Cordova	WCB conservation programs, DWR grant programs, stormwater violation dollars/ supplemental environmental projects	Within two years of NRMP completion

GOAL AREA	GOAL	OBJECTIVES/PERFORMANCE MEASURES	LEAD	SUPPORT	FUNDING	COMPLETION DATE
GOAL AREA 3 **Cultural Resources**	3.1 Protect archaeological and historical resources.	3.1a Protection of 100% of the officially designated archaeological and historical resources (listing is provided in the data management system).	Regional Parks	Tribal governments	WCB conservation programs, tribal partnerships, cultural resources grant programs	3-5 years
	3.2 Form a partnership with tribal governments to protect and manage cultural resources in the Parkway.	3.2a Establishment of regular annual meetings with tribal government representatives.	Regional Parks	Tribal governments	WCB conservation programs, USACE Tribal Partnership Program, local tribes, state/ federal grant programs	Within two years of NRMP completion

GOAL AREA	GOAL	OBJECTIVES/PERFORMANCE MEASURES	LEAD	SUPPORT	FUNDING	COMPLETION DATE
GOAL AREA 4 **Human Use Impact Reduction**	4.1 Minimize human use impacts on all Parkway resources.	4.1a Location of future recreational use areas and facilities 100 feet from a waterway as long as allowable recreational activities can be maintained. 4.1b Documentation and mapping of social trails in the Parkway.	Regional Parks	Cities, Event organizers, Recreation focus groups	WCB conservation programs, REI grants, federal grants, organized event sponsors	3-5 years
	4.2 Reduce impacts associated with homeless encampments in the Parkway.	4.2a Elimination or mitigation of the detrimental consequences associated with homeless encampments, such as: (1) accumulated debris; (2) environmental degradation; and (3) health and public safety issues including degradation of public infrastructure such as levees (as directed by the Martin vs. Boise court decision).	Regional Parks	Sacramento County Department of Health and Human Services, Cities of Sacramento and Rancho Cordova	County General Fund	3-5 years
	4.3 Reduce impacts related to large group gatherings and special events.	4.3a Containment of large special event activities within developed recreational areas.	Regional Parks	Event sponsors	Event fees from permits issued by County	Within two years of NRMP completion
	4.4 Maximize environmentally beneficial opportunities within transmission line corridors.	4.4a Utilization of transmission line corridors for environmentally beneficial vegetation as long as access for maintenance and safety is maintained.	Regional Parks	WAPA, PG&E, SMUD, Utility Arborist Association	Utility companies, County general fund, WCB conservation programs	3-5 years
	4.5 Reduce the amount of ambient light impacting biological resources in the Parkway while ensuring a safe park environment.	4.5a Identification of areas in the Parkway where there is an unnecessary amount of ambient light and create a plan for reducing the light.	Regional Parks	Cities, Landowners	County and/or city/state general funds	3-5 years
	4.6 Interpret environmental, archaeological, and historical resources and educate the public on the significance of the Parkway in the greater Sacramento region.	4.6a Development of an interpretation plan for the American River Parkway. 4.6b Inclusion of interpretive elements with large mitigation projects.	Regional Parks	ARNHA, Soil Born Farms, ARPF, SCOE, other NPOs	WCB conservation programs, state/federal grant programs, NGO grants, County departments, tribes, project proponents	3-5 years

GOAL AREA	GOAL	OBJECTIVES/PERFORMANCE MEASURES	LEAD	SUPPORT	FUNDING	COMPLETION DATE
GOAL AREA 5 **Agency and Community Coordination**	5.1 Convene a Parkway resource group to oversee NRMP implementation.	5.1a Creation a sub-committee of the American River Parkway Advisory Committee to meet at least once per year with Regional Parks staff to evaluate the implementation of the NRMP.	Regional Parks	SAFCA, Water Forum, ARPAC, RPC, LARCP, Parkway stakeholders	In-kind contributions from County, stakeholders, and partners	Within two years of NRMP completion
	5.2 Reduce wildfire fuel and hazards in the Parkway.	5.2a Development and implementation of a plan for wildfire prevention, response, and recovery. 5.2b Development of a tracking system for wildfires in the Parkway.	Regional Parks	Sacramento Metro Fire, Sacramento City Fire, Utility companies, Cities, Landowners	WCB conservation programs, Cal Fire Grants, Urban Corps grants, federal grant programs	Within two years of NRMP completion
	5.3 Support scientific research programs to increase the quantity and quality of data describing the condition of Parkway resources.	5.3a Establishment of ongoing research and data collection programs with CSUS, UC Davis, and other local colleges. 5.3b Development of a citizen science data program.	Regional Parks	CSUS and UC Davis	State and federal research grants, grad student research, project proponents	3-5 years
	5.4 Implement a robust environmental monitoring program.	5.4a Provision of annual updates of monitoring data to the NRMP geodatabase.	Regional Parks, SAFCA, USACE	Regulatory agencies, Project proponents	WCB conservation programs	Within two years of NRMP completion
	5.5 Encourage public outreach and educational activities to increase the public's understanding and appreciation of Parkway resources.	5.5a Establishment of one educational partnership, per year, with local school districts and community-based organizations to develop curriculum for teaching environmental stewardship and proper use of Parkway resources.	Regional Parks, SCOE	ARPF, ARNHA, Soil Born Farms	County programs, in-kind contributions from partners	3-5 years

ENVIRONMENTAL/LAND USE SETTING:

The Parkway is surrounded primarily by urban development within Sacramento County. Undeveloped "bars" (elevated landforms near a river) containing larger areas of natural vegetation are occasional on both the north and south side of the river in the upper half of the Parkway. These bars and designated parks include (from upriver to downriver) Sailor Bar, Sacramento Bar, Rossmoor Bar, Ancil Hoffman County Park, River Bend Park, and Arden Bar. Major vegetation types in the Parkway include grassland, oak woodland, willow riparian, cottonwood forests, ponds, marshes/seeps, introduced vegetation, and agricultural. Due to past mining activities along and in the river, there are also significant areas of barren land and mine tailings/rock piles.

The lower American River is classified as a "Recreation" river within the state and federal Wild and Scenic River Systems. The Parkway is designated either as Natural Preserve or as Recreation on the Sacramento County General Plan. The Sacramento County Zoning Code designates the area as "O (PC)", for Recreation and Parkway Corridor Combining Zone, with some areas also denoted "F", for Flood Combining Zone. The Parkway Plan provides more specific land use designations for areas within the Parkway: Open Space Preserve, Nature Study Area, Protected Area, Limited Recreation, Developed Recreation and Recreation Reserve.

The existing Parkway includes maintained trails, some roads and staging areas and public facilities (an interpretive center, boat launches, bathrooms, etc.). There are also some existing commercial, public and agricultural uses in the Parkway, pumping stations, and small active farms. The Parkway is surrounded on both sides by urban development, primarily of a residential character. To connect these urban areas, the American River is crossed by two freeways, nine local thoroughfares, two train bridges, five pedestrian/bicycle bridges and the Nimbus Dam. The American River is flanked on both sides by levees where needed to protect urban development.

PROBABLE ENVIRONMENTAL EFFECTS/SEIR FOCUS:

- Land Use
- Hydrology/Flooding
- Water Quality
- Air Quality
- Public Safety/Nuisance Impacts
- Access and Circulation
- Noise
- Biology
- Cultural/Historical Resources
- Tribal Cultural Resources
- Aesthetics
- Hazards & Hazardous Materials

- Areas of Known Controversy

INTENDED USES OF THE SEIR AND NRMP:

The SEIR will supplement the analysis in the Final EIR for the Parkway Plan and disclose to the public and decision makers potential environmental impacts pursuant to CEQA associated with the proposed NRMP. The purpose of the NRMP is to provide relevant and defensible information for making informed decisions for managing, maintaining, and enhancing Parkway resources. Regional Parks will use this plan to help identify the effects of disturbances such as flood, fire, invasive species and human impacts, as well as opportunities for protections and enhancements. It will advise resource management strategies for promoting healthy ecosystems and resource protections, while balancing concurrent Parkway goals of flood control, recreational opportunities and public safety.

Responsible Agencies may include but not be limited to the following:

- Sacramento Area Flood Control Agency,
- US Fish and Wildlife Service,
- US Army Corps of Engineers,
- California Department of Fish and Wildlife,
- Central Valley Regional Water Quality Control Board,
- City of Sacramento,
- City of Rancho Cordova,
- Sacramento Municipal Utility District and/or Pacific Gas and Electric.

Plate NOP-3: Potential Management Actions at Discovery Park

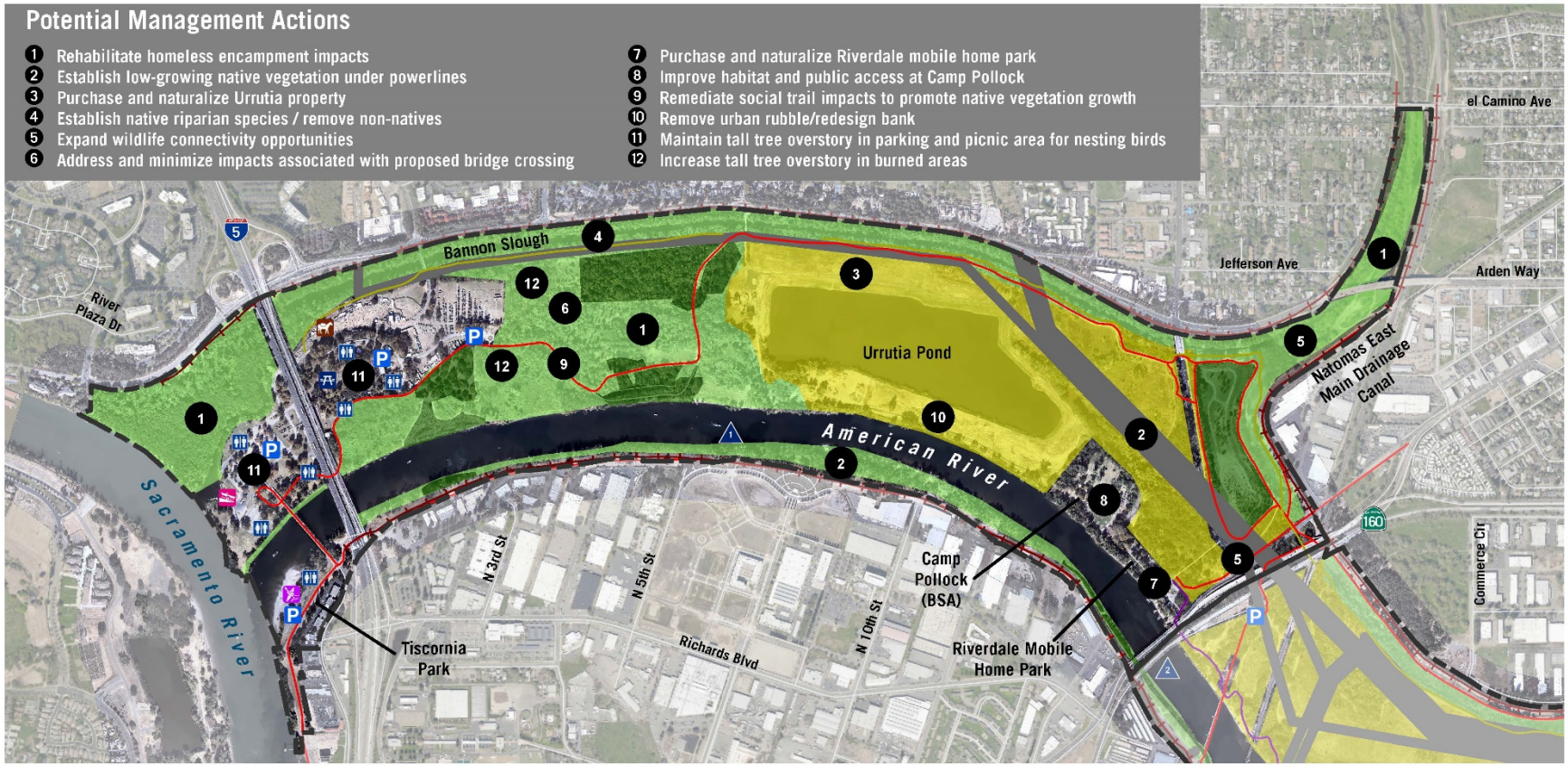


Figure 8-19
Area Plan 1 Discovery Park B

Plate NOP-4: Potential Management Actions at Woodlake

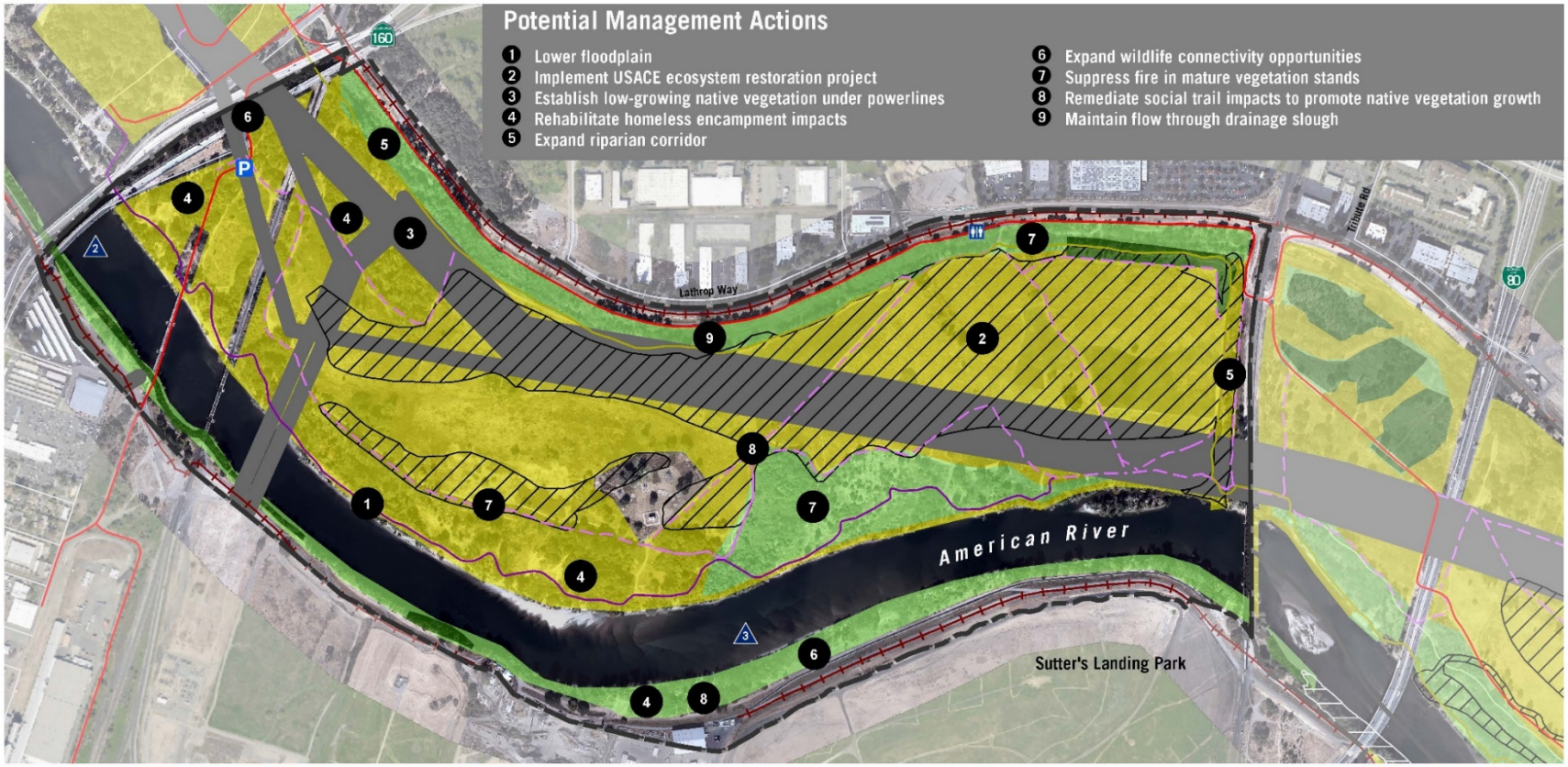


Figure 8-21
Area Plan 2 Woodlake B

Plate NOP-5: Potential Management Actions at Cal Expo

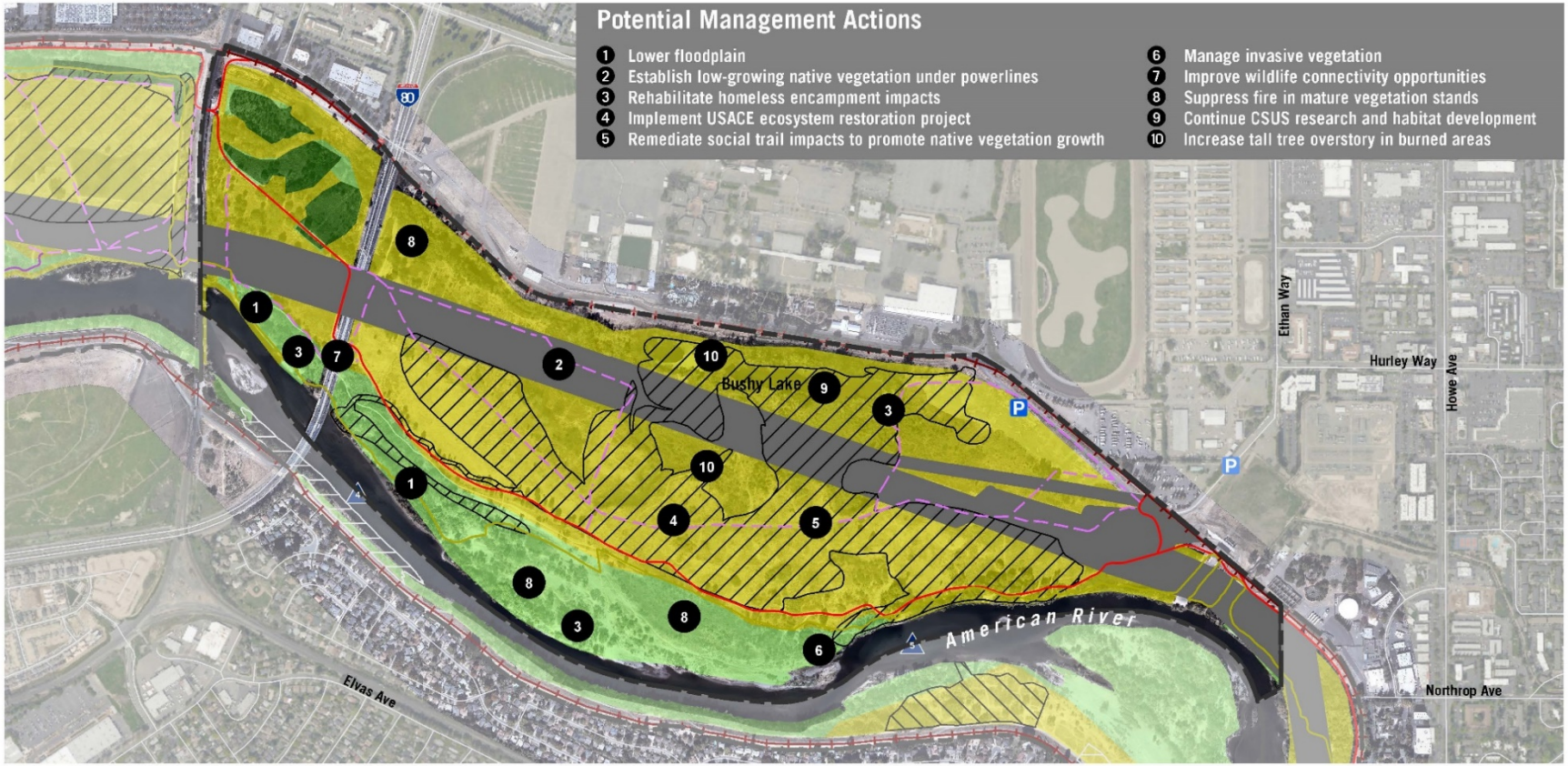


Figure 8-23
Area Plan 3 Cal Expo B

Plate NOP-6: Potential Management Actions at Paradise Beach

Figure 8-25
Area Plan 4 Paradise Beach B

Plate NOP-7: Potential Management Actions at Campus Commons

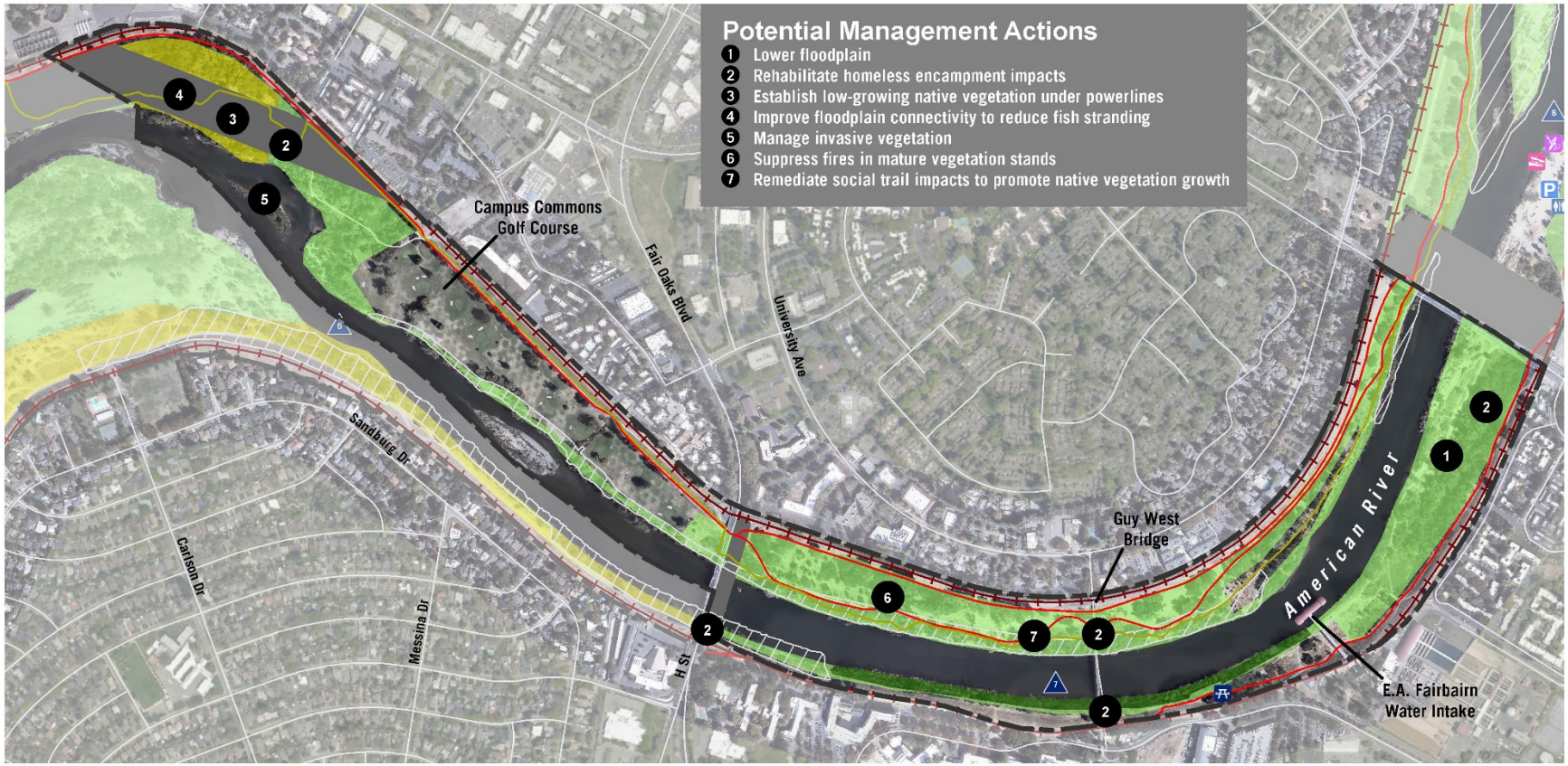


Figure 8-27
Area Plan 5 Campus Commons B

Plate NOP-8: Potential Management Actions at Howe Avenue

Figure 8-29
Area Plan 6 Howe Avenue B

Plate NOP-9: Potential Management Actions at Watt Avenue

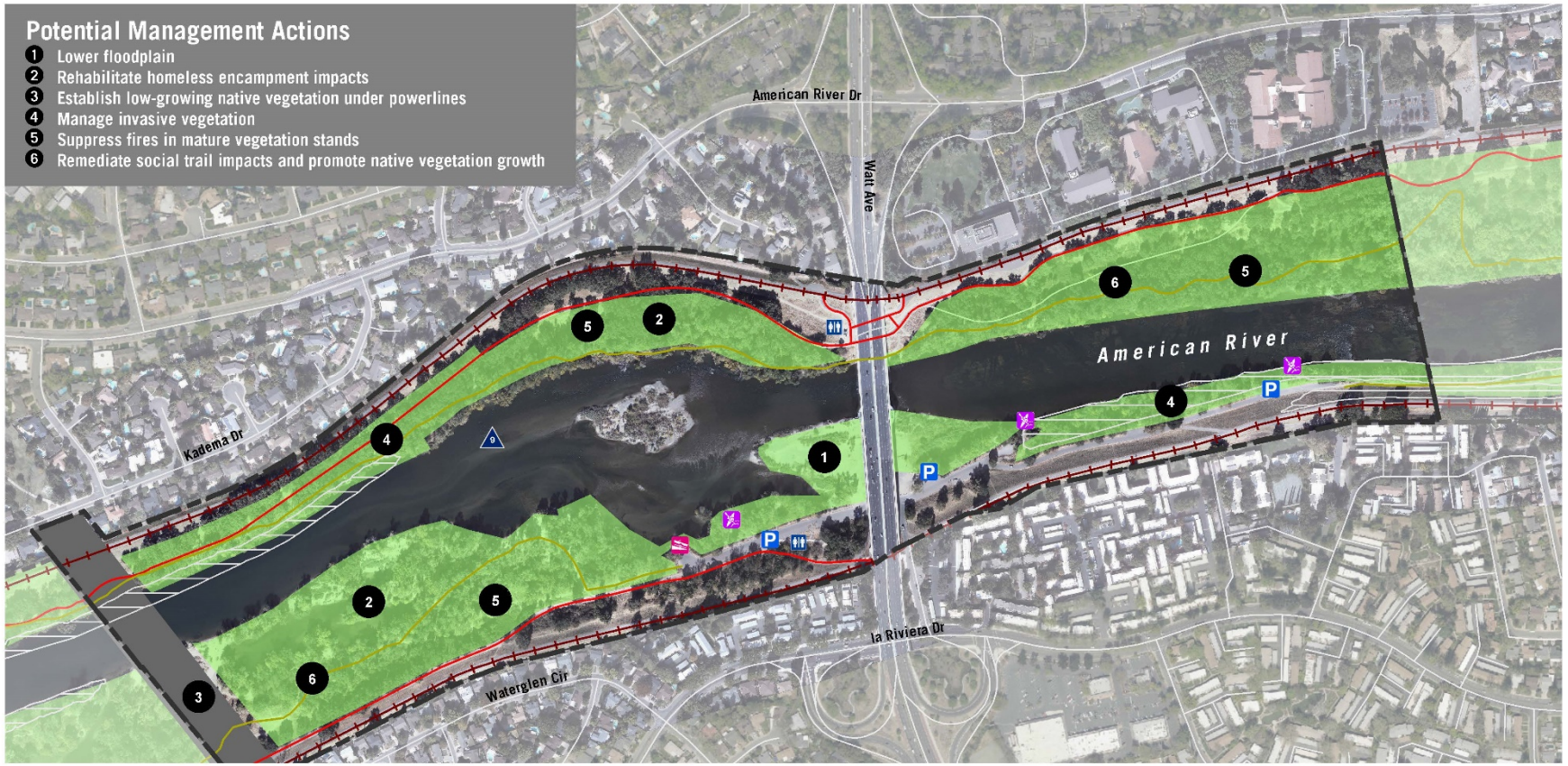


Figure 8-31
Area Plan 7 Watt Avenue B

Plate NOP-10: Potential Management Actions at SARA Park

Figure 8-33
Area Plan 8 SARA Park B

Plate NOP-11: Potential Management Actions at Arden Bar

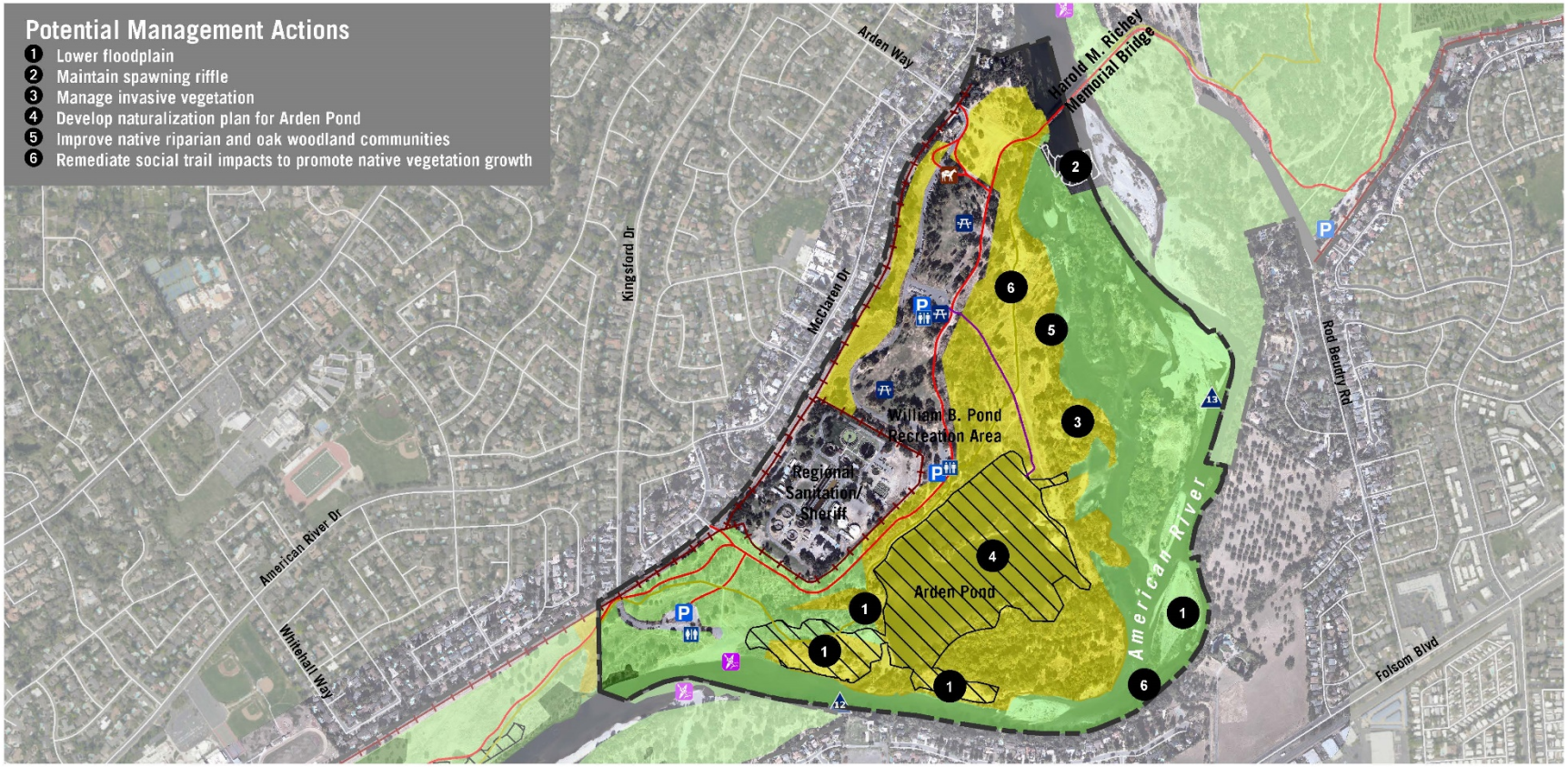


Figure 8-35
Area Plan 9 Arden Bar B

Plate NOP-12: Potential Management Actions at River Bend Park

Figure 8-37
Area Plan 10 River Bend Park B

Plate NOP-13: Potential Management Actions at Sarah Court Access

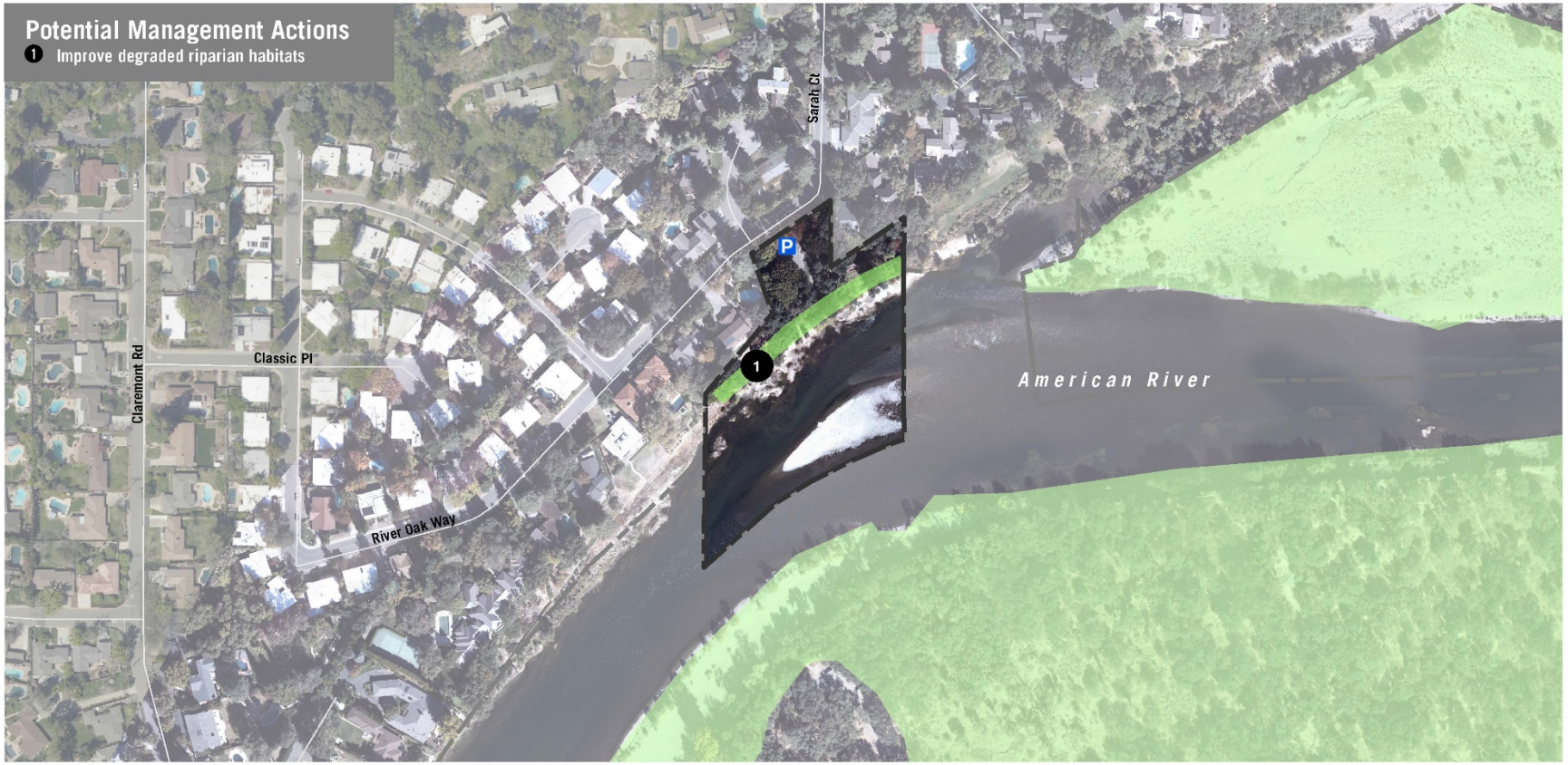


Figure 8-39
Area Plan 11 Sarah Court Access B

Plate NOP-14: Potential Management Actions at Ancil Hoffman County Park

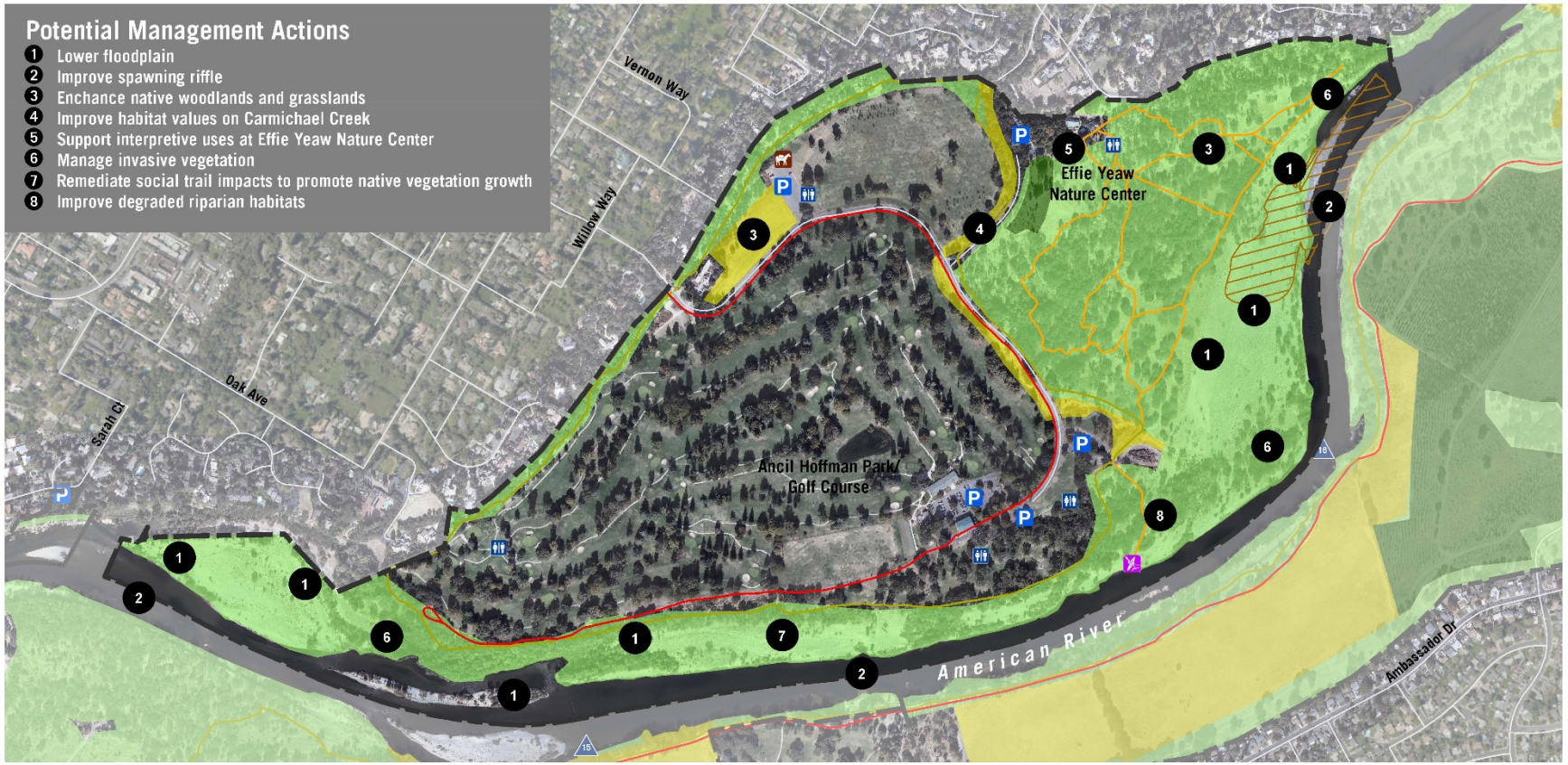


Figure 8-41
Area Plan 12 Ancil Hoffman County Park B

Plate NOP-15: Potential Management Actions at Rossmoor Bar

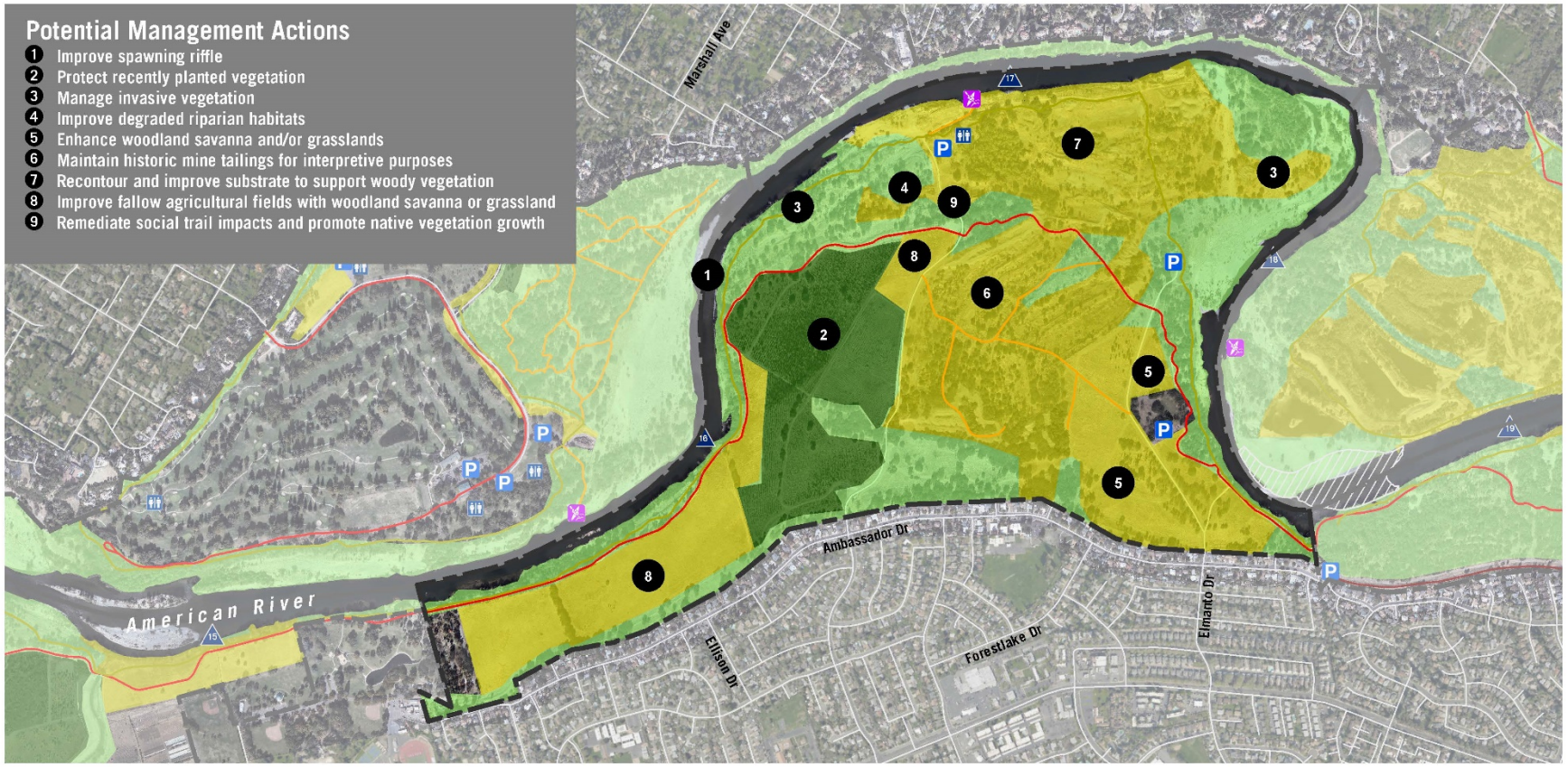


Figure 8-43
Area Plan 13 Rossmoor Bar B

Plate NOP-16: Potential Management Actions at San Juan Bluffs

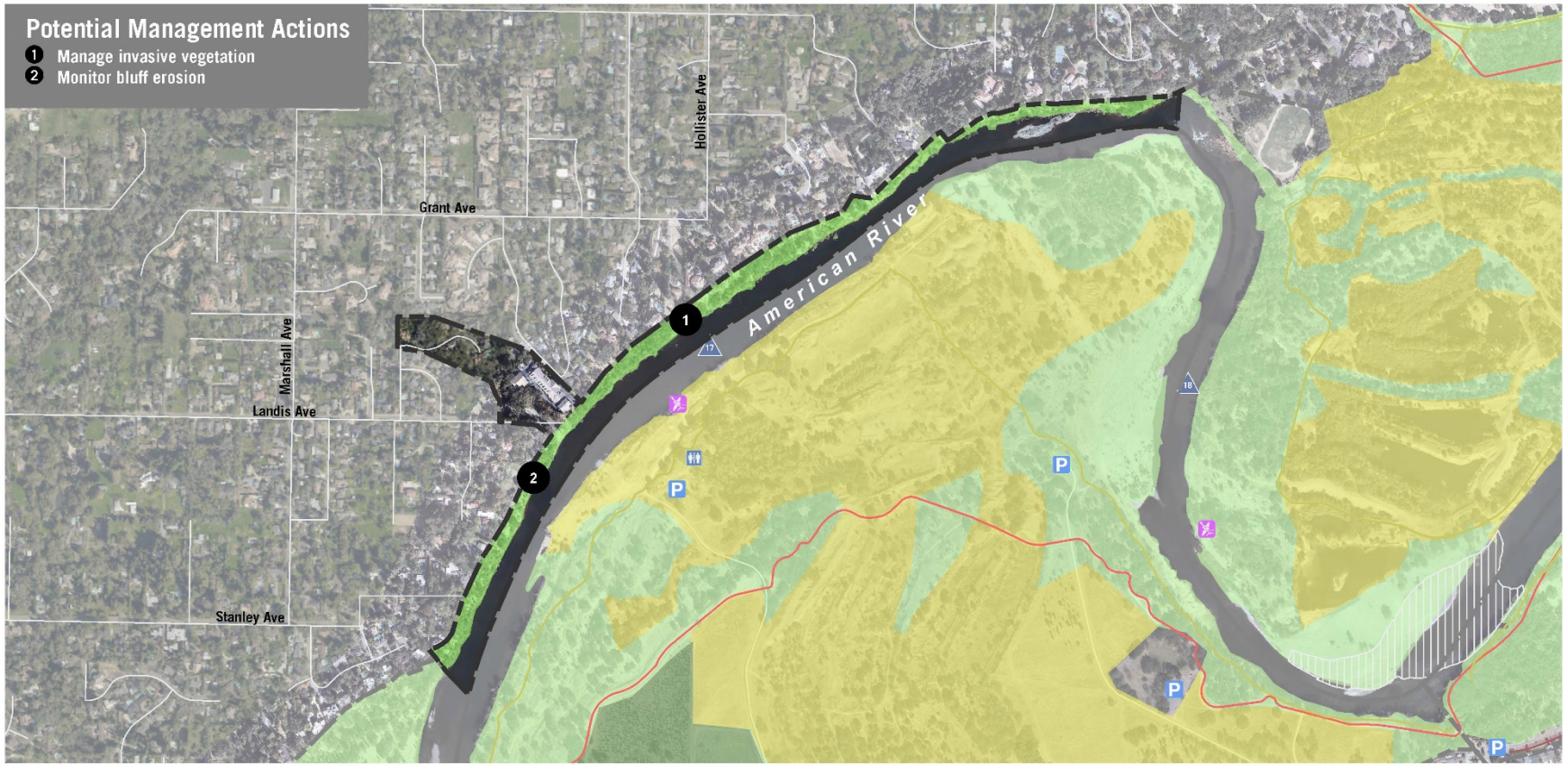


Figure 8-45
Area Plan 14 San Juan Bluffs B

Plate NOP-17: Potential Management Actions at Sacramento Bar

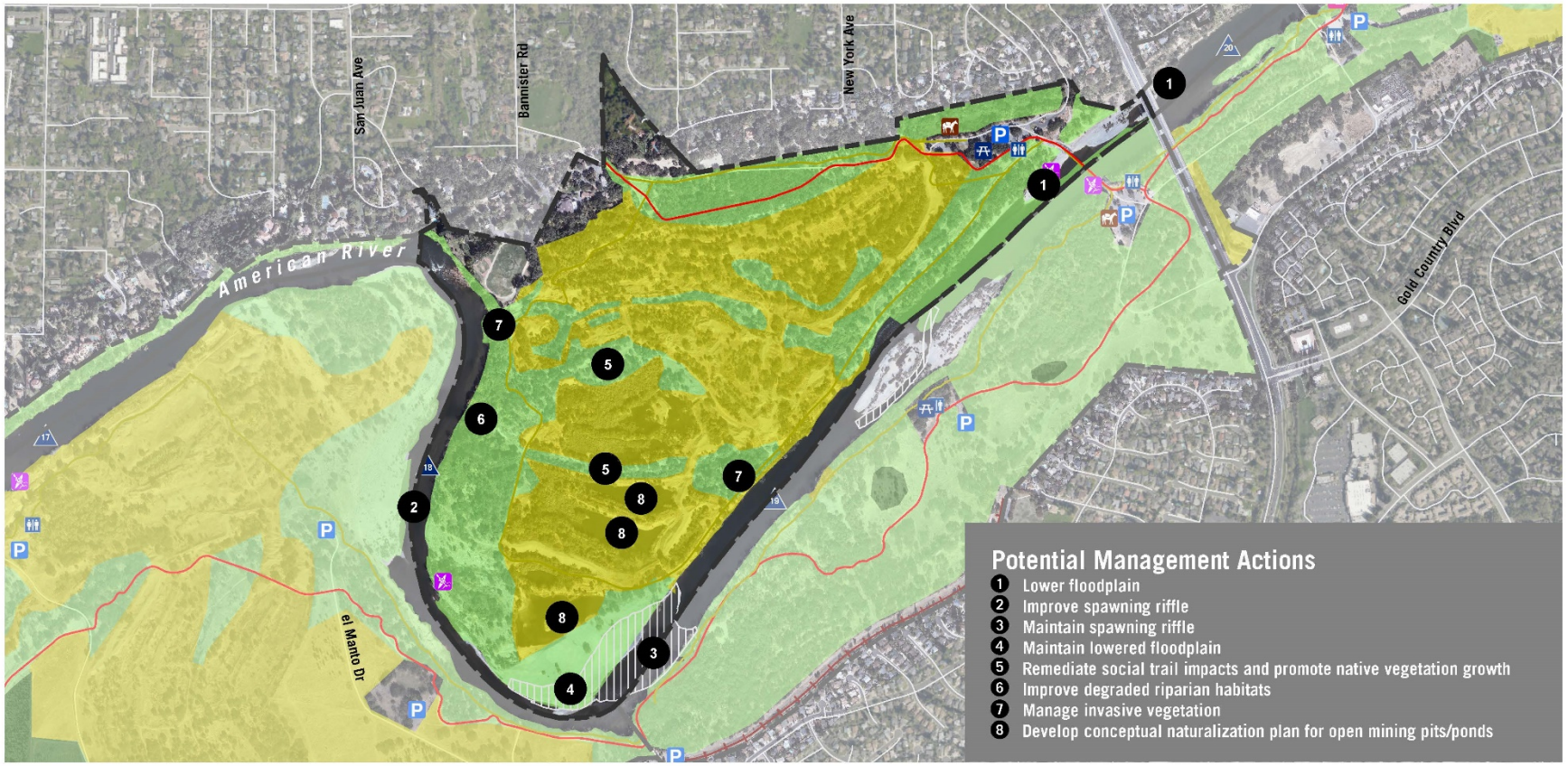


Figure 8-47
Area Plan 15 Sacramento Bar B

AREA PLAN 15 SACRAMENTO BAR

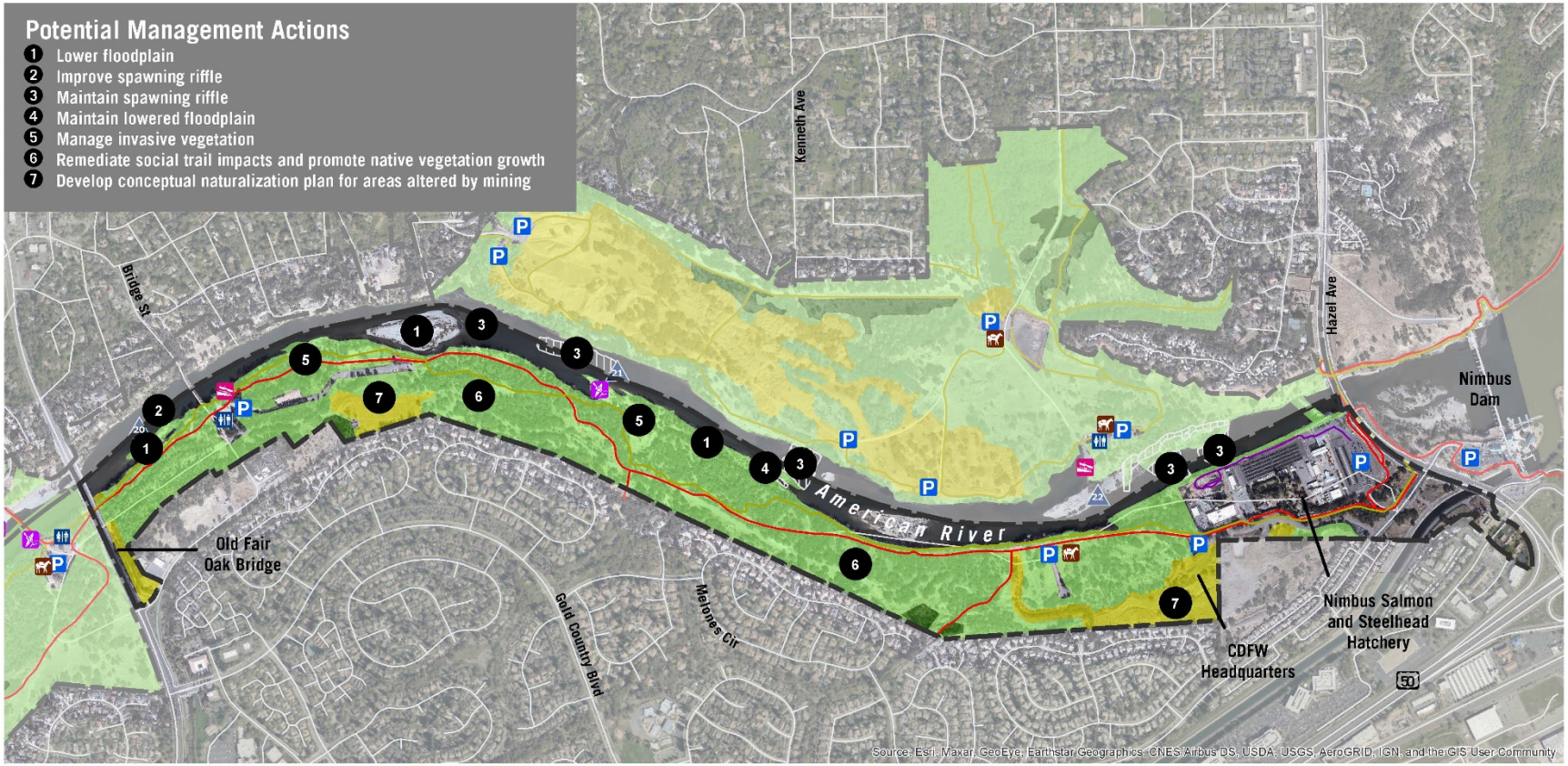
Plate NOP-18: Potential Management Actions at Lower Sunrise

Figure 8-49
Area Plan 16 Lower Sunrise B

Plate NOP-19: Potential Management Actions at Sunrise Bluffs

Figure 8-51
Area Plan 17 Sunrise Bluffs B

Plate NOP-20: Potential Management Actions at Upper Sunrise

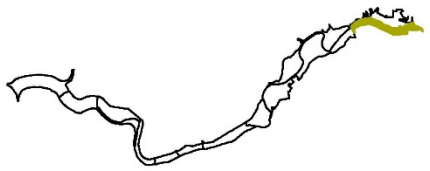


Parkway Boundary
Bicycle/Pedestrian Trail
Equestrian/Hiking Trail
Pedestrian Trail

Boat ramp, Trailer boat
Car Top Boat Launch
Equestrian Staging
Parking
Restroom
River Mile

Existing Gravel Augmentation

Management Category
Preservation
Conservation
Naturalization



0 1,000 2,000 Feet

Figure 8-53
Area Plan 18 Upper Sunrise B

Plate NOP-21: Potential Management Actions at Sailor Bar

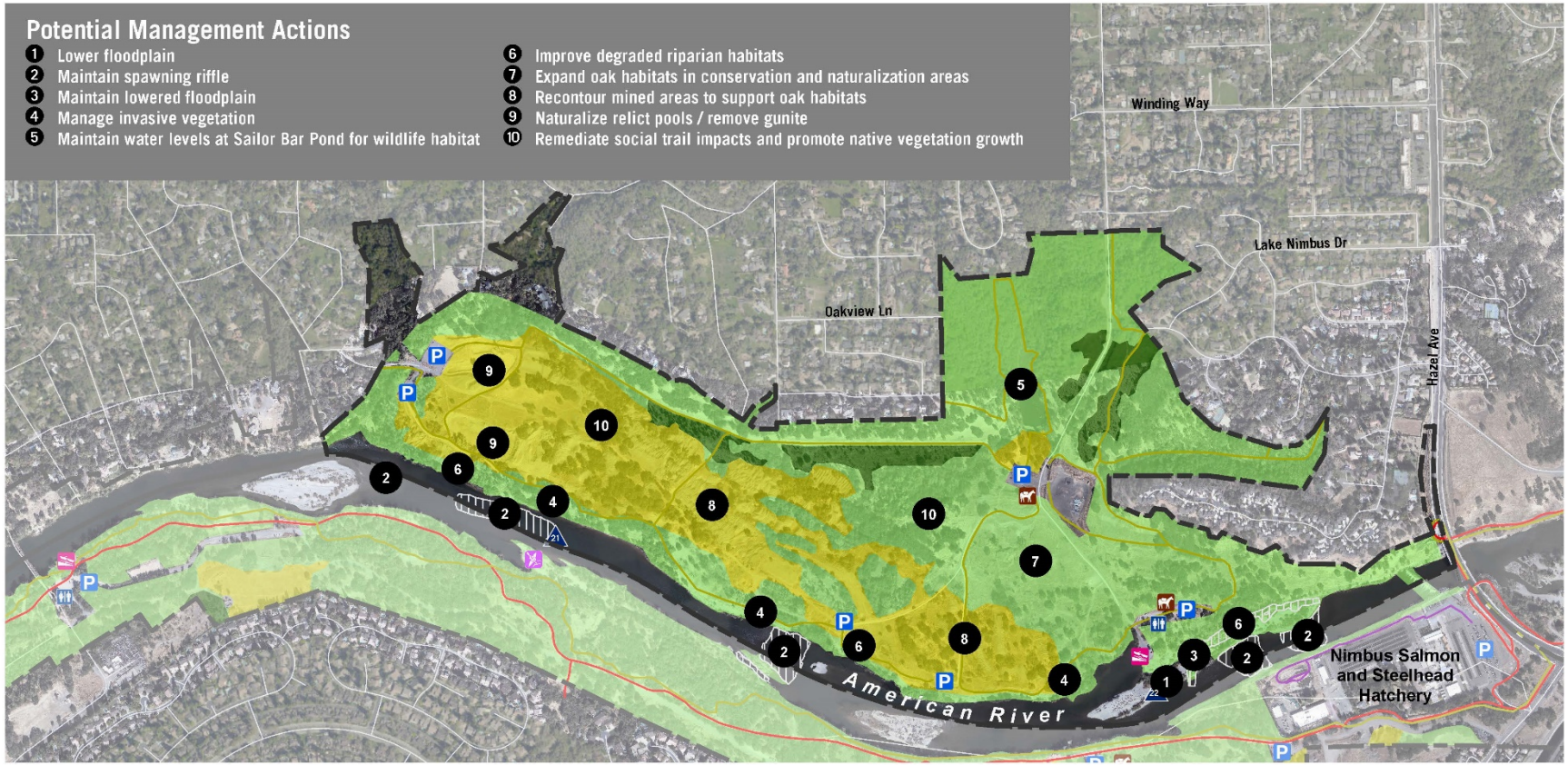


Figure 8-55
Area Plan 19 Sailor Bar B

Appendix IN-3_NOP Comment Letters

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

April 12, 2021

Josh Greetan
Sacramento County Office of Planning & Environmental Review
827 7th Street, Room 225
Sacramento, CA 95814

Re: 2021040230, American River Parkway Natural Resources Management Plan Project, Sacramento County

Dear Mr. Greetan:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating 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:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

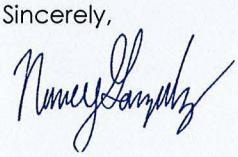
a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,



Nancy Gonzalez-Lopez
Cultural Resources Analyst

cc: State Clearinghouse

REGIONALSAN
TAKING THE WASTE OUT OF WATER
Sacramento Regional County Sanitation District

Main Office
10060 Goethe Road
Sacramento, CA 95827-3553
Tel: 916.876.6000
Fax: 916.876.6160

Treatment Plant
8521 Laguna Station Road
Elk Grove, CA 95758-9550
Tel: 916.875.9000
Fax: 916.875.9068

May 21, 2021

Mr. Josh Greetan
County of Sacramento – Office of Planning & Environmental Review
827 Seventh Street, Room 225
Sacramento, CA 95814

Subject: Notice of Preparation of a Draft Supplemental Environmental Impact Report for the American River Parkway Natural Resources Management Plan – PLER2019-00073 (SCH: 2021040230)

Dear Mr. Greetan,

The Sacramento Area Sewer District (SASD) and Sacramento Regional County Sanitation District (Regional San) have the following comments pertaining to the County of Sacramento (County) preparation of a Draft Supplemental Environmental Impact Report (DSEIR) for the American River Parkway Natural Resources Management Plan.

SASD and Regional San have several existing pipelines, easements and access roads located within the American River Parkway Natural Resources Management Plan Areas. SASD and Regional San requires continuous access to its existing pipelines, easements and access roads for operation and maintenance purposes at all times. Per existing SASD and Regional San easement rights, both SASD and Regional San retain the right to perform maintenance and rehabilitation activities on these facilities at any time.

Any project that proposes to raise or lower the existing ground elevation, impart additional loading over existing SASD or Regional San pipelines or prohibit access to existing SASD and Regional San facilities shall be reviewed by SASD or Regional San to determine that the proposed project will not be detrimental to existing SASD or Regional San pipelines.

Any landscaping, erosion control projects or other plantings and/or ground surface alterations proposed to be implemented within or near existing SASD or Regional San pipelines or easements shall be reviewed and approved by SASD and Regional San. Environmentally protected species or species whose mature growth exceeds five-feet in height at mature growth will not be allowed within existing SASD or Regional San easements without prior approval by SASD or Regional San.

It is imperative that SASD and Regional San retain the right to construct future facilities as required to meet the needs of development as well as providing continued service to the community.

In February 2013, the Regional San Board of Directors adopted the Interceptor Sequencing Study (ISS). The ISS updated the Regional San Master Plan 2000. The ISS is located on the Regional San website at www.regionalsan.com/ISS.

In March 2021, the SASD Board of Directors approved the most current SASD planning document, the 2020 System Capacity Plan Update (SCP). The SCP is located on the SASD website at www.sacsewer.com/devres-standards.html.

If you have any questions regarding this letter, please feel free to contact me at (916) 876-6104 or by email: armstrongro@sacsewer.com.

Sincerely,

Robb Armstrong

Robb Armstrong
Regional San Development Services & Plan Check

Appendix PD-1

American River Parkway Natural Resources Management Plan (NRMP) Prepared by MIG for Sacramento County and Sacramento County Regional Parks.

Due to the size of the document, it is available for review at the following website:

https://regionalparks.saccounty.gov/Parks/Pages/NaturalResourcesManagement.aspx

The document is also available for review in person at:

Planning and Environmental Review:

827 7th Street, Rm 225

Sacramento, CA 95814

916-874-6141

Appendix PD-2_ARPP and NRMP Comparison Table

Appendix PD-2: Relevant ARPP Policies in relation to NRMP Goals, Objectives, and Performance Measures

ARPP Policy No.	ARPP Policy	NRMP Goal	Objectives/Performance Measures
NRMP Goal 1: Biological Resources			
No specific policy in the ARPP relates to this goal. Goal is directed at data gathering of biological resources within the Parkway.	N/A	1.1 Assess biological resources within the Parkway.	1.1a Update vegetation community maps, including a shaded riverine aquatic habitat map. 1.1b Complete systematic surveys for sensitive species habitat. 1.1b Update invasive plant species surveys. 1.1d Track homeless encampment locations.
Concept Policy 1.3: Resource Protection	N/A	1.2 Conserve high-quality native habitats.	1.2a Conserve 176 acres of high-quality native riparian vegetation communities. 1.2b Conserve 17 acres of high-quality native grassland vegetation communities. 1.2c Conserve 54 acres of high-quality native woodland vegetation communities. 1.2d Conserve 14 acres of high-quality native elderberry vegetation communities.
Concept Policy 1.3: Resource Protection	N/A	1.3 Restore high-quality native habitats that require improvement.	1.3a Restore 1184 acres of high-quality native riparian vegetation. 1.3b Restore 99 acres of high-quality native grassland vegetation communities. 1.3c Restore 578 acres of high-quality native woodland vegetation communities. 1.3d Restore 43 acres of high-quality native elderberry vegetation communities.
No specific policy in the ARPP relates to this goal for naturalization of areas affected by human activity.	N/A	1.4 Naturalize habitats that have been altered by human activity.	1.4a Naturalization of 118 acres (3-5 years) and 64 acres (6-10 years) of native riparian vegetation communities (total = 18.2 acres) 1.4b Naturalization of 2 acres (3-5 years) and 50 acres (6-10 years) of native grassland vegetation communities (total = 5.2 acres) 1.4c Naturalization of 13 acres (3-5 years) and 111 acres (6-10 years) of native woodland vegetation communities (total = 124 acres)

ARPP Policy No.	ARPP Policy	NRMP Goal	Objectives/Performance Measures
			1.4d Naturalization of 33 acres of native elderberry vegetation communities 1.4e Completion of five salmonoid habitat enhancement projects in cooperation with the Water Forum
Public Use and Access Policy 9.29 (in relation to homelessness); No specific policy in the ARPP relates to this goal for rehabilitation of areas damaged by fire.	Park resource managers, working in partnership with stewardship groups, shall encourage the development and implementation of measures to help transition portions of the Parkway that have been impacted by illegal camping into a more appropriate use of the Parkway.	1.5 Rehabilitate habitats damaged or degraded by fire or homeless populations.	1.5a Preparation of a plan to rehabilitate wildfire-damaged areas, prioritizing vulnerable mature vegetation, to ensure a timely response to minimize undesirable wildfire impacts. Document and evaluate all areas damaged or degraded by wildfire annually as part of the plan. 1.5b Parallel to Rehabilitation, identify areas requiring repair, which is different than rehabilitation, and include annual Parks O&M plans.
No specific policy in the ARPP relates to this goal for expansion of corridors to connect disparate vegetation communities and wildlife habitat. The ARPP has policies for expansion of specific vegetation communities only.	N/A	1.6 Expand corridors that connect disparate native vegetation communities and wildlife habitat.	1.6a Reduction of barriers to fish and wildlife movement in the Lower Parkway. 1.6b Complete Wildlife Connectivity Opportunity Plan.
Aquatic Communities Policy 3.9 Terrestrial Resource Policy 3.2.4 Non-Recreational Use of the Parkway Policy 6.4.2	Responsible local and state agencies shall, and federal agencies should, discourage introductions of invasive non-native aquatic plants and animals. Agencies managing the Parkway shall remove invasive non-native vegetation species that conflict with habitat	1.7 Reduce the prevalence of invasive, non-native species.	1.7a Update Invasive Plant Management Project. 1.7b Replacement of five acres of invasive, non-native species with native species identified in the NRMP.

ARPP Policy No.	ARPP Policy	NRMP Goal	Objectives/Performance Measures
	management goals, recreation uses, flood control or water supply conveyance. Agricultural activities, as permitted per land use designation, may be used as a management tool on an interim basis to inhibit the spread of invasive species.		
Goal 2 :Physical Resources			
Flood Control Policy 4.16	Bank scour and erosion shall be proactively managed to protect public levees and infrastructure, such as bridges, piers, power lines, habitat and recreational resources. These erosion control projects, which may include efforts to anchor berms and banks with rock revetment, shall be designed to minimize damage to riparian vegetation and wildlife habitat, and should include a revegetation program that screens the project from public view, provides for a naturalistic appearance to the site, and restores affected habitat values.	2.1 Protect levees throughout the Parkway.	2.1a Stabilization of 100% of all levees throughout the Parkway consistent with maintaining a natural riverine environment.
Water Quality Policies 4.4 and 4.5	Water quality in the lower American River shall be maintained to provide for beneficial uses of the	2.2 Improve water quality.	2.2a Coordination with State Water Quality Control Board to monitor and map high ***E. coli*** levels. 2.2b. Identify reaches of the river that have chronic levels of high ***E. Coli*** levels.

ARPP Policy No.	ARPP Policy	NRMP Goal	Objectives/Performance Measures
	river, including: municipal and domestic water supply; industrial service water supply; irrigation; water contact and non-contact recreation; freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development of fish; and wildlife habitat. Local, regional, state and federal agencies with jurisdiction over water quality of the American River should work together to maintain and protect a high level of water quality, manage and monitor discharges, and enforce existing water quality regulations.		
Goal 3: Cultural Resources			
Human Historical and Interpretive Resources Policy 3.15	Archaeological resources and historical sites shall be preserved until determination of their historical importance can be made and decisions about their disposition are reached.	3.1 Protect archaeological and historical resources.	3.1a Protection of 100% of the officially designated archaeological and historical resources (listing is provided in the date management system).
No specific policy in the ARPP relates to this goal. Goal is implemented through current federal and state regulations.	N/A	3.2 Form a partnership with tribal governments to protect and manage cultural resources in the parkway.	3.2a Establishment of regular annual meetings with tribal government representatives.
Goal 4: Human Use Impact Reduction			

ARPP Policy No.	ARPP Policy	NRMP Goal	Objectives/Performance Measures
Concept Policy 1.3: Resource Protection	Limitation on the use of the Parkway through design and management tools to prevent overuse of the Parkway and preserve the environmental quality, thereby ensuring the integrity of the Parkway for future users.	4.1 Minimize human use impacts on all Parkway resources.	4.1a Locate and design future recreational use areas and facilities with sensitivity to water resources. 4.1b Documentation and mapping of social trails in the Parkway.
Public Use and Access Policy 9.29	Park resource managers, working in partnership with stewardship groups, shall encourage the development and implementation of measures to help transition portions of the Parkway that have been impacted by illegal camping into a more appropriate use of the Parkway.	4.2 Reduce impacts associated with homeless encampments in the Parkway.	4.2a Elimination or mitigation of the detrimental consequences associated with homeless encampments such as (1) accumulated debris, (2) environmental degradation, and (3) health and public safety issues including degradation of public infrastructure such as levees.
Non-Recreational Use of the Parkway Policy 6.1.5 Group Activities Policy 5.33	Commercial activities in association with special events, including the sale of food and beverage from mobile day-use units, will only be considered in fixed locations in association with a special event permit. Staff shall review each special event permit request on an individual basis to assess potential adverse impacts on the Parkway such as litter and other nuisances. Large special events may be permitted at Discovery Park on a periodic basis so long as natural resources are not degraded.	4.3 Monitor impacts related to large group gatherings and special events.	4.3a Containment of large special event activities within developed recreational areas.

ARPP Policy No.	ARPP Policy	NRMP Goal	Objectives/Performance Measures
No specific policy in the ARPP relates to this goal.	N/A	4.4 Maximize environmentally beneficial opportunities within transmission line corridors.	4.4a Utilization of transmission line corridors for environmentally beneficial vegetation in accordance with an executed Vegetation Management Agreement. 4.4b Execution of Vegetation Management Agreement with transmission corridor utility companies.
Public Use and Access Policy 9.24	Paved parking lots in Discovery and Ancil Hoffman Parks and paved parking lots serving Parkway interpretive/educational centers shall meet Sacramento County zoning code lighting standards. All lighting shall be directed away from residential areas, public streets and surrounding natural areas of the Parkway, so as not to produce a glare into those areas, while still maintaining the general safety of other vehicular traffic and the privacy and well being of the residential areas. Due to the desire to minimize impacts to wildlife from introduced lighting, other parking lots are not subject to the zoning code lighting standards.	4.5 Reduce the amount of ambient light impacting biological resources in the Parkway while ensuring a safe park environment.	4.5a Complete a baseline ambient night light survey to identify areas in the Parkway where there is an unnecessary amount of ambient light and create a plan for reducing the light, consistent with American River Parkway policies.
Human Historical and Interpretive Resources Policy 3.13	A long range interpretive program shall be managed for the Parkway to interpret all currently recognized ecosystems and the three periods of human history. This program shall include	4.6 Interpret environmental, archaeological, and historical l resources and educate the public on the significance of the	4.6a Update the interpretation plan for the American River Parkway. 4.6b Inclusion of interpretive elements with large environmental enhancement projects including mitigation projects.

ARPP Policy No.	ARPP Policy	NRMP Goal	Objectives/Performance Measures
	at least the following components: signs, exhibits, nature trails, guided walks and tours, guided recreational activities, cultural and living history programs, community outreach, publications and media, and research. This program should serve all segments of the community and extend throughout the Parkway.	Parkway in the greater Sacramento Region.	
Goal 5: Agency and Community Coordination			
Concept Policy 1.5: Cooperation	Coordination and cooperation in Parkway planning and management is essential, especially in recognizing the many important roles of jurisdictions and agencies with regulatory responsibilities within the Parkway.	5.1 Oversee implementation of NRMP.	5.1a Create a sub-committee of the American River Parkway Advisory Committee to meet at least once per year with Regional Parks staff to evaluate the implementation of the NRMP.
Concept Policy 1.5: Cooperation	Coordination and cooperation in Parkway planning and management is essential, especially in recognizing the many important roles of jurisdictions and agencies with regulatory responsibilities within the Parkway.	5.2 Coordinate with fire agencies to reduce wildfire fuel and hazards in the Parkway.	5.2a Update and implement the wildfire prevention plan. Develop response, and recovery plans. 5.2b Develop and maintain a tracking system for wildfires in the Parkway.
No specific policy in the ARPP relates to this goal. Goal is directed at data	N/A	5.3 Support scientific research programs to increase the quantity and	5.3a Establishment of ongoing research and data collection programs with CSUS, UC Davis, and other local colleges.

ARPP Policy No.	ARPP Policy	NRMP Goal	Objectives/Performance Measures
gathering of biological resources within the Parkway.		quality of data describing the condition of Parkway resources.	5.3b Development of a citizen science data program. 5.3c Identify research needs to understand Parkway conditions and fill data gaps.
Terrestrial Resource Policy 3.4	Management of the Parkway shall ensure the protection of the Parkway's resources, its environmental quality and natural values. A resource impact monitoring plan shall be developed that clearly defines criteria and standards to monitor, evaluate and protect the Parkway's resources from overuse, and provides steps to be taken to restore areas that have been overused.	5.4 Implement a robust Natural Resource Management Plan Monitoring Program.	5.4a Provide annual updates of monitoring data to the NRMP geodatabase.
No specific policy in the ARPP relates to public outreach; several policies are in the ARPP on educational activities to increase the public's understanding and appreciation of Parkway resources.	N/A	5.5 Encourage public outreach and educational activities to increase the public's understanding and appreciation of Parkway resources.	5.5a Establishment of one educational partnership, per year, with local school districts, and community-based organizations to develop curriculum for teaching environmental stewardship and proper use of Parkway resources.

Appendix PD-3_Area Plan Maps and Management Actions

Plate PD-1: Potential Management Actions at Discovery Park

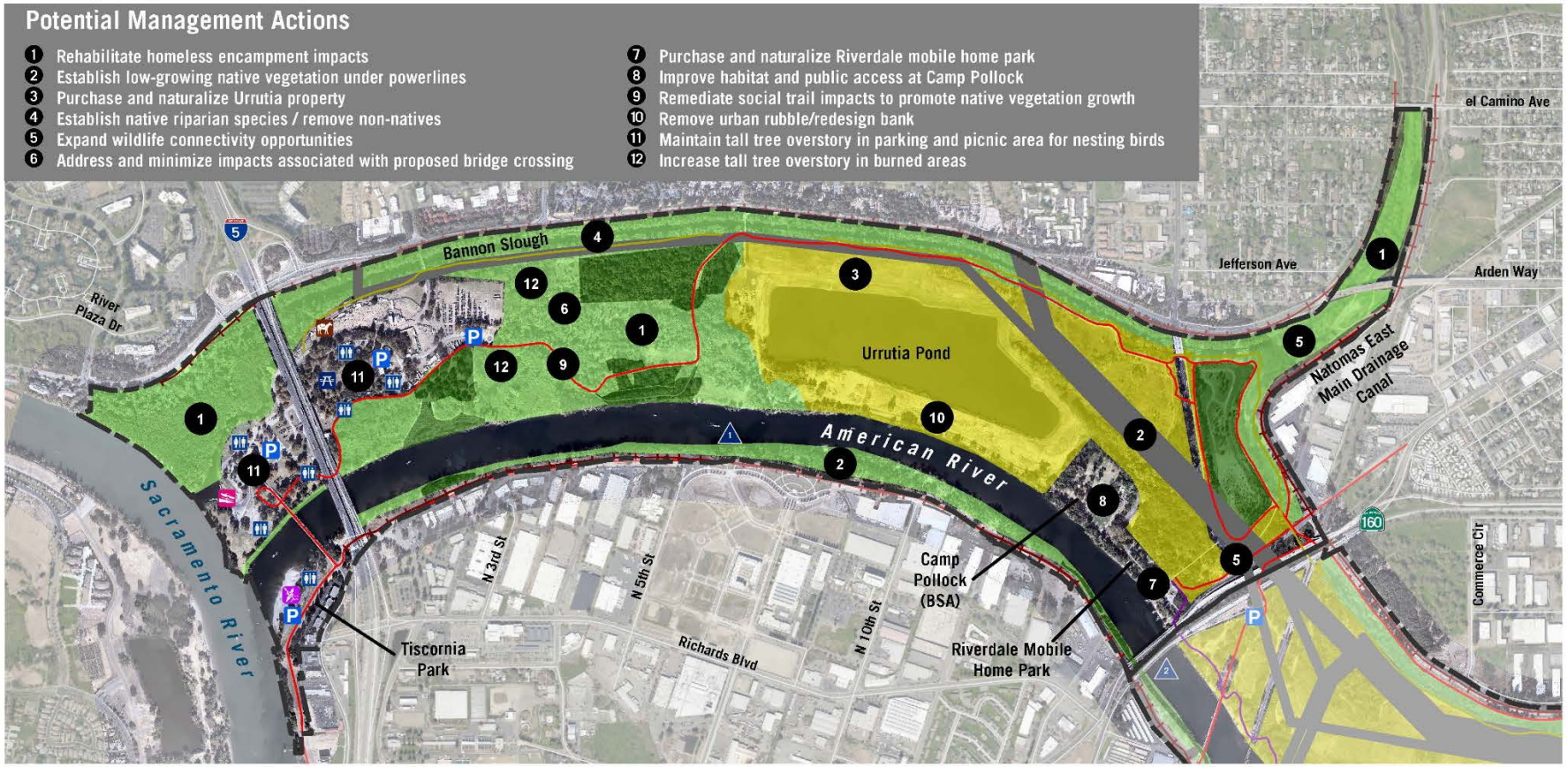
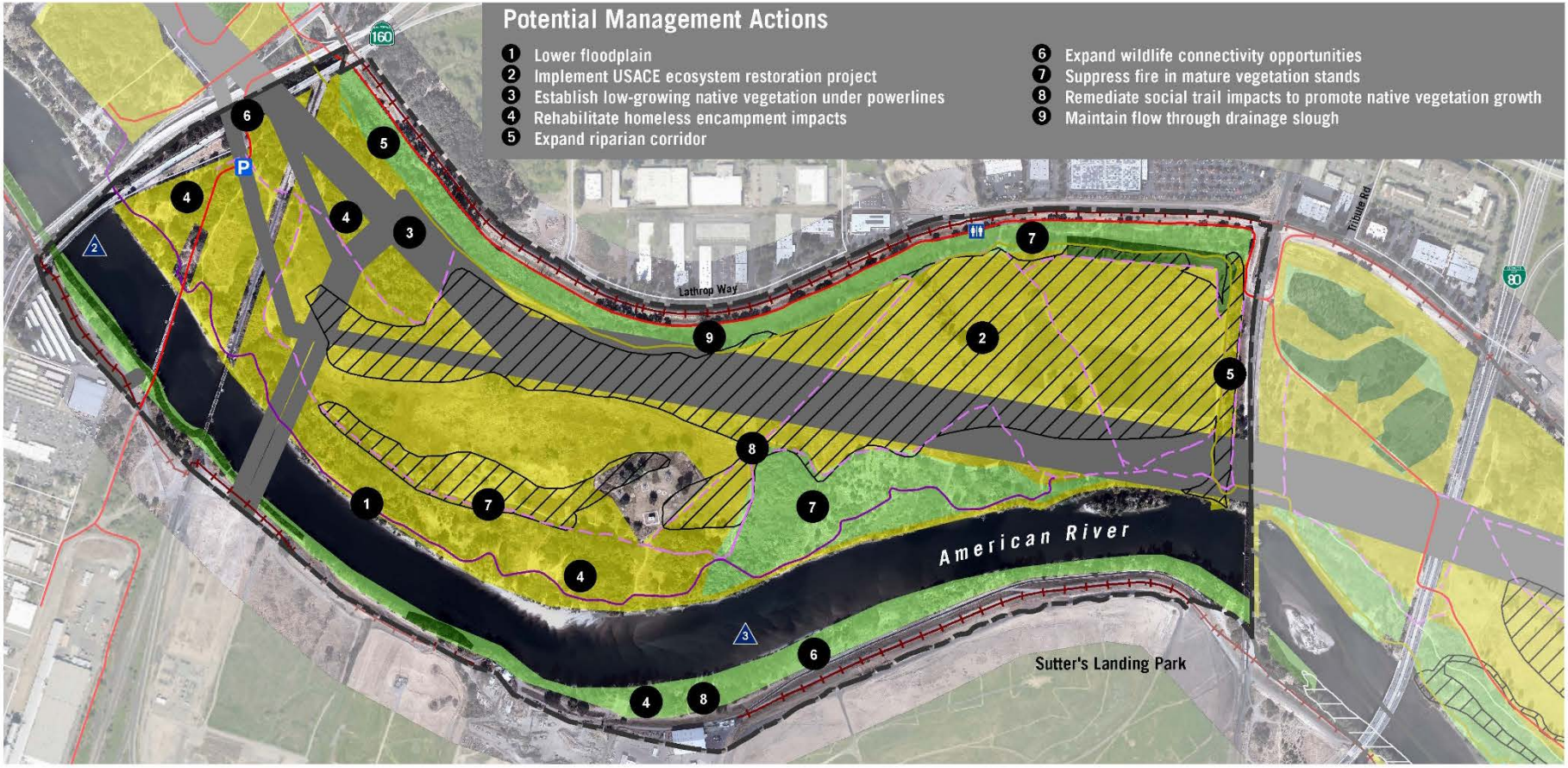
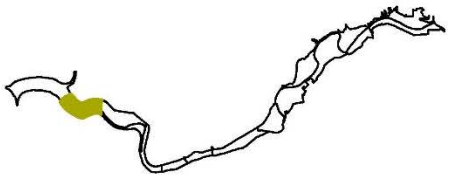


Figure 8-19
Area Plan 1 Discovery Park B

Plate PD-2: Potential Management Actions at Woodlake



Parkway Boundary
Powerline Easement
Equestrian/Hiking Trail
Pedestrian Trail
Bicycle/Pedestrian Trail
Off Paved Bicycle Trail
Levee
Parking
Restroom
River Mile
Proposed USACE Bank Protection
Proposed USACE Ecosystem Restoration
Management Category
Preservation
Conservation
Naturalization



0 500 1,000 Feet

Figure 8-21
Area Plan 2 Woodlake B

Plate PD-3: Potential Management Actions at Cal Expo

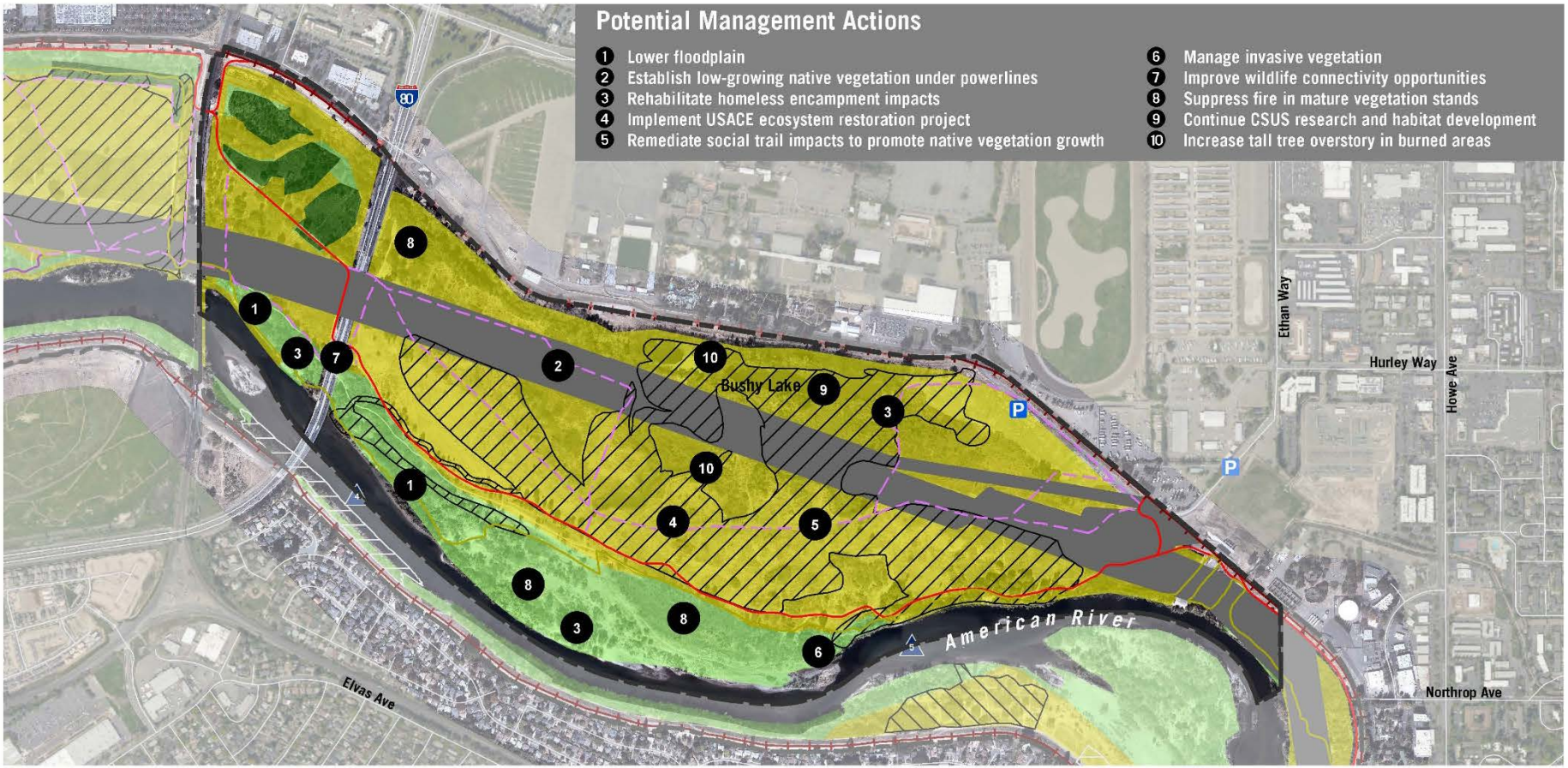


Figure 8-23
Area Plan 3 Cal Expo B

Plate PD-4: Potential Management Actions at Paradise Beach

Figure 8-25
Area Plan 4 Paradise Beach B

Plate PD-5: Potential Management Actions at Campus Commons

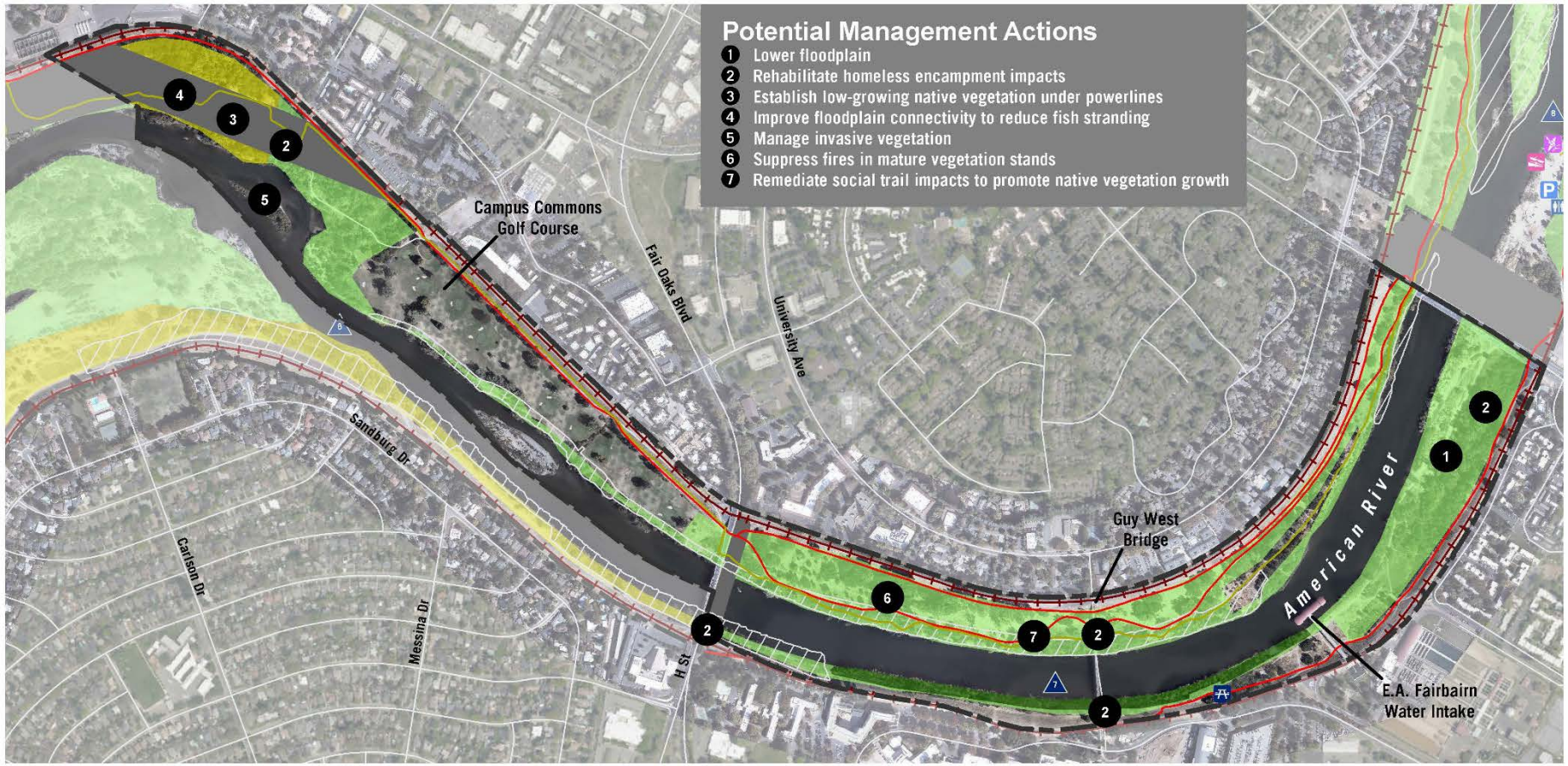


Figure 8-27
Area Plan 5 Campus Commons B

Plate PD-6: Potential Management Actions at Howe Avenue

Figure 8-29
Area Plan 6 Howe Avenue B

Plate PD-7: Potential Management Actions at Watt Avenue

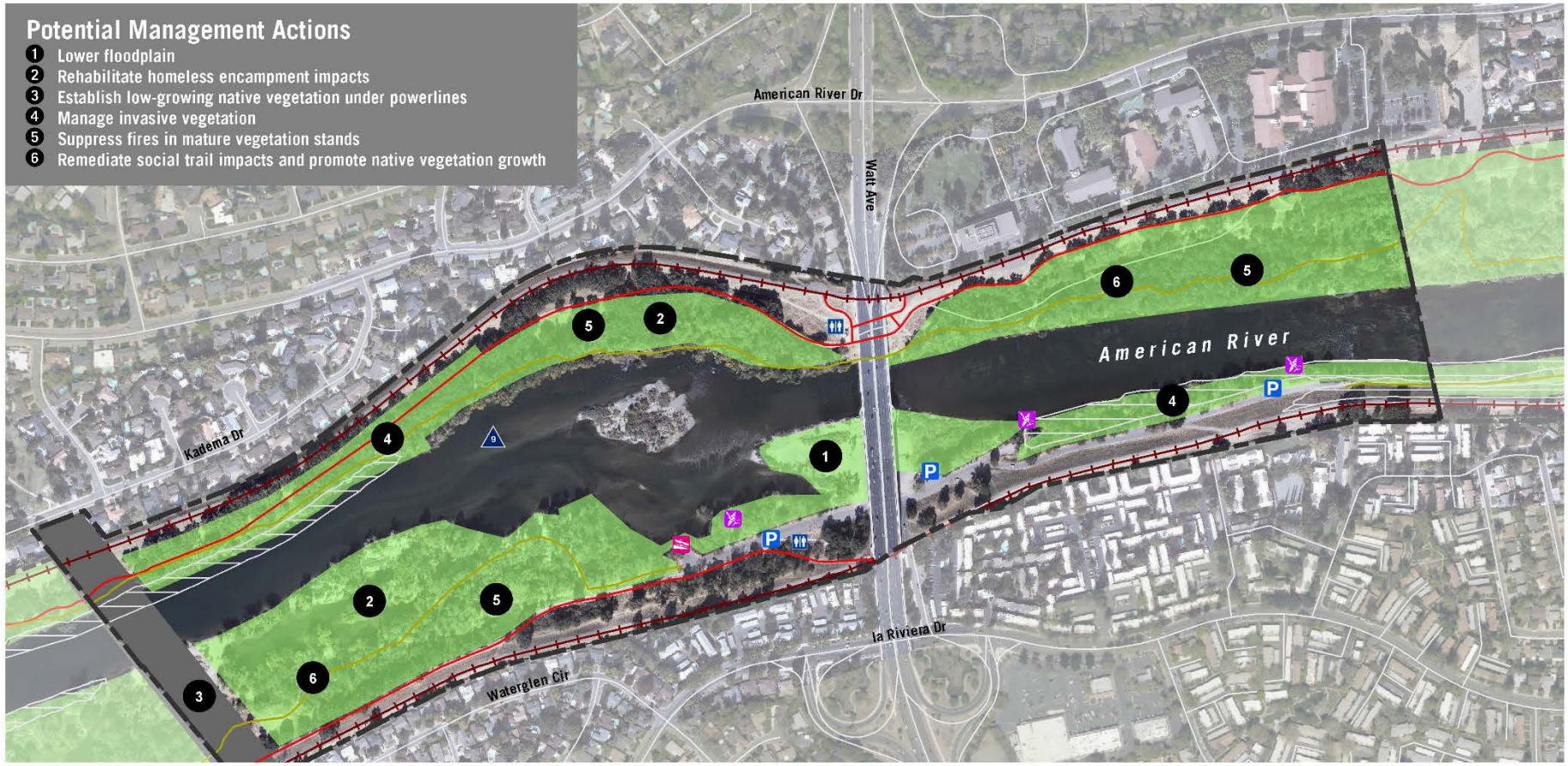


Figure 8-31
Area Plan 7 Watt Avenue B

Plate PD-8: Potential Management Actions at SARA Park

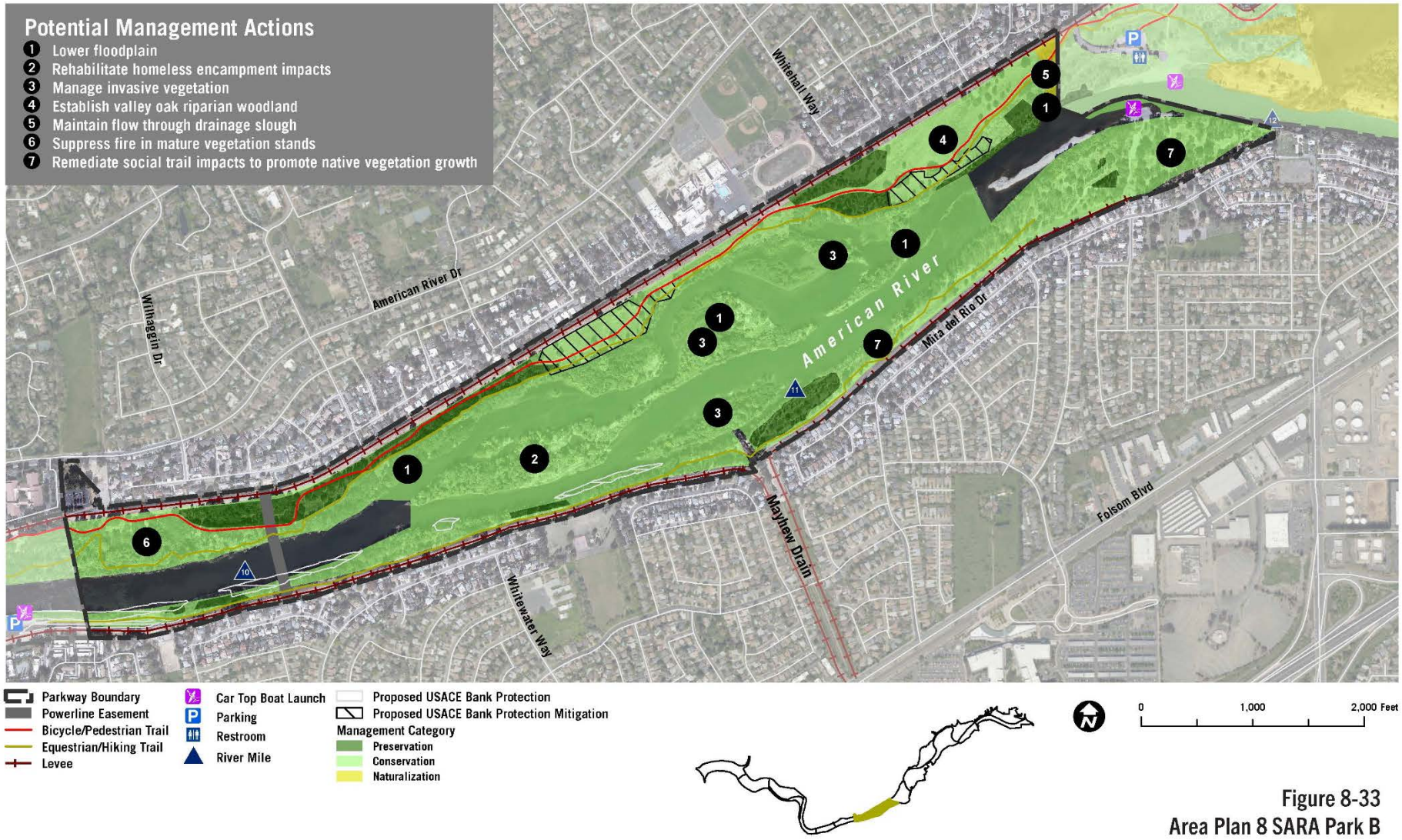


Figure 8-33
Area Plan 8 SARA Park B

Plate PD-9: Potential Management Actions at Arden Bar

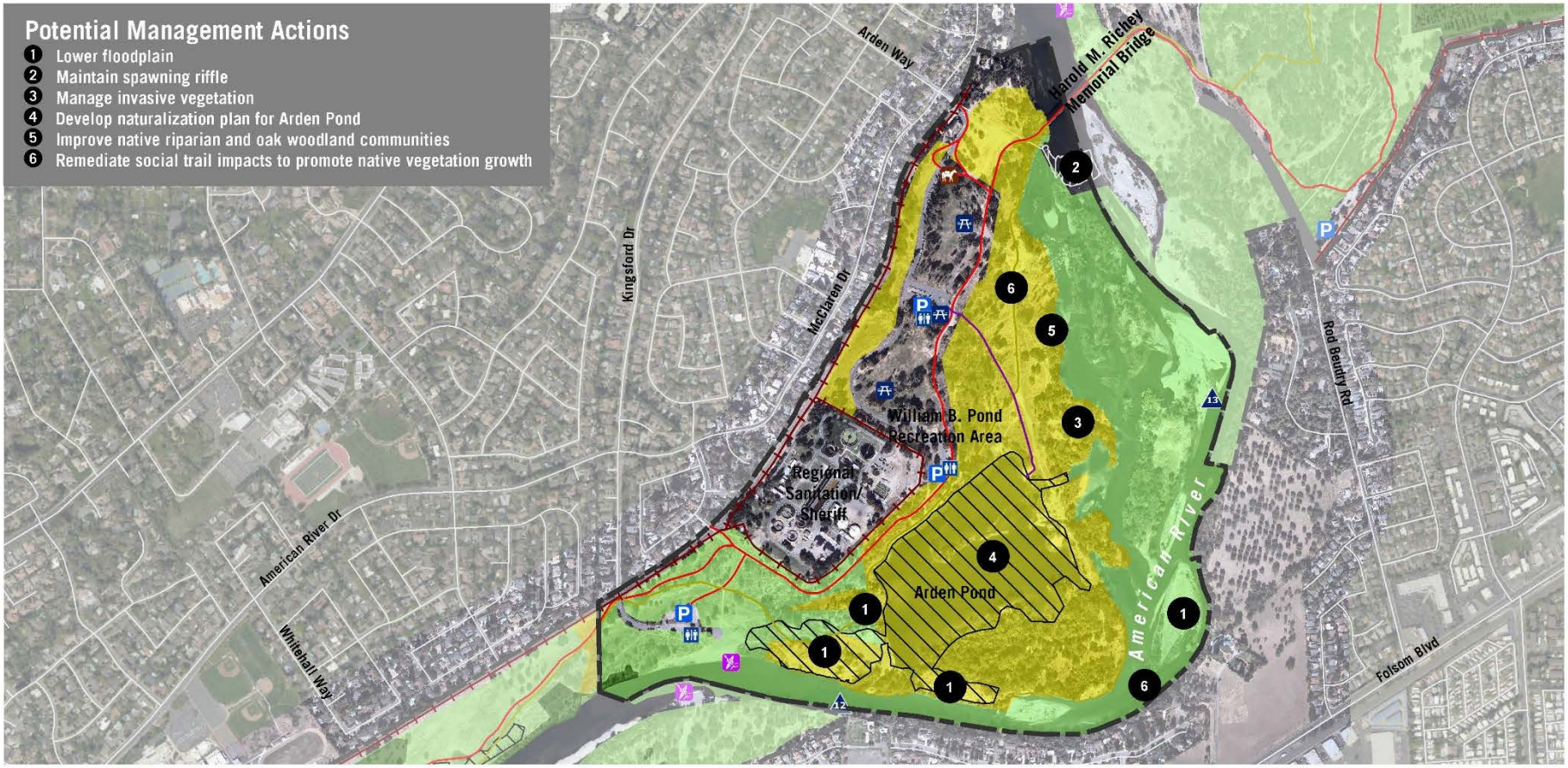
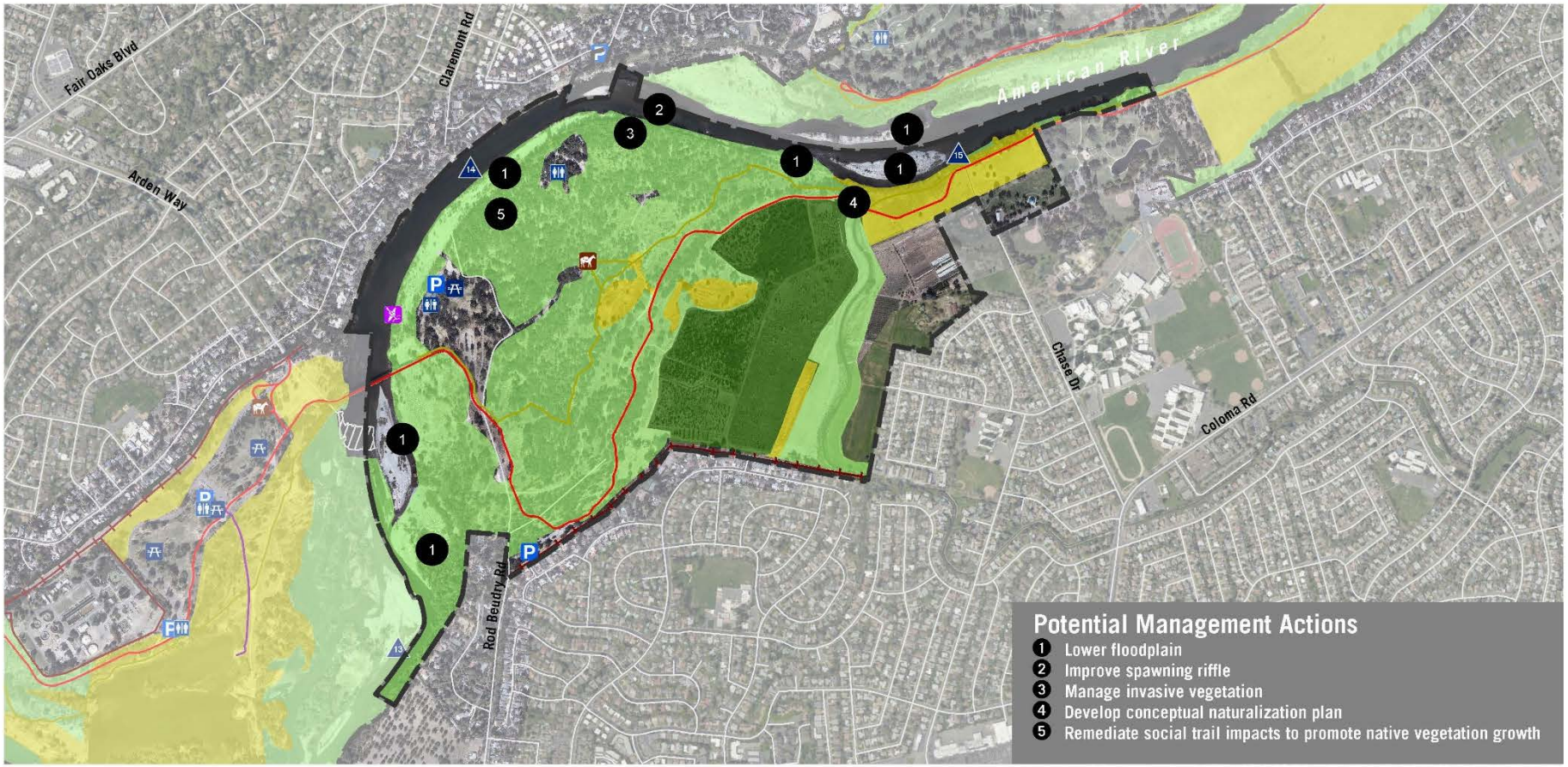


Figure 8-35
Area Plan 9 Arden Bar B

Plate PD-10: Potential Management Actions at River Bend Park



Parkway Boundary
Bicycle/Pedestrian Trail
Equestrian/Hiking Trail
Pedestrian Trail
Levee

Picnic Area
Car Top Boat Launch
Equestrian Staging
Parking
Restroom
River Mile

Exisiting Gravel Augmentation

Management Category
Preservation
Conservation
Naturalization

0 1,000 2,000 Feet

Figure 8-37
Area Plan 10 River Bend Park B

Plate PD-11: Potential Management Actions at Sarah Court Access

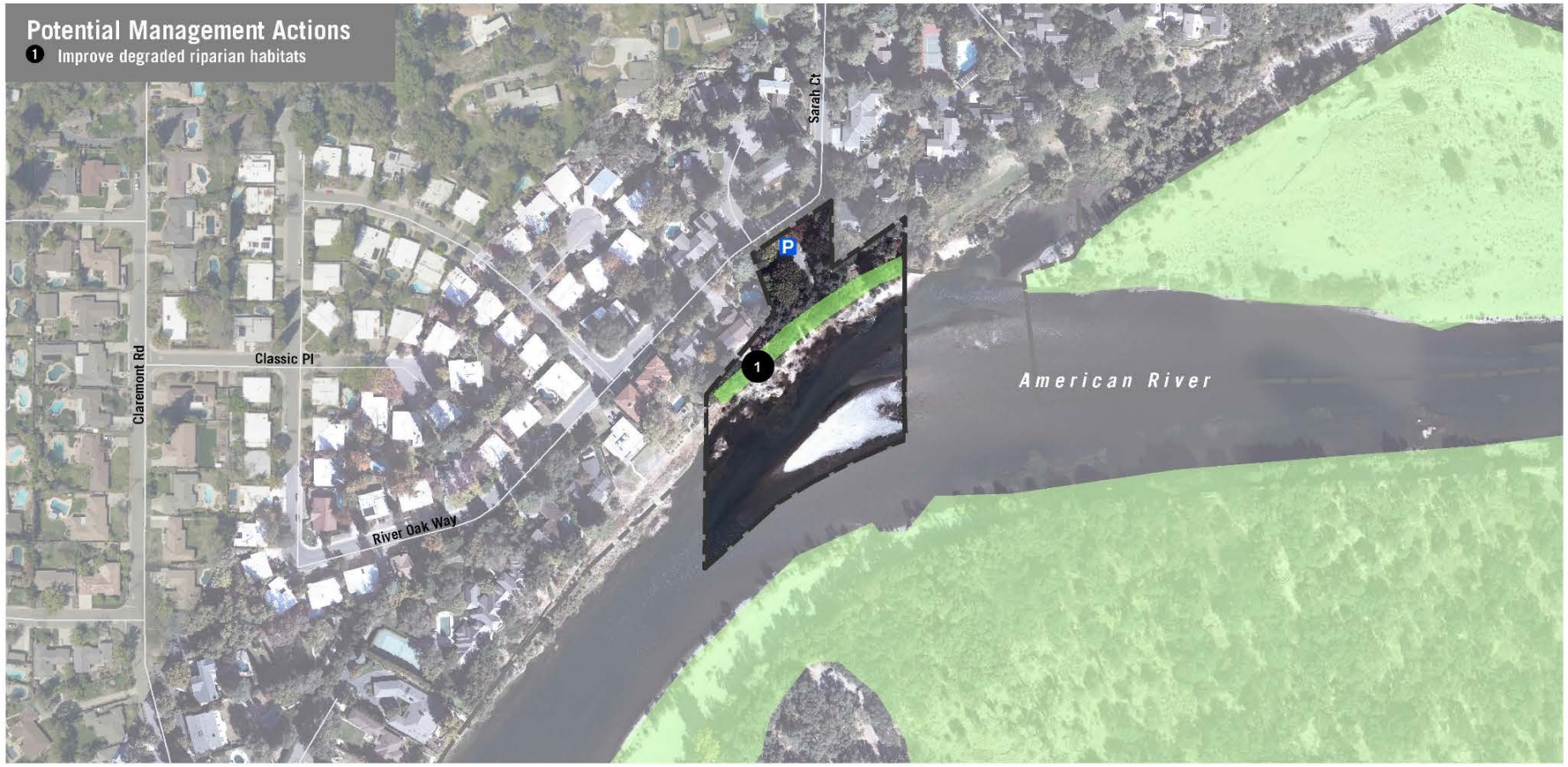


Figure 8-39
Area Plan 11 Sarah Court Access B

Plate PD-12: Potential Management Actions at Ancil Hoffman County Park

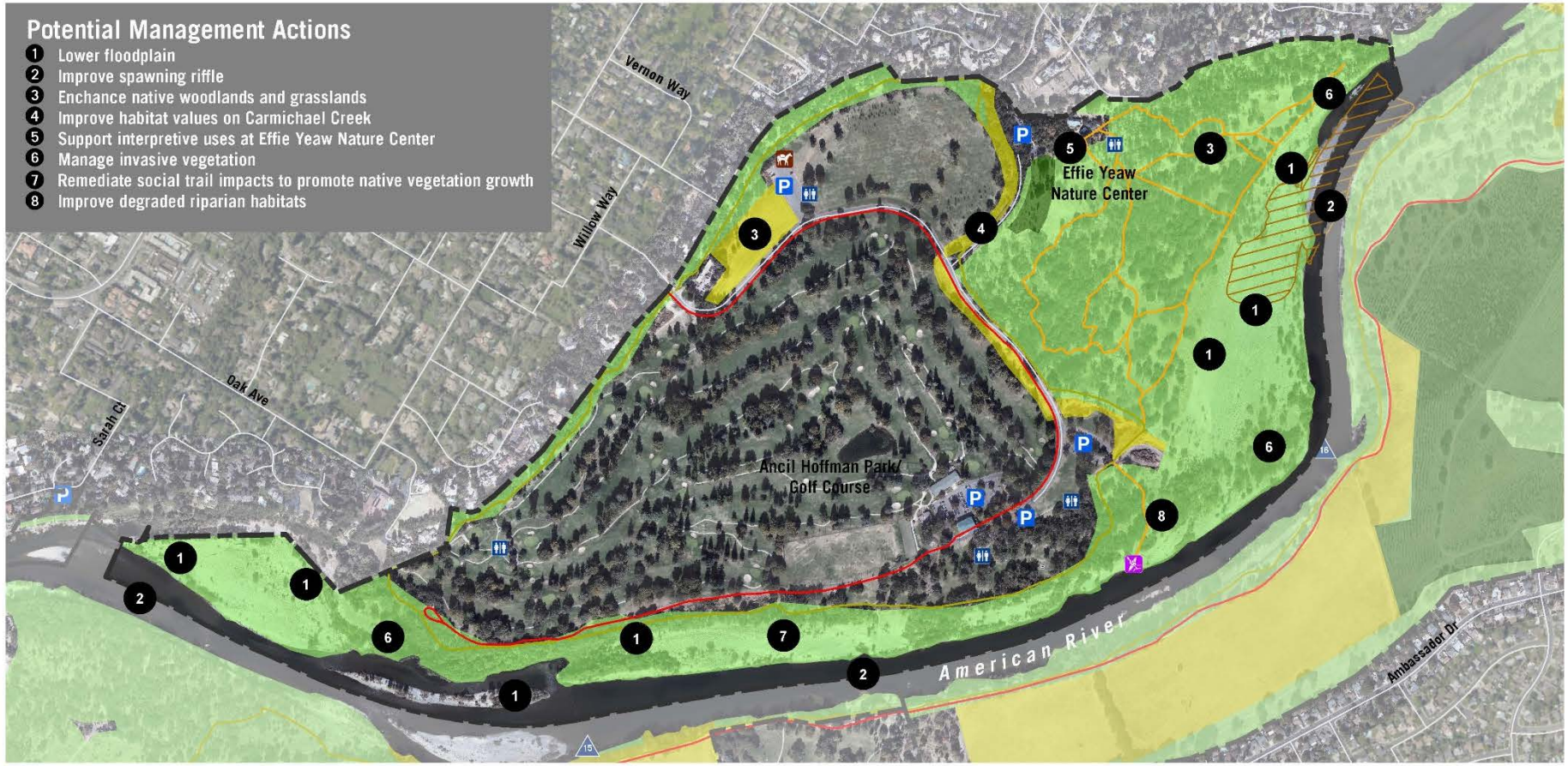


Figure 8-41
Area Plan 12 Ancil Hoffman County Park B

Plate PD-13: Potential Management Actions at Rossmoor Bar

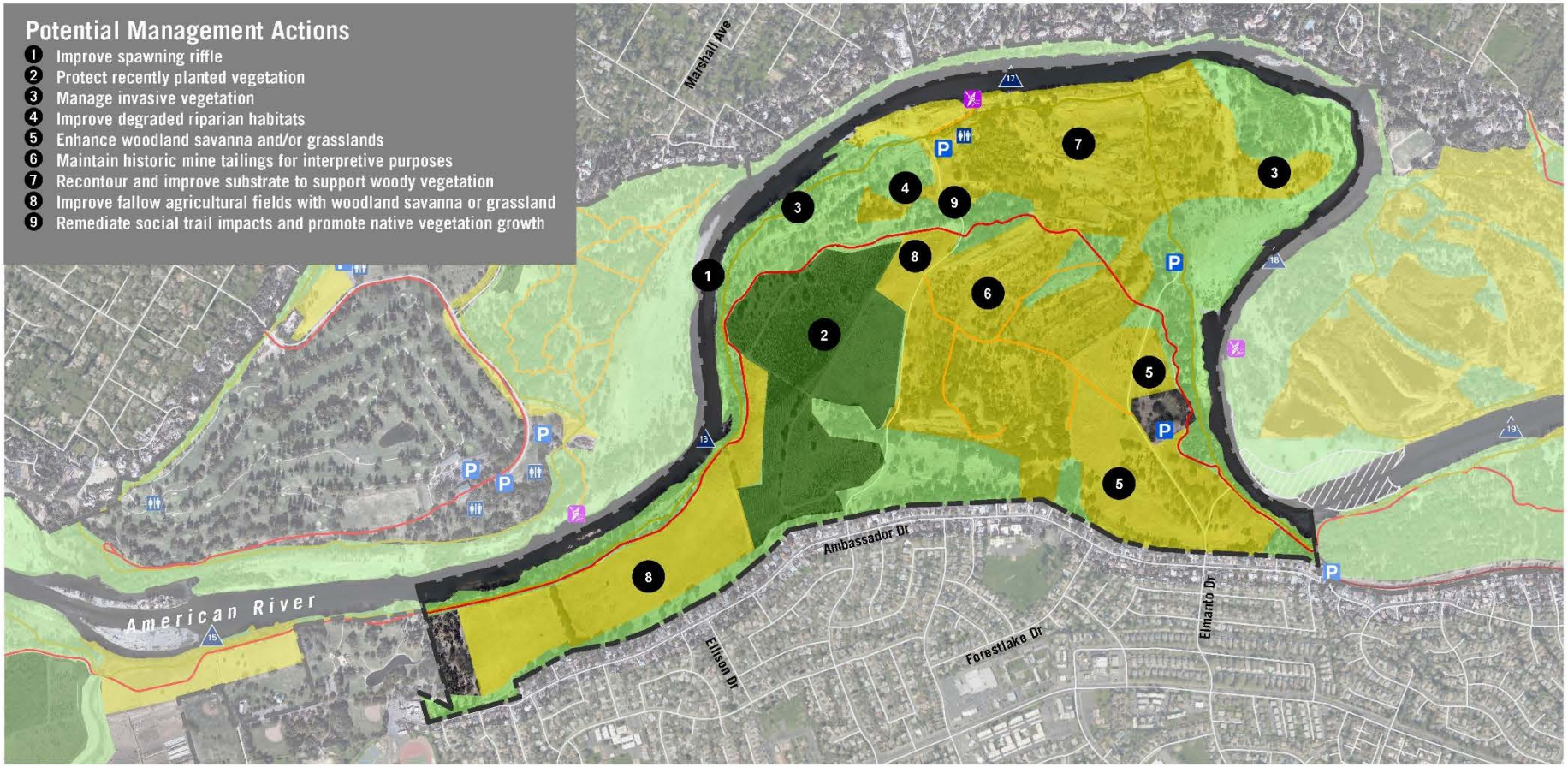


Figure 8-43
Area Plan 13 Rossmoor Bar B

Plate PD-14: Potential Management Actions at San Juan Bluffs

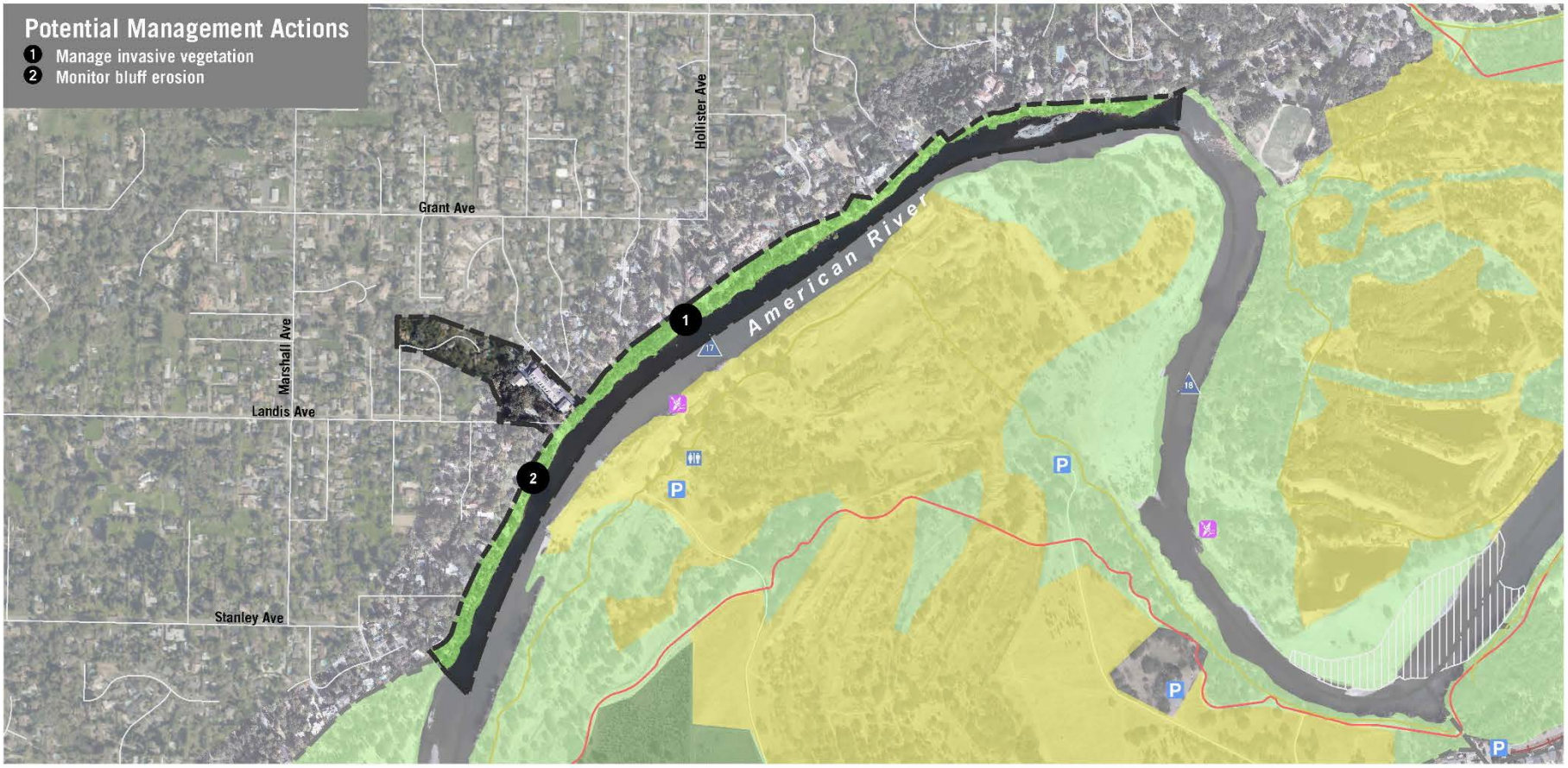


Figure 8-45
Area Plan 14 San Juan Bluffs B

Plate PD-15: Potential Management Actions at Sacramento Bar

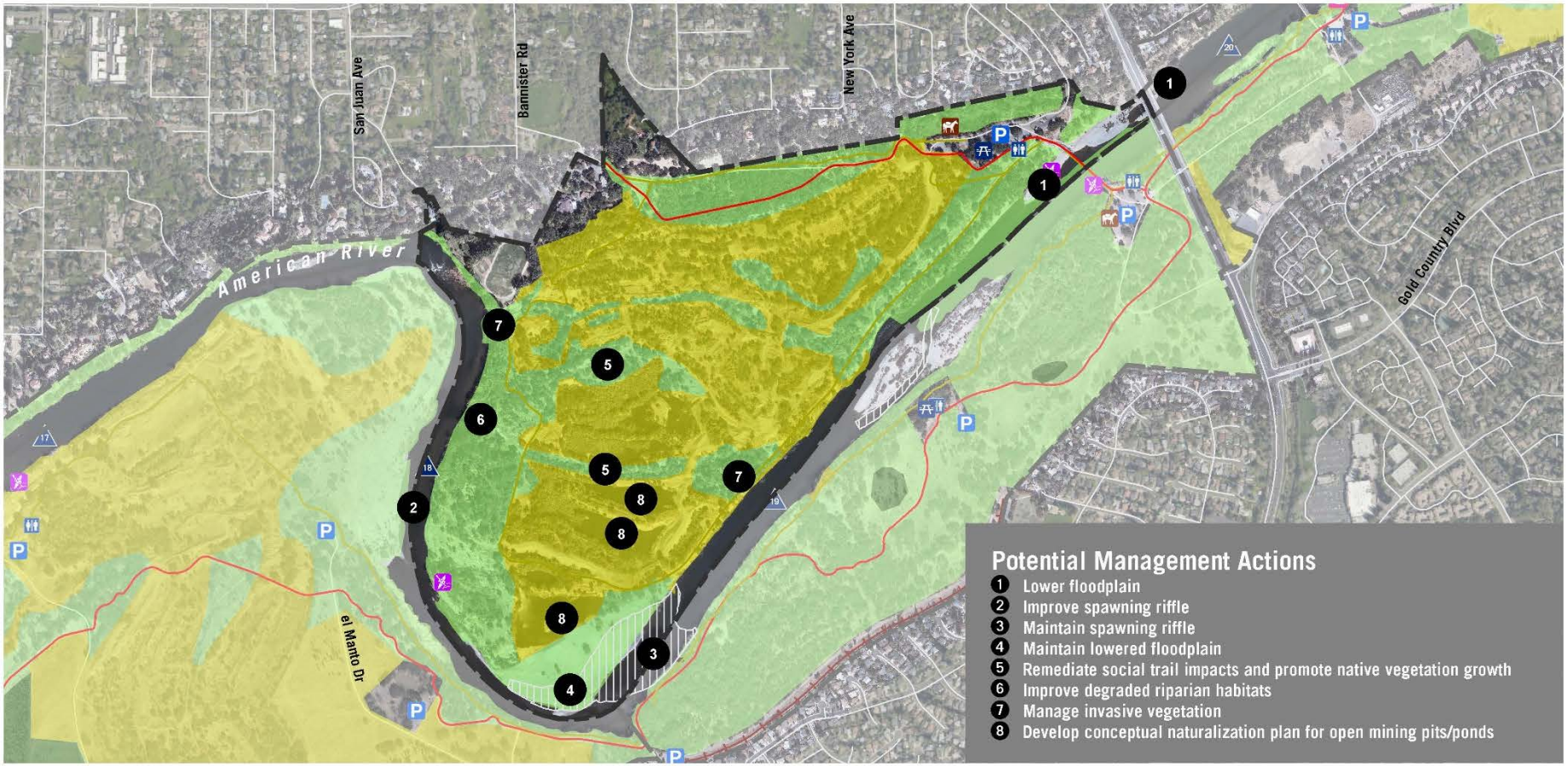


Figure 8-47
Area Plan 15 Sacramento Bar B

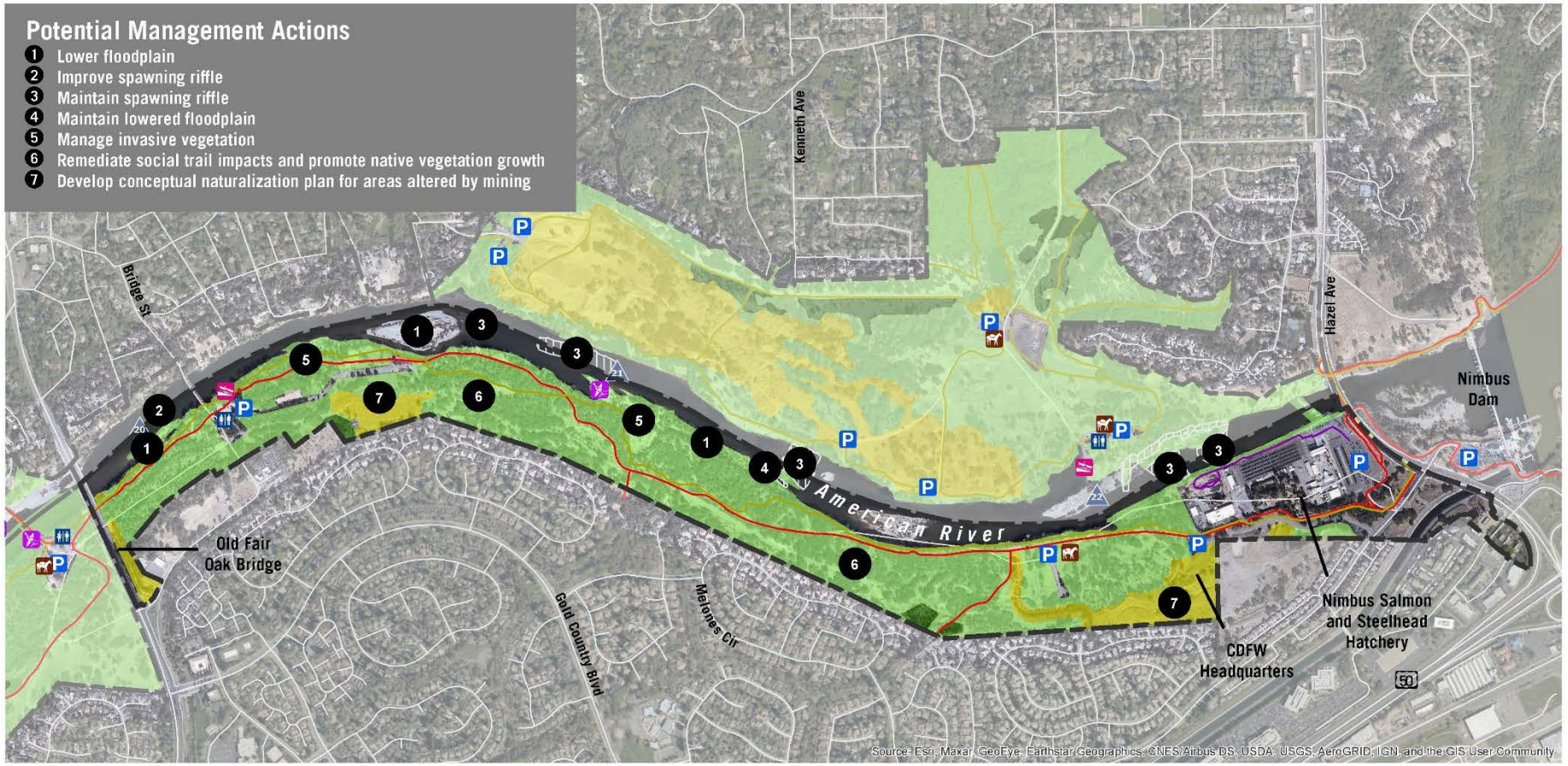
Plate PD-16: Potential Management Actions at Lower Sunrise

Figure 8-49
Area Plan 16 Lower Sunrise B

Plate PD-17: Potential Management Actions at Sunrise Bluffs

Figure 8-51
Area Plan 17 Sunrise Bluffs B

Plate PD-18: Potential Management Actions at Upper Sunrise

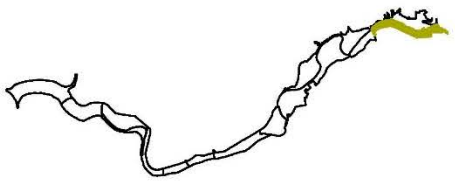


Parkway Boundary
Bicycle/Pedestrian Trail
Equestrian/Hiking Trail
Pedestrian Trail

Boat ramp, Trailer boat
Car Top Boat Launch
Equestrian Staging
Parking
Restroom
River Mile

Existing Gravel Augmentation

Management Category
Preservation
Conservation
Naturalization



0 1,000 2,000 Feet

Figure 8-53
Area Plan 18 Upper Sunrise B

Plate PD-19: Potential Management Actions at Sailor Bar

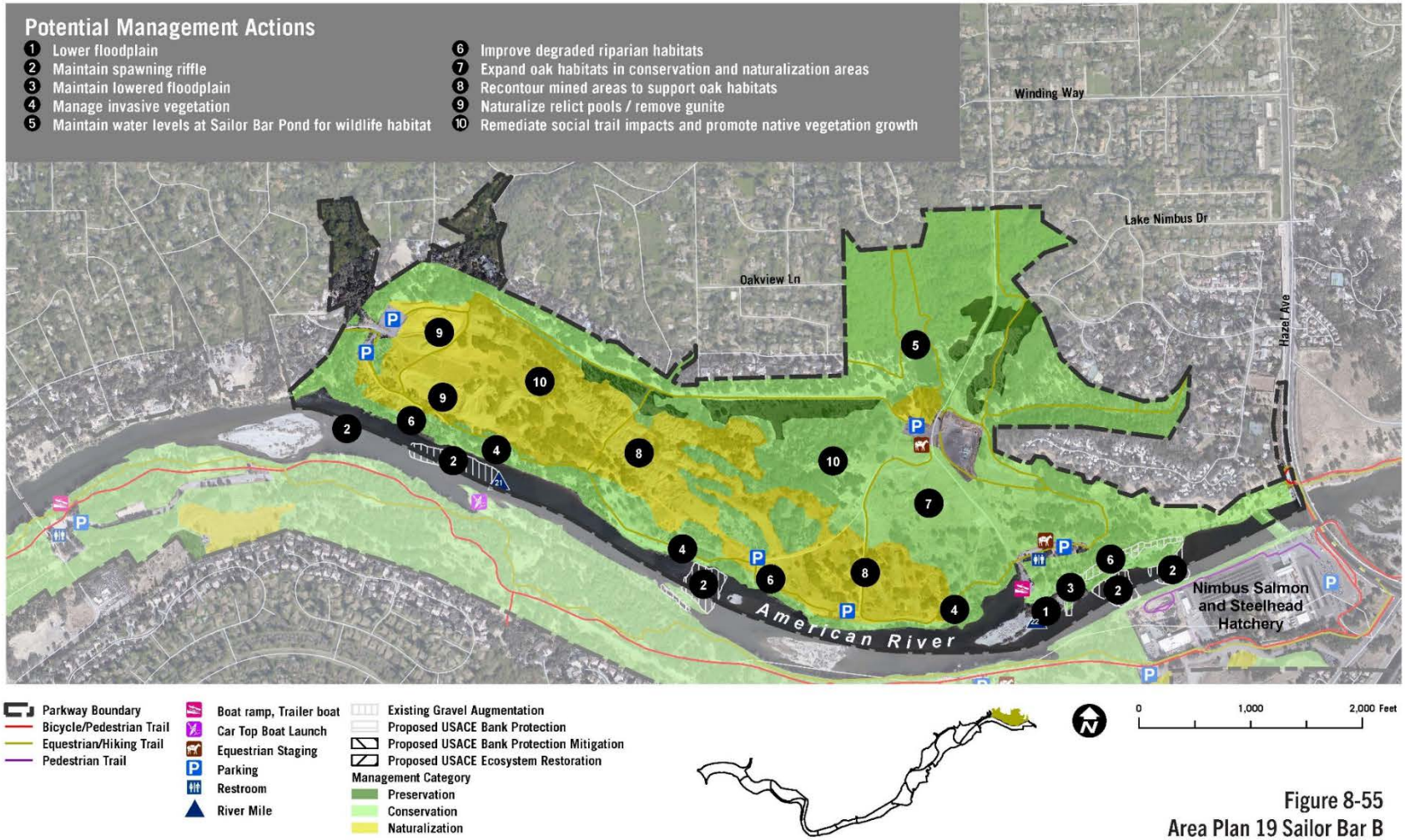


Figure 8-55
Area Plan 19 Sailor Bar B

Appendix PD-4 NRMP Management Actions and Area Plan Table

Appendix PD-4: ARPPU Area Plans Land Use Designations and NRMP Potential Resource Management Actions

	Discovery Park	Woodlake	Cal Expo	Paradise	Campus Commons	Howe Ave.	Watt Ave.	SARA Park	Arden Bar	River Bend Park	Sarah Court Access	Ancil Hoffman County Park	Rossmoor Bar	San Juan Bluffs	Sacramento Bar	Lower Sunrise	Sunrise Bluffs	Upper Sunrise	Sailor Bar
Total Acres	559.1	373.0	408.2	108.2	152.0	160.0	136.0	254.0	36.0	453.0	1.6	386.0	553.0	23.0	290.0	159.0	26.5	397.0	375.0
LAND USE																			
Developed Recreation	X	X		X	X	X	X	X	X	X		X	X		X	X		X	X
Limited Recreation	X	X	X			X	X	X	X	X			X					X	X
Protected	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Nature Study	X		X							X		X			X				X
Recreation Reserved									X										
Open Space Preserve														X	X		X		X
Potential Management Actions																			
Remediate social trail impacts and/to promote native vegetation growth	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X	X
Lower Floodplain		X	X	X	X	X	X	X	X	X		X			X	X	X	X	X
Manage invasive vegetation			X	X	X	X	X	X	X			X	X	X	X	X	X	X	X
Rehabilitate homeless encampments impacts	X	X	X	X	X	X	X	X											
Improve degraded riparian habitats											X	X	X		X	X	X		X
Improve spawning rifle										X		X	X		X	X	X	X	
Suppress fire in mature vegetation stands		X	X	X	X	X	X	X											
Establish low- growing native vegetation under power lines	X	X	X		X	X	X												
Maintain spawning riffle									X						X	X		X	X
Develop conceptual naturalization plan (altered by mining)									X	X					X			X	
Maintain lowered floodplain															X	X		X	X
Expand/Improve wildlife connectivity opportunities	X	X	X																
Monitor bluff erosion														X		X	X		
Enhance woodland savannah and/or grasslands													X			X			
Implement USACE ecosystem restoration project		X	X																
Increase tall tree overstory in burned areas	X		X																
Maintain flow through drainage slough		X						X											
Address and minimize impacts associated with proposed bridge crossing	X																		
Continue CSUS research and habitat development			X																
Enhance native woodlands and grasslands												X							
Establish native riparian species/remove non-natives	X																		
Establish valley oak riparian woodland								X											
Expand oak habitats in conservation and naturalization areas																			X
Expand riparian corridor		X																	

Appendix PD-4: ARPPU Area Plans Land Use Designations and NRMP Potential Resource Management Actions

	Discovery Park	Woodlake	Cal Expo	Paradise	Campus Commons	Howe Ave.	Watt Ave.	SARA Park	Arden Bar	River Bend Park	Sarah Court Access	Ancil Hoffman County Park	Rossmoor Bar	San Juan Bluffs	Sacramento Bar	Lower Sunrise	Sunrise Bluffs	Upper Sunrise	Sailor Bar
Improve fallow agricultural fields with woodland savannah and/or grassland													X						
Improve floodplain connectivity to reduce fish stranding					X														
Improve habitat and public access at Camp Pollock	X																		
Improve habitat values on Carmichael Creek												X							
Improve native riparian and oak woodland communities									X										
Maintain historic mine tailings for interpretive purposes													X						
Maintain tall tree overstory in parking and picnic area for nesting birds	X																		
Maintain water levels at Sailor Bar Pond for wildlife habitat																			X
Naturalize relict pools/remove gunite																			X
Protect recently planted vegetation													X						
Purchase and naturalize Riverdale mobile home park	X																		
Purchase and naturalize Urrutia property	X																		
Recontour and improve substrate to support woody vegetation													X						
Recontour mined areas to support oak habitats																			X
Remove urban rubble/redesign bank	X																		
Support interpretive uses at Effie Yeaw Nature Center												X							

Appendix HY-1_Hydrology Model Analysis and Figures

NATURAL RESOURCE MANAGEMENT PLAN MODELING SUPPORT PROJECT

CUMULATIVE HYDRAULIC IMPACT ASSESSMENT

Prepared for
Sacramento Area Flood Control Agency
Sacramento County Department of Regional Parks

Prepared by
cbec, inc.

October 29, 2021

cbec Project #: 21-1023

This report is intended solely for the use and benefit of the Sacramento Area Flood Control Agency and the Sacramento County Department of Regional Parks. No other person or entity shall be entitled to rely on the details contained herein without the express written consent of cbec, inc., eco engineering, 2544 Industrial Boulevard, West Sacramento, CA 95691.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

GLOSSARY OF ACRONYMS

Acronym	Meaning
2D	two-dimensional
AFO	American River Fair Oaks USGS gage (#)
ARCF	American River Common Features
cbec	cbec, inc. eco engineering
cfs	cubic feet per second
CVHS	Central Valley Hydrology Study
CVPIA	Central Valley Project Improvement Act
DEM	digital elevation model
EG	existing ground
FG	future grade
ft	feet
HEC-RAS	Hydraulic Engineering Center River Analysis System
HWM	highwater mark
kcfs	thousand cubic feet per second
LAR	lower American River
LiDAR	Light Detection and Ranging
NAVD 88	North American Vertical Datum of 1988
NRMP	Natural Resources Management Plan
Parkway	American River Parkway
RM	river mile
RTK-GPS	Real-Time Kinematic Global Positioning System
s	second
SAFCA	Sacramento Area Flood Control Agency
SCDRP	Sacramento County Department of Regional Parks
SHIP	spawning habitat improvement project
SREL	Sacramento River East Levee
SWW	Sacramento Weir Widening
USACE	United States Army Corps of Engineers
USGS	United States Geological Society
Water Forum	the Sacramento Water Forum
WSE	water surface elevation

1 INTRODUCTION

The Sacramento County Department of Regional Parks (SCDRP), in collaboration with the Sacramento Flood Control Agency (SAFCA) and local experts and stakeholders, have developed a Natural Resource Management Plan (NRMP) for the American River Parkway (SCDRP 2021). cbec, inc. eco engineering (cbec) has been tasked with assessing the hydraulic impacts of the proposed NRMP management actions within the lower American River (LAR). Section 2.1 provides details related to the NRMP sites.

In addition to the NRMP sites, this hydraulic impact assessment will incorporate the cumulative effects of other LAR projects that are in various stages of development. These other projects include:

- **ARCF projects** - the United States Army Corps of Engineers' (USACE) American River Common Features (ARCF) projects
- **CVPIA SHIP sites** - the United States Bureau of Reclamation, the United States Fish and Wildlife Service, and the Sacramento Water Forum's (Water Forum) Central Valley Project Improvement Act (CVPIA) Spawning Habitat Improvement Projects (SHIP)
- **Water Forum rearing projects** - The Sacramento Water Forum's (Water Forum) salmonid rearing habitat projects

For the ARCF projects, USACE, SAFCA, the California Department of Water Resources, and local experts and stake holders have been tasked with comprehensively assessing bank and levee protection for the lower 14 miles of LAR and 15 miles along the Sacramento River East Levee (SREL). Within LAR, this process has identified high priority sites that are currently under contract for new bank protection and habitat mitigation site designs (i.e., American River Contracts 1, 2, 3, and 4). This cumulative hydraulic assessment includes the latest ARCF project designs, as described in Section 2.2.

For CVPIA SHIP sites, Section 3406 (b)(13) of CVPIA directs the Department of Interior to develop and implement a program to restore and replenish, as needed, salmonid spawning gravel lost due to the construction and operation of Central Valley Project dams, bank protection projects, and other actions that have reduced the availability of spawning gravel and rearing habitat. The LAR CVPIA SHIP sites seek to add spawning gravels to LAR by constructing spawning riffles and side channels. This cumulative hydraulic assessment includes 10 CVPIA SHIP site designs, as described in Section 2.3.

For the Water Forum rearing projects, cbec (2020a) identified and prioritized 53 potential salmonid rearing habitat projects within LAR. This cumulative hydraulic assessment includes 8 of the sites that are most likely to be developed, as described in Section 2.4.

The cumulative hydraulic analysis was based on the 2017 topo-bathymetric digital elevation model (DEM) (Quantum Spatial, 2018 and cbec, 2018) and two-dimensional (2D) hydraulic models (cbec 2019 and cbec 2021a) developed for the LAR Current Condition DEM and 2D Model Development Project (a joint venture with the Water Forum and SAFCA) and USACE's ARCF project. cbec (2020b) documented the effects of ten 10 % concept designs for CVPIA SHIP sites, cbec (2021b) documented the hydraulic impacts of the latest ARCF project designs, and no prior reports have assessed hydraulic impacts for the Water Forum rearing sites, NRMP actions, or the cumulative effect of all these projects. This report focuses on the hydraulic

impacts of NRMP sites and the cumulative hydraulic effects of NRMP actions, ARCF projects, CVPIA sites, and Water Forum rearing projects.

1.1 COORDINATE SYSTEM AND UNITS

The model and data are in U.S. customary units. The horizontal projection is NAD83 NSRS 2007 State Plane CA Zone II (US feet) and the vertical datum is the North American Vertical Datum of 1988 (NAVD 88), feet.

1.2 ASSUMPTIONS AND LIMITATIONS

- The modeling assessment was guided by the significance criteria identified in the Environmental Impact Report (EIR). For water surface elevation (WSE) impacts, WSE increases are considered significant if WSEs are increased (i.e., greater than 0.0 ft relative to the existing condition) within the area of incipient levee overtopping (approximately river mile 7 to river mile 11.5) for the 160,000 and 192,000 cfs cumulative impact scenario. Outside of that area, an increase in WSE of greater than 0.1 ft is considered an impact if the wetted extent is in contact with or immediately adjacent to a federal or non-federal levee (i.e., river mile 18.5) for the 115,000 and 160,000 cfs cumulative impact scenario. For velocity impacts, model results are considered an impact (or further analysis is warranted) if increases in velocity occur under the 115,000 and/or 160,000 cfs cumulative scenario that could affect the structural stability of the levee system or otherwise damage Parkway infrastructure or protected habitat.
- The projects and management actions included in this hydraulic analysis range from conceptual polygons to 100% level of design; therefore, the results are subject to further analysis if a later stage of design differs from how a project was included in this hydraulic analysis.
- This analysis is intended to serve as a planning-level study to identify potentially problematic projects and the cumulative hydraulic impacts of the various ongoing efforts within LAR. If impacts are found, those will be highlighted for future project designers to address.
- The American River Contract 3 designs for ARCF are included at 35% level of design. These sites are currently being revised and the revised sites may have a high WSE impact. NRMP management actions may need to be revised in the vicinity of the American River Contract 3 sites if the WSE impacts of those ARCF projects yield a cumulative impact.

2 PROJECT SETTING

The American River Parkway (Parkway) encompasses about 5,000 acres at the foot of the American River watershed. Most of this landmass is confined by levees whose purpose is to safely contain watershed runoff released into the Parkway from Folsom Dam. During periods of intense rainfall in the watershed, the dam's water control manual prescribes the volume of these releases. The downstream levee system, which is part of a much larger flood management system known as the Sacramento River Flood Control Project, is designed based on engineering criteria tied to the water surface elevations (WSEs) generated by these prescribed releases. These WSEs are affected by the topography and land cover of the Parkway. Accordingly, proposed changes in topography and/or land cover that have the potential to raise WSEs must be reviewed and approved by the federal, state, and local agencies responsible for managing the

levee system in the Parkway. This process creates considerable uncertainty for agencies managing the Parkway, who are mandated under the American River Parkway Plan "to protect, enhance, and expand the Parkway's native willow, cottonwood, and valley oak-dominated riparian and upland woodlands that provide important shaded riverine aquatic habitat, seasonal floodplain, and riparian habitats; and the native live oak and blue oak woodlands and grasslands that provide important terrestrial and upland habitats." (Policy 3.2). To reduce this uncertainty and avoid landscape and flood risk management conflicts in the Parkway, local interests have worked with USACE and the California Central Valley Flood Protection Board to create a model – LAR2D - that is intended to serve as a planning and regulatory tool for managing proposed changes to the topography and land cover of the Parkway in a manner that preserves the design capacity and structural integrity of the flood control system.

Several coincident developments have created the need for this tool and the opportunity to develop it. First, is the implementation of the Congressionally authorized ARCF project which in its current phase is focused on ensuring that the levee system downstream of Folsom Dam can safely convey releases up to 160,000 cfs from Folsom Dam, recently made possible via the Folsom Dam Modification Project/Joint Federal Project. Under this authority, USACE is directed to install bank protection along lengthy reaches of the levee system in the Parkway to accommodate the increased velocities that this release will generate and avoid erosion that could destabilize the levee system, particularly in the narrowest reach of the system between Watt Avenue and H Street bridges. USACE is also directed to widen the Sacramento Weir and Bypass near the mouth of the American River to route more flow into the Yolo Bypass to avoid increasing the flow and WSEs downstream of the Sacramento River and American River confluence. The bank protection improvements, including off site mitigation for unavoidable impacts to Parkway fish and wildlife habitat, involve substantial changes to the topography and land cover of the Parkway. The Sacramento Weir Widening (SWW) project increases the conveyance capacity of the levee system downstream of the American River and lowers water surface elevations in the lower reaches of the Parkway.

In addition to these changes, SCDRP has drafted the NRMP (SCDRP 2021) for the Parkway, which serves as a roadmap for implementing Parkway Plan Policy 3.2 and other Parkway Plan policies that have the potential to alter the land cover of the Parkway. Finally, the Sacramento Water Forum has partnered with the U. S. Bureau of Reclamation under the authority of the Central Valley Project Improvement Act to develop a series of landscape alterations in the Parkway that are intended to provide improved spawning and rearing habitat for American River salmon and steelhead to ameliorate the impacts on these fish species of being cut off from their historic habitat in the watershed above Folsom Dam. Some of these improvements have been incorporated in the NRMP, some have not.

LAR2D has been created to guide the planning and management of these landscape and flood system modifications to ensure that the cumulative effect of these modifications does not compromise the design capacity or structural integrity of the flood control system in the Parkway. Toward this end, the model establishes an existing condition baseline for assessing cumulative impacts that represents the state of the flood control system and Parkway landscape prior to implementation of the current phase of the ARCF project (Sacramento Weir and Bypass widening and Parkway bank protection including off-site mitigation); the NRMP; and the Water Forum fish habitat improvement projects not currently

incorporated in the NRMP. The model is thus able to reflect the cumulative effects of these changes on the operation of the flood system by comparison to the existing condition. These effects are measured first and foremost by comparing the WSEs produced under the existing and cumulative condition by three recognized Folsom Dam release volumes: 115,000 cfs – the historic design release of the flood system adopted at the time Folsom Dam was constructed; 160,000 cfs – the design release identified by Congress as part of its 1999 ARCF authorization for managing the most extreme flood events in the watershed; and 192,000 cfs – the release which causes levee overtopping at the lowest points in the levee system. These effects are also measured by comparing the flow velocities produced by these releases throughout the Parkway.

The existing condition assumes the 2018 revision to the Water Control Manual for Folsom Dam signed by USACE and the Bureau of Reclamation is in place. This manual allows for greater flood storage in the reservoir beyond what the preceding operations manual (1986) designated, specifically a variable space allocation with an operating range of 400,000 – 600,000 acre-feet. These existing physical and operational conditions constitute the hydrologic existing condition and are carried forward in the analysis described below.

2.1 NRMP SITES

The NRMP report (SCRP 2021) divides LAR into 19 sections and describes potential management actions. These actions range from rehabilitating homeless encampments and areas impacted from gravel mining, managing invasive species, revegetating social trails, restoring native habitats, and adding/managing Parkway facilities (e.g., bathrooms and boat ramps). Site polygons were developed based on the management actions identified in the NRMP report (SCDRP 2021). See Figures 1 and 2 for an overview of the NRMP management action locations.

2.2 ARCF PROJECTS

ARCF projects are in various stages of development. cbec (2021b) documented the hydraulic effects of the ARCF projects, as shown in Table 1. See Figures 3 and 4 for an overview of the ARCF project site locations.

Table 1. List of ARCF projects included in the analysis*

Site Name	American R. Contract #	Bank Protection	Mitigation	Design Level	Designer
2-1	1	X		100 %	NHC
Glenn Hall	1		X	85%	USACE-SPK
Rio Americano	1		X	85%	USACE-SPK
2-2	2	X		65%	NHC
2-3	2	X		90%	NHC
Arden Pond	2		X	90%	HDR
Rossmoor	2		X	85%	USACE-SPK
1-1	3	X		35%	USACE-MVP

Site Name	American R. Contract #	Bank Protection	Mitigation	Design Level	Designer
3-1	3	X		35%	USACE-MVP
4-1	3	X		35%	USACE-MVP
Urrutia	4		X	10%	cbec

*Same list of sites and level of design as cbec (2021b)

2.3 CVPIA SHIP SITES

cbec (2020b) documented the effects of ten 10 % concept designs for CVPIA SHIP sites. Since that report, three of the sites have advanced to higher levels of design. Table 2 provides an overview of the CVPIA SHIP sites included in this analysis and their level of design. See Figure 5 and 6 for the locations of the CVPIA SHIP sites.

Table 2. List of CVPIA SHIP sites included in the analysis

Site Name	Design Level	Designer
Nimbus Basin	10%	cbec
Sailor Bar	100%	cbec
Lower Sailor Bar	60%	cbec
Sunrise	10%	cbec
Lower Sunrise	10%	cbec
Sacramento Bar	10%	cbec
El Manto	10%	cbec
Ancil Hoffman	100%	cbec
Upper Riverbend	10%	cbec
Riverbend	10%	cbec

*Site name from cbec (2020b)

2.4 WATER FORUM REARING SITES

cbec (2020a) identified and prioritized 53 potential salmonid rearing habitat projects within LAR for the Water Forum. Table 3 provides a list of the 8 sites included in this analysis. These sites are a subset of the higher priority and more likely projects that may be constructed. See Figures 5 and 6 for an overview of the Water Forum rearing site locations.

Table 3. List of Water Forum rearing sites included in the analysis

Site Number*	Design Level	Designer
03	concept	cbec
06	concept	cbec
09	concept	cbec
14	concept	cbec
19	concept	cbec

Site Number*	Design Level	Designer
21	concept	cbec
24	concept	cbec
25	concept	cbec

*Site number from cbec (2020a)

3 MODEL DEVELOPMENT

The Hydraulic Engineering Center River Analysis System (HEC-RAS) 2D hydrodynamic modeling software was used for the analysis. The models were developed and calibrated for the lower American River Current Condition DEM and 2D Model Development Project (a joint venture with the Water Forum and SAFCA) and USACE's ARCF Project.

3.1 MODEL DOMAIN

Two flood model domains were used for this analysis. For the upper portion of LAR (i.e., From Nimbus Dam to Watt Avenue), a 20-ft gridded mesh model was developed and reported in cbec (2019). Watt Avenue was a suitable place to end the upper model domain because high water marks (HWMs), a cbec stage gage, and the lack of tidal influences allowed a rating curve to be developed at that location. For the lower portion of LAR (i.e., the full federal leveed reach from RM 15.5 to the confluence with the Sacramento River), a 20-ft curvilinear mesh model was developed and reported in cbec (2021a). See Figures 7 and 8 for the model extents for the upper and lower domains, respectively.

3.2 BATHYMETRY AND TOPOGRAPHY

The existing ground (EG) topography and bathymetry was derived from a 2017 DEM. The 2017 EG DEM uses 2017 topo-bathymetric LiDAR (often called "Green LiDAR" that can penetrate water to varying depths) collected by Quantum Spatial (Quantum Spatial, 2018), and 2017 single-beam sonar and RTK-GPS survey points collected by cbec (cbec, 2018). All topographic surfaces and model results use the North American Vertical Datum of 1988 (NAVD 88). Finally, all surfaces incorporated the approximate bridge pier footprints into a 2-ft raster cell resolution DEM for hydraulic modeling purposes.

3.3 CALIBRATION AND VALIDATION

The model calibration and validation runs were based off HWMs acquired for the 1986 and 1997 high flow events and RTK-GPS WSE observations that cbec collected during the 2017 water year. The models were calibrated to the 1997 HWMs and then validated by applying the same roughness parameters to the 1986 HWMs and the observed WSEs for the 2017 water year. The mean and median calibration and validation results were generally within 0.1-0.15 ft of the WSE and HWM data with root-mean-square-errors between 0.2-0.4 ft (cbec, 2019 and cbec, 2021a). Table 4 provides an overview of the calibration and validation events. The LAR discharge data was obtained from the American River at Fair Oaks United States Geological Survey (USGS) gage (AFO, #11446500).

Table 4. Flow events for calibration and validation

Purpose	LAR Discharge (cfs)	Comments
Calibration	117,000	1/2/1997 observed HWMs
Validation	134,000	2/19/1986 observed HWMs
Validation	20,500	12/20/2016 observed WSE
Validation	60,300	1/11/2017 observed WSE
Validation	82,200	2/10/2017 observed WSE

3.4 MODELING PARAMETERS AND ASSUMPTIONS

The HEC-RAS 2D model meshes used for this project consist of mostly 20-ft gridded elements for the upper domain mesh and 20-ft curvilinear elements for the lower domain mesh. During the model development process, a grid size sensitivity test was conducted to achieve the best balance of accuracy and computational run times (cbec, 2019 and cbec, 2021a). The meshes were further refined with break lines along the levee crests and toes, channel banks, steep slope breaks, topographic high and low points, and bridge piers. The break lines ensure that the model mesh is enforced along topographic features that direct or prevent flow paths (e.g., a levee crest or bridge pier). In addition, the cell spacing along the bridge piers and levee toes were reduced to ~8-12 ft (i.e., smaller sizes to increase resolution of velocity calculations). Table 5 provides an overview of the model parameters.

Table 5. HEC-RAS 2D flood model parameters

Parameter	Value	Notes
HEC-RAS	Version 6.1.0	-
flow module	2D unsteady	-
equation set	SWE-ELM	-
theta (0.6 – 1.0)	0.9	-
initial condition	dry bed with warmup period	-
inflows	constant, sub-critical	EG slope = 0.001 (same as bed slope)
outflows	constant elevation	observed condition or rating curve
time step	2 seconds	-
eddy viscosity	0.0 for gridded mesh; 0.4 for curvilinear mesh*	-

*The curvilinear mesh has less numerical diffusion and requires eddy viscosity to provide accurate and stable results (cbec 2021a)

4 SCENARIOS ANALYZED

To assess hydraulic impacts, HEC-RAS scenarios were developed to represent different configurations of baseline (i.e., existing ground or “EG” conditions) and future grade (FG) conditions. Table 6 shows the 5 scenarios that were created for this analysis. Scenario 1 (S1) represents EG without the Sacramento Weir Widening (w/o SWW) project, and Scenario 2 represents EG with SWW (w/ SWW). The SWW project is part of the ARCF project, but its footprint is outside of the American River and the hydraulic model

domains. The SWW project increases the amount of water diverted from the Sacramento River to the Yolo Bypass, which lowers the WSEs within the Sacramento and American River confluence. Therefore, a separate scenario was created to show the effects of SWW on LAR hydraulics. The S1 and S2 scenarios were documented in cbec (2021a) and cbec (2021b), and the differences are included here for background information. Scenario 12 (S12) represents the latest ARCF project condition and was documented in cbec (2021b). NRMP1 represents the addition of the NRMP sites to EG w/o SWW (i.e., S1 + NRMP sites). This scenario provides a comparison to isolate the hydraulic impacts of only the NRMP actions. Lastly, NRMP2 represents the cumulative effect of NRMP, ARCF, CVPIA SHIP, and Water Forum rearing projects. Compared to S1, the NRMP2 scenario provides the full cumulative hydraulic impact.

Table 6. Design and roughness scenarios modeled

Scenarios	Project Sites	Sacramento Weir Widening (SWW)
S1*	None – EG	w/o SWW
S2*	None – EG	w/ SWW
S12*	All ARCF projects	w/ SWW
NRMP1	EG + NRMP sites	w/o SWW
NRMP2	EG + NRMP + ARCF + CVPIA SHIP + Water Forum rearing sites	w/ SWW

*S1 and S2 were documented in cbec (2021a) as part of cbec Project #20-1013 and S1, S2, and S12 were documented in cbec (2021b) as part of cbec Project #20-1041.

4.1 ROUGHNESS MODIFICATIONS

All sites represented in the model contain roughness override polygons that correspond to future landcover conditions (e.g., channel modification, herbaceous vegetation, angular riprap, shrubs/willows, and mature trees). For ARCF and CVPIA SHIP sites, the model incorporates DEM modifications according to the grading plans for the project sites. For NRMP and Water Forum rearing sites, the concepts are largely modeled with only the roughness overrides for landcover changes. Some small exceptions where DEM modifications were made for the NRMP sites include bathroom structures (at Riverbend and El Manto), a shade structure (at Harrington), a cartop boat launch (at Woodlake), and a culvert/bridge (at Woodlake). These structures were included in the model by applying approximate DEM modifications to block an appropriate amount of flow around the structures. Table 7 provides an overview of the roughness values used for the different landcover modifications made within the models. Note that the channel roughness values are different between the calibrated curvilinear mesh (i.e., lower domain) versus the calibrated gridded mesh (i.e., upper domain).

Table 7. Roughness modifications by landcover type

Landcover	Lower Domain	Upper Domain
Channel*	0.03	0.0275
Herbaceous Vegetation	0.03	0.03
Angular Riprap	0.04	0.04

Landcover	Lower Domain	Upper Domain
Riparian Vegetation (e.g., alders/willows)	0.05	0.05
Trees (e.g., cottonwoods/oaks)	0.07	0.07

*The curvilinear mesh for the lower domain model has less numerical diffusion and requires higher roughness values for the channel (cbec 2021a)

4.2 BOUNDARY CONDITIONS

Boundary conditions were developed for hydraulic impact assessments in cbec (2021a) and cbec (2021b). These boundary conditions include 3 LAR inflow values of 115,000 cfs, 160,000 cfs, and 192,000 cfs. Based on the Central Valley Hydrology Study (CVHS), 115,000 cfs represents an annual exceedance probability (AEP) of 1/50 to 1/200, 160,000 cfs represents the peak design discharge with an AEP of 1/325, and 192,000 cfs represents the approximate top-of-federal-levee discharge with an AEP of approximately 1/350 (USACE-SPK 2019b and USACE-SPK 2020). Table 8 shows the flow conditions used to model the 5 scenarios. All boundary conditions presented in Table 8 were extracted from the peak stage and flow condition at I-Street Bridge from the equivalent AEP event in USACE's ARCF-PED v6.1 model run (for without SWW, USACE-SPK 2018) and USACE's ARCF-PED v6.2 model run (for with SWW, USACE-SPK 2019). The boundary conditions show how the inclusion of the 65% design for SWW increases the amount of flow that is diverted from the Sacramento River by approximately 15,000 cfs and reduces overall WSEs within the Sacramento and American River confluence by approximately 1.5 ft.

Table 8. Boundary conditions for baseline scenarios with and without Sacramento Weir Widening

Scenarios	SWW	AEP Event	LAR Inflow (cfs)	Sac R. US Inflow near RM 61.1 (cfs)	Sac R. US Stage near RM 61.1 (ft)	NEMDC Inflow (cfs)	Sac R. DS Stage near RM 59.4 (ft, NAVD88)
S1, NRMP1	w/o SWW	1/200	115,000	6,500	35.77	5,700	34.98
S1, NRMP1	w/o SWW	1/325	160,000	-30,200	36.66	4,200	36.00
S1, NRMP1	w/o SWW	1/350	192,000	-58,100	36.91	3,700	36.48
S2, S12, NRMP2	w/ SWW	1/200	115,000	-9,100	34.29	5,700	33.69
S2, S12, NRMP2	w/ SWW	1/325	160,000	-47,400	34.85	4,200	34.52
S2, S12, NRMP2	w/ SWW	1/350	192,000	-73,700	35.46	3,700	35.28

[1]115,000 cfs represents the 1/200-yr AEP event for LAR according to the Central Valley Hydrology Study (USACE-SPK 2019b)

[2]160,000 cfs represents the 1/325-yr AEP event for LAR according to the Central Valley Hydrology Study (USACE-SPK 2019b)

[3]192,000 cfs represents the 1/350-yr AEP event for LAR according to the Central Valley Hydrology Study (USACE-SPK 2020)

For the scenarios, only the 1/200 AEP event w/o SWW has a positive inflow boundary condition for Sacramento River near RM 61.1. For stability and mass conservation reasons, the boundary condition at Sacramento River RM 61.1 was converted to a stage boundary condition for the scenarios with negative flow. Stage elevations were determined iteratively to achieve the intended flow split at the confluence (i.e., the correct total combined flow at I-Street and the correct reverse flow towards the Sacramento Weir). Table 8 provides both the stage and target flow at Sacramento River near RM 61.1.

5 HEC-RAS 2D MODEL RESULTS

The hydraulic analysis focuses on comparing results between the following scenarios:

- S2 minus S1 – to show the effects of SWW
- S12 minus S1 – to show the effects of ARCF projects
- NRMP1 minus S1 – to determine the individual effects of NRMP sites
- NRMP2 minus S12 – to show the additional effect of NRMP, CVPIA SHIP, and Water forum rearing sites
- NRMP2 minus S1 – to show the cumulative effect of ARCF, NRMP, CVPIA SHIP, and Water forum rearing sites compared to existing conditions

5.1 WSE DIFFERENCES

5.1.1 S2 MINUS S1

To document the WSE effects of SWW, outputs from S2 were compared to outputs from S1. Figures 9 and 10 show the spatial patterns of WSE change for the 160k cfs event, and Figures 11 and 12 show the spatial patterns for the 192 kcfs event. Table 9 summarizes the WSE reductions at select bridge crossings in the lower model domain where levee freeboard is a concern. This comparison shows that the implementation of the SWW project reduces peak WSEs by approximately 1.2-1.8 ft within the Sacramento and American River confluence. This effect diminishes to approximately 0.2-0.3 ft at H-St Bridge and approximately 0.1 ft near Watt Avenue. Outside of the federal leveed reach, the WSE differences due to SWW are negligible.

Table 9. WSE differences due to SWW (i.e., EG with SWW minus EG without SWW)

Figure #'s	Comparison	LAR Inflow (cfs)	H-St Bridge	Guy West Bridge	Howe Ave Bridge	Watt Ave Bridge
9 & 10	S2 minus S1	160,000	-0.33	-0.27	-0.19	-0.15
11 & 12	S2 minus S1	192,000	-0.22	-0.17	-0.12	-0.09

5.1.2 S12 MINUS S1

Figures 13-16 show the combined effects of ARCF projects (American River Contracts 1 through 4, including the mitigation projects and SWW) relative to EG without SWW. The ARCF project produces a large reduction in WSEs through most of the lower model domain. Table 10 summarizes the WSE reductions at a select number of LAR bridges where levee freeboard is a concern. WSEs are reduced by nearly 1 ft by Howe Ave Bridge and 0.75 ft near Watt Ave Bridge. These results show that the ARCF project

does not increase WSEs along federal or non-federal levees. Outside of the federal leveed reach, the WSE differences due to ARCF are minimal and localized.

Table 10. WSE differences due to ARCF projects and SWW (i.e., ARCF with SWW minus EG without SWW)

Figure #'s	Comparison	LAR Inflow (cfs)	H-St Bridge	Guy West Bridge	Howe Ave Bridge	Watt Ave Bridge
13 & 14	S12 minus S1	160,000	-0.36	-0.61	-0.94	-0.73
15 & 16	S12 minus S1	192,000	-0.23	-0.57	-0.92	-0.71

5.1.3 NRMP1 MINUS S1

Figures 17-22 show the how the addition of NRMP sites effect WSEs without including the mixed effects of other projects (i.e., ARCF, CVPIA SHIP, and water forum rearing sites are not included). These results show that the NRMP sites begin to increase WSEs above 0.1 ft relative to existing conditions near RM 3.5 and above. Table 11 summarizes the WSE increases at a select number of LAR bridges. Outside of the federal leveed reach, the WSE differences due to NRMP are negligible.

Table 11. WSE differences isolated to NRMP projects (i.e., EG and NRMP without SWW minus EG without SWW)

Figure #'s	Comparison	LAR Inflow (cfs)	H-St Bridge	Guy West Bridge	Howe Ave Bridge	Watt Ave Bridge
17 & 18	NRMP1 minus S2	115,000	0.16	0.14	0.13	0.21
19 & 20	NRMP1 minus S2	160,000	0.24	0.18	0.17	0.27
21 & 22	NRMP1 minus S2	192,000	0.22	0.13	0.14	0.22

5.1.4 NRMP2 MINUS S12

Figures 23-28 show the WSE differences of the cumulative model (i.e., ARCF, NRMP, CVPIA SHIP, and Water Forum rearing sites) relative to the ARCF project condition. These results show the effect of adding the NRMP, CVPIA, and Water Forum rearing sites. The differences within the federal leveed reach are similar to the NRMP1 minus S2 results since there are few Water Forum rearing sites within this stretch and no CVPIA SHIP sites. Table 12 summarizes the WSE differences at a select number of LAR bridges. Outside of the federal leveed reach, the WSE differences are largely driven by the effects of CVPIA SHIP and Water Forum rearing sites.

Table 12. WSE differences of cumulative results relative to ARCF projects (i.e., Cumulative results with SWW minus ARCF with SWW)

Figure #'s	Comparison	LAR Inflow (cfs)	H-St Bridge	Guy West Bridge	Howe Ave Bridge	Watt Ave Bridge
23 & 24	NRMP2 minus S12	115,000	0.18	0.16	0.15	0.23
25 & 26	NRMP2 minus S12	160,000	0.26	0.21	0.20	0.29
27 & 28	NRMP2 minus S12	192,000	0.25	0.16	0.17	0.25

5.1.5 NRMP2 MINUS S1

Figures 29-34 show the WSE differences of the cumulative model (i.e., ARCF, NRMP, CVPIA SHIP, and Water Forum rearing sites) relative to the existing condition (i.e., EG w/o SWW). These results show the total cumulative impact of ARCF, NRMP, CVPIA, and Water Forum rearing sites on WSEs. The differences within the federal leveed reach show a net reduction in WSE for 115,000 cfs and 160,000 cfs. At 192,000 cfs, there is a net reduction in WSE nearly everywhere within the federal leveed reach except for a short stretch near RM 6 where WSE increases are approximately 0.05 to 0.15 ft. This is not a location of incipient levee overtopping. Table 13 summarizes the WSE differences at a select number of LAR bridges.

Table 13. WSE differences of cumulative results relative to existing conditions (i.e., Cumulative results with SWW minus EG without SWW)

Figure #'s	Comparison	LAR Inflow (cfs)	H-St Bridge	Guy West Bridge	Howe Ave Bridge	Watt Ave Bridge
29 & 30	NRMP2 minus S1	115,000	-0.24	-0.40	-0.70	-0.45
31 & 32	NRMP2 minus S1	160,000	-0.08	-0.41	-0.74	-0.44
33 & 34	NRMP2 minus S1	192,000	0.05	-0.42	-0.74	-0.45

Outside of the federal leveed reach, there are no increases in WSE above 0.1 ft adjacent to a non-federal levee for 160,000 cfs and 192,000 cfs. At a flow of 115,000 cfs, there is an increase in WSE of 0.1-0.15 ft at RM 18.5 near a non-federal levee, but the wetted extent is over 50 ft from the toe of the levee, and there is over 10 ft of freeboard. All other WSE increases outside of the federal leveed reach do not impact non-federal levees and occur in areas with sufficient freeboard (i.e., greater than 3-ft of freeboard at the peak design discharge of 160,000 cfs). See Section 5.2 for more detail on freeboard calculations and results.

5.2 VELOCITY DIFFERENCES

5.2.1 S2 MINUS S1

To assess the velocity effects of SWW, outputs from S2 were compared to outputs from S1. Figures 35 and 36 show the spatial patterns of velocity change for the 160,000 event. With SWW, velocity increases within the channel by approximately 0.6 ft/s near Jibboom St and I-5 bridges, and the velocity differences diminish to less than 0.1 ft/s near Guy West Bridge and the Fairbairn Water Treatment Plant.

5.2.2 S12 MINUS S1

Figures 37-38 show the effects of ARCF with SWW. In general, the velocity differences show an increase in velocity of 0.3-0.6 ft/s within the channel downstream of Paradise Bend due to SWW, a significant decrease in velocity of up to 2 ft/s on the left bank and within the thalweg from RM 6 to RM 7 (due to Site 2-3), an increase of 0.2-0.3 ft/s within the channel upstream of Howe Ave Bridge (due to lower tailwater conditions from SWW and Site 2-3), and an increase in velocity of 0.4 ft/s on the outside bend adjacent to Arden Pond (RM 12).

5.2.3 NRMP1 MINUS S2

Figures 39-40 show the effects of the NRMP sites. In general, the velocity differences tend to be small and localized except for a few areas. From RM 2.5 to RM 5.5, the channel velocities are increased by 0.5 to 1 ft/s due to the restoration sites at Woodlake and Bushy Lake. In addition to the channel velocity increases, the increased roughness on the floodplain causes an increase in velocity along the North Levee adjacent to those sites (at RM 3 to 3.5, at RM 4, and at RM 5).

5.2.4 NRMP2 MINUS S12

Figures 41-42 show the effects of the NRMP, CVPIA SHIP, and Water Forum rearing sites. Within the lower domain (Figure 41), velocity differences are similar to NRMP1 minus S2 conditions, with the highest velocity differences near the Woodlake and Bushy Lake restoration sites (RM 2.5 to 5.5, see Figure 41). From RM 2.5 to RM 5.5, the channel velocities are increased by 0.5 to 1 ft/s due to the restoration sites at Woodlake and Bushy Lake. In addition to the channel velocity increases, the increased roughness on the floodplain also causes an increase in velocity along the North Levee adjacent to those sites (RM 3 to 3.5 and at RM 4 and at RM 5). Within the upper domain (Figure 42), the largest velocity increases occur adjacent to the CVPIA SHIP and Water Forum rearing sites.

5.2.5 NRMP2 MINUS S1

Figures 43-44 show the cumulative effects of ARCF, NRMP, CVPIA SHIP, and Water Forum rearing sites. Figures 43 shows significant channel velocity increases from RM 0 to 5 of approximately 1 ft/s due to SWW and the Woodlake and Bushy Lake restoration sites. Localized increases of velocity along the levee occur on both banks from RM 3 to 3.5 and RM 4 to 5. Velocity differences upstream from RM 6 to RM 12.5 are largely driven by ARCF projects. A significant decrease in velocity of up to 2 ft/s occurs on the left bank and within the thalweg from RM 6 to RM 7 (due to Site 2-3), an increase of 0.5-1.0 ft/s within the channel upstream of Howe Ave Bridge (due to lower tailwater conditions from SWW and Site 2-3), and an increase in velocity of 0.4 ft/s on the outside bend adjacent to Arden Pond (RM 12). Outside of the federal leveed reach, the velocity differences are mainly driven by CVPIA SHIP sites and Water Forum rearing sites.

5.3 LONGITUDINAL WSE AND FREEBOARD COMPARISONS

Figures 45 and 46 show how WSEs and levee / high ground elevations were extracted from the 2D model and DEM to create longitudinal profiles and calculate freeboard [1] values. Levee and high ground centerlines (i.e., ground adjacent to structures) were delineated (shown as orange points in Figures 45 and 46) and WSEs from the HEC-RAS outputs were extracted (shown as blue points in Figures 45 and 46) to plot the longitudinal profiles (See Figures 47 and 48) and calculate WSE differences and freeboard values (see Figures 49 through 52).

Figures 47 shows the longitudinal profile of 160,000 cfs results for NRMP2 and S1 within the lower domain model. This figure shows a clear separation in WSE between NRMP2 and S1 from RM 0 to RM 10 due to

[1] Freeboard is defined as the vertical distance between the WSE and the levee crest, or adjacent high ground elevation.

SWW and ARCF (i.e., Site 2-3). The spikes in the levee / high ground elevations occur at bridge crossings within the lower domain model.

Figure 48 shows the longitudinal profile of 160,000 cfs results for NRMP2 and S1 within the upper domain model. WSE differences in this figure are not discernable. Elevations along the north bank of the river vary widely with many areas having over 20 ft of freeboard relative to the 160,000 cfs WSE. The WSE profile shows some areas with stair-step like features. Since WSE results are extracted at the edge of the wetted extent and nearest to the adjacent levee / high ground, these stair-step like features are due to drops in WSE that occur due to flow obstructions like bridge abutments and mining tailings.

Figures 49 and 50 show the WSE differences between NRMP2 and S1 and freeboard values along the north bank of the river. Figure 49 shows the results within the lower model domain and Figure 50 shows the results within the upper model domain. The cumulative model results (i.e., NRMP2) show that WSEs have been reduced throughout the federal leveed reach except for the 192,000 cfs event at a valley distance upstream of 5-6 miles. Outside of the federal leveed reach, WSE increases do occur, but freeboard is generally much greater than 20 ft and never lower than 3-ft for the 160,000 cfs event where WSE increases occur.

Figures 51 and 52 show the WSE differences between NRMP2 and S1 and freeboard values along the south bank of the river. Figure 51 shows the results within the lower model domain and Figure 52 shows the results within the upper model domain. The cumulative model results (i.e., NRMP2) show that WSEs have been reduced throughout the federal leveed reach except for the 192,000 cfs event at a valley distance upstream of 5-6 miles. Outside of the federal leveed reach, WSE increases do occur, but freeboard is never lower than 3-ft for the 160,000 cfs event and WSEs increases are less than 0.1 ft adjacent to non-federal levees.

6 SUMMARY OF CONCLUSIONS

This hydraulic analysis found that the NRMP sites, when analyzed alone, increased WSEs by 0.15-0.25 ft within the federal leveed reach upstream of RM 3.5 (See Figures 17-22 and Table 11). The NRMP sites had negligible impact on WSEs upstream of the federal levees. When combined with the ARCF, CVPIA-SHIP, and Water Forum rearing sites, the cumulative result was a net reduction in WSEs for all three flows (115 kcfs, 160 kfcs, and 192 kcfs) throughout most of the federal leveed reach. A small exception occurred from RM 5.5 to 6.5 for the 192 kcfs event, where WSEs increased by 0.5-1.5 ft in the cumulative model. This is not a location of incipient levee overtopping, and the areas with lowest freeboard (approximately RM 7 to 11.5) still show a net reduction in WSE at all flows for the cumulative model. Upstream of the federal levees, the cumulative model shows that no WSE increases greater than 0.1 ft occur adjacent to non-federal levees and surrounding areas have greater than 3 ft of freeboard for the 160,000 cfs peak design discharge.

Several locations with potential velocity impacts were noted. The restoration sites at Woodlake and Bushy Lake increased velocities in the channel and along the levees from RM 3 to 5.5. Further analysis will be needed to determine if the velocity differences cause an impact to the channel bank and levees. If an

impact is found, the conceptual designs will need to be modified to reduce those velocity impacts. Lastly, 4 NRMP sites were removed from the analysis due to velocity and WSE impacts. Figure 53 shows the locations of those sites and the 160,000 cfs velocity differences. For projects to occur at these 4 sites, further analysis is required to reduce their impacts through some combination of modifying the project footprint, reducing the amount of mature tree plantings, and developing a grading plan to reduce velocity and WSE impacts.

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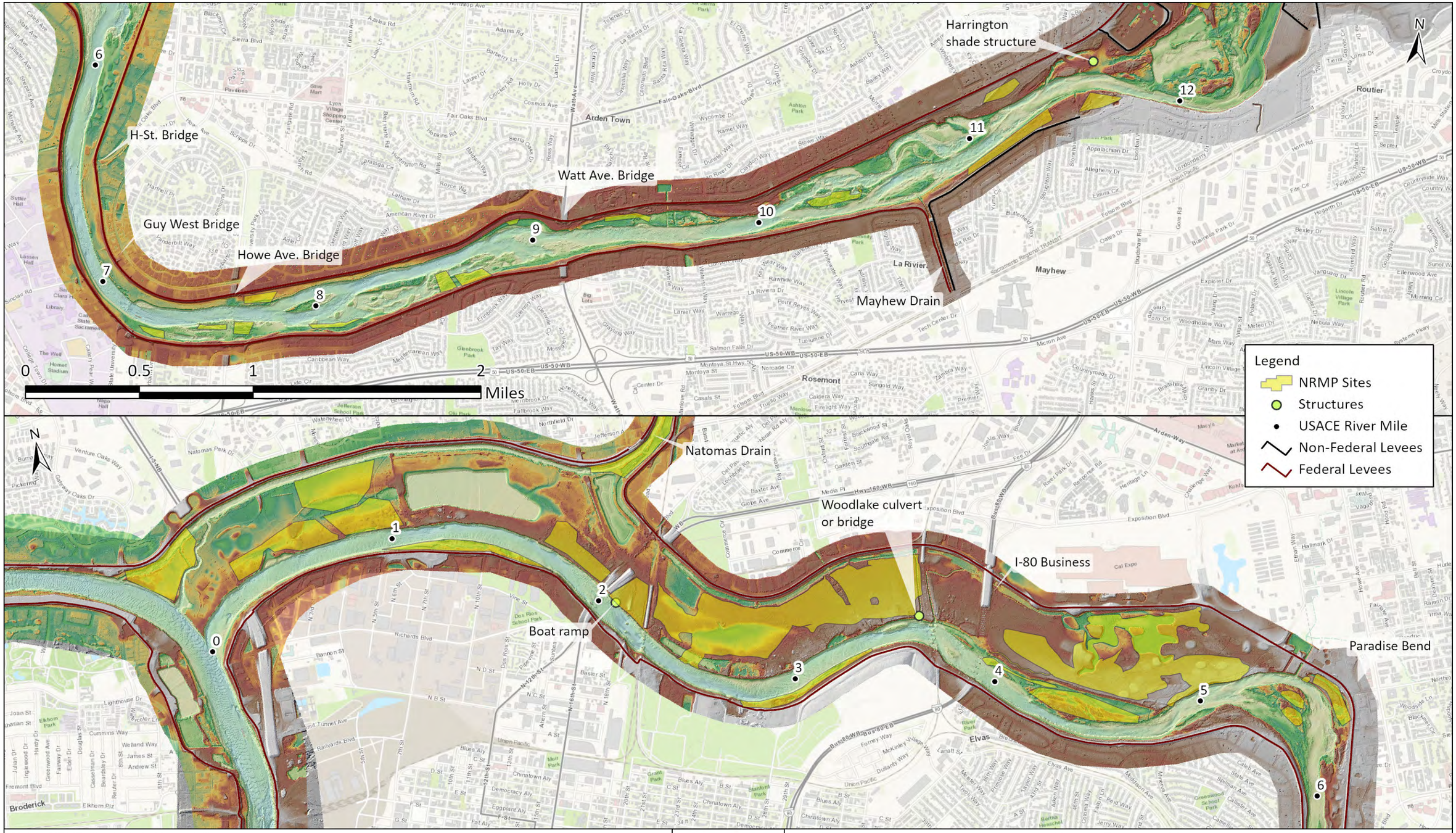
FIGURES

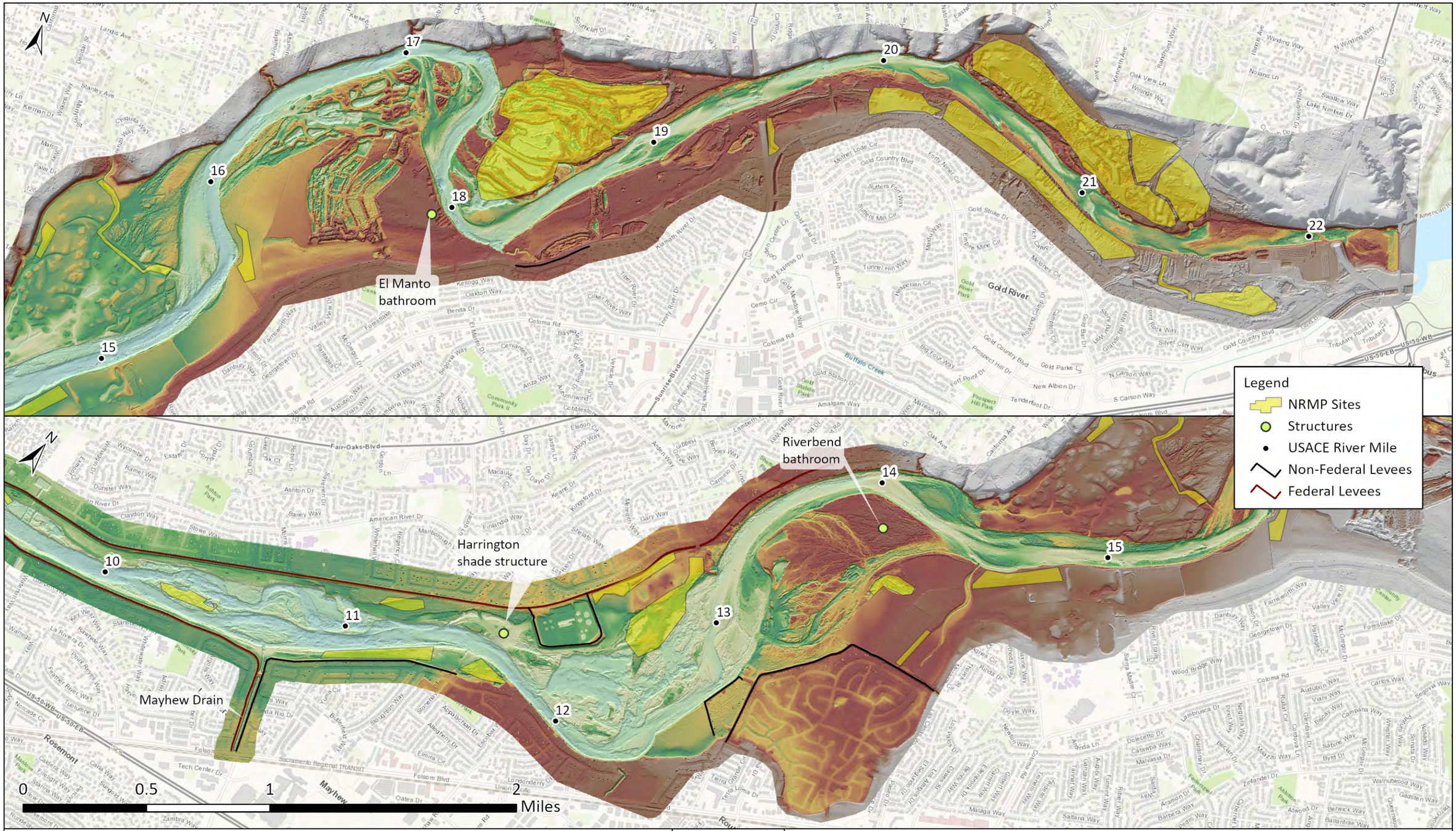


Notes: NRMP sites included in modelling

Natural Resource Management Plan Modeling Support Project

NRMP Sites – Lower Domain

Project No. 21−1023	Created By: MNC	**Figure 1**



Notes: NRMP sites included in modelling

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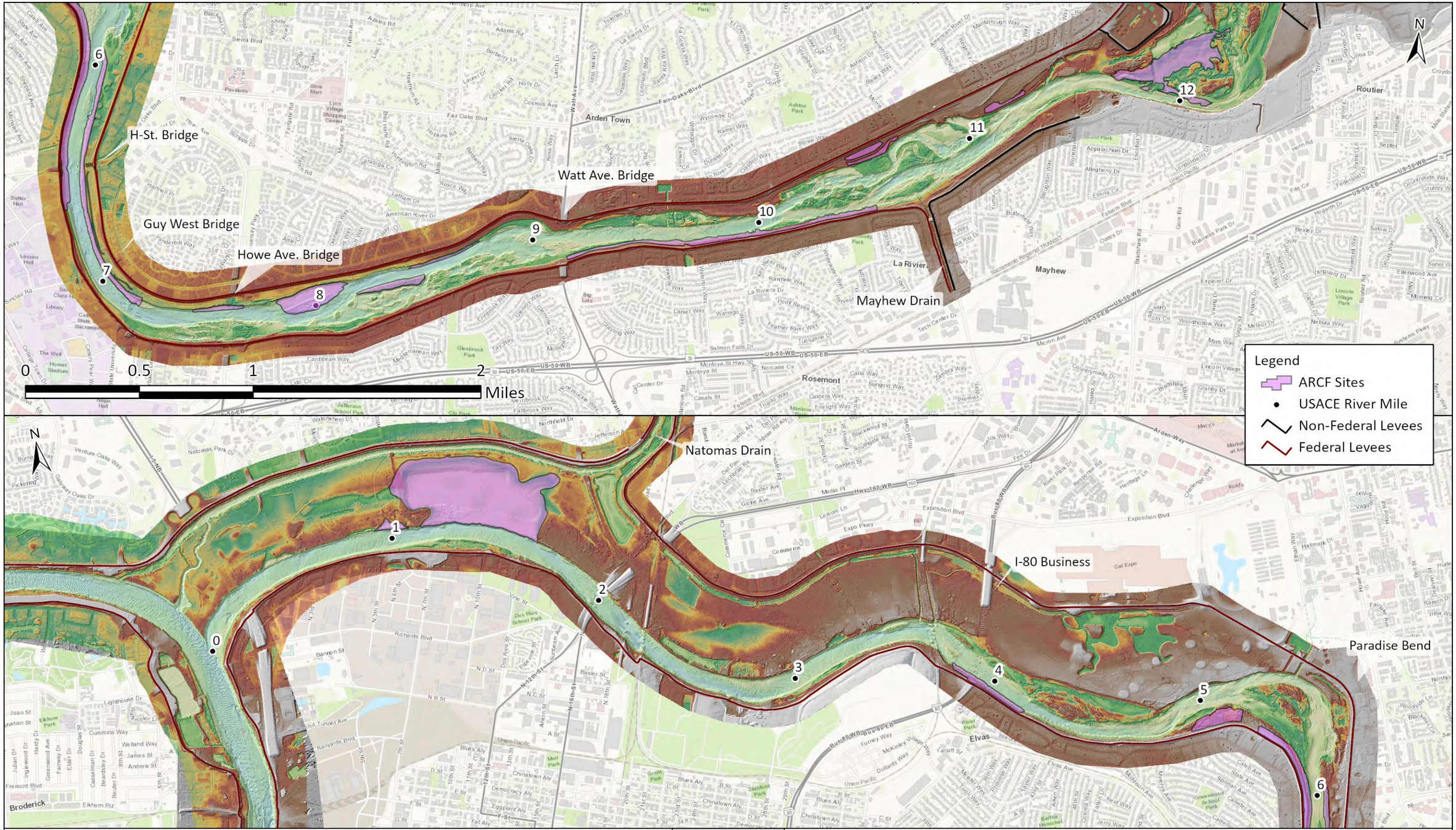
Natural Resource Management Plan Modeling Support Project

NRMP Sites – Upper Domain

Project No. 21−1023	Created By: MNC	**Figure 2**



Notes: ARCF sites included in modelling

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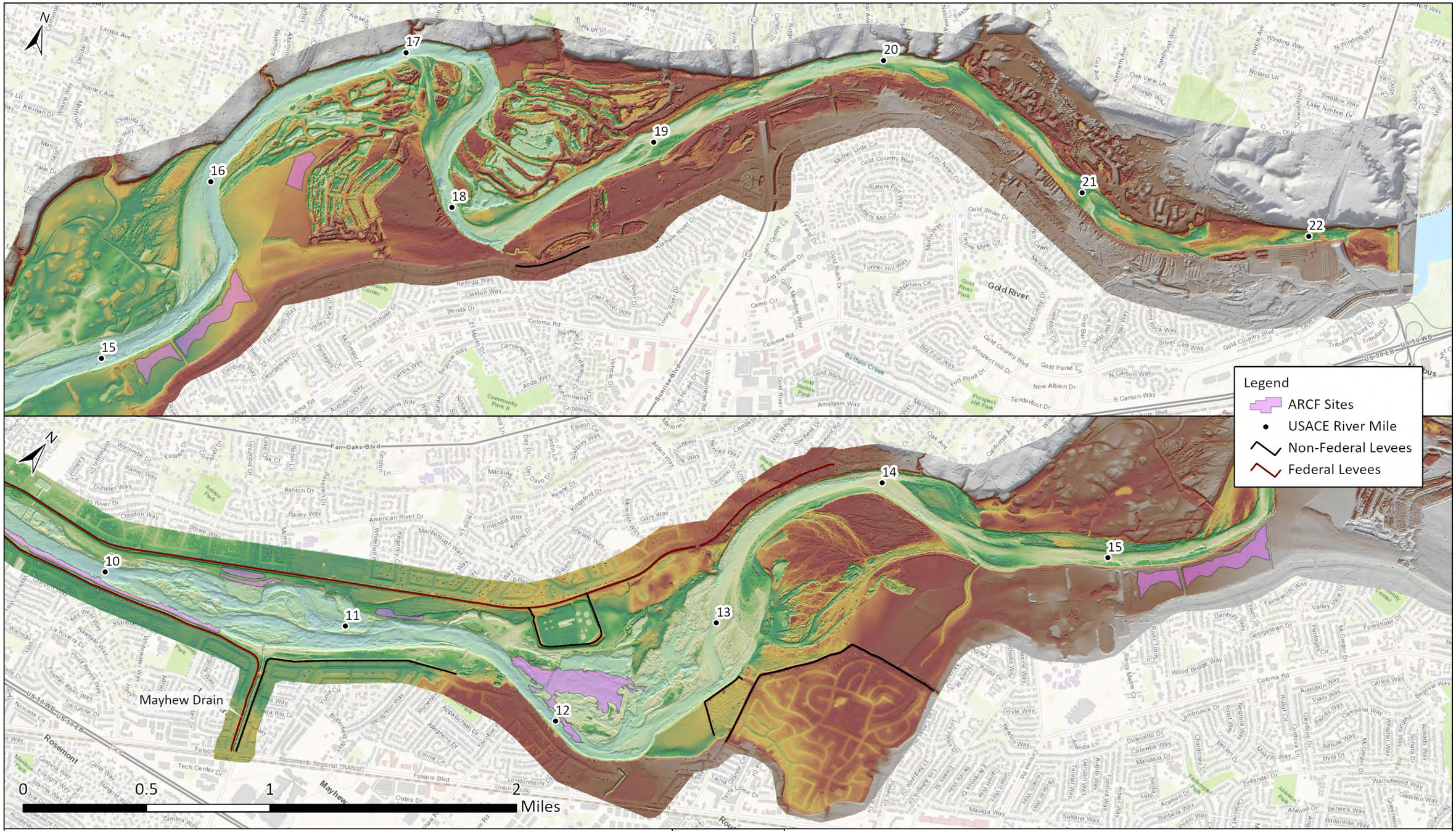
Natural Resource Management Plan Modeling Support Project
ARCF Sites – Lower Domain

Project No. 21−1023	Created By: MNC	**Figure 3**



Notes: ARCF sites included in modelling

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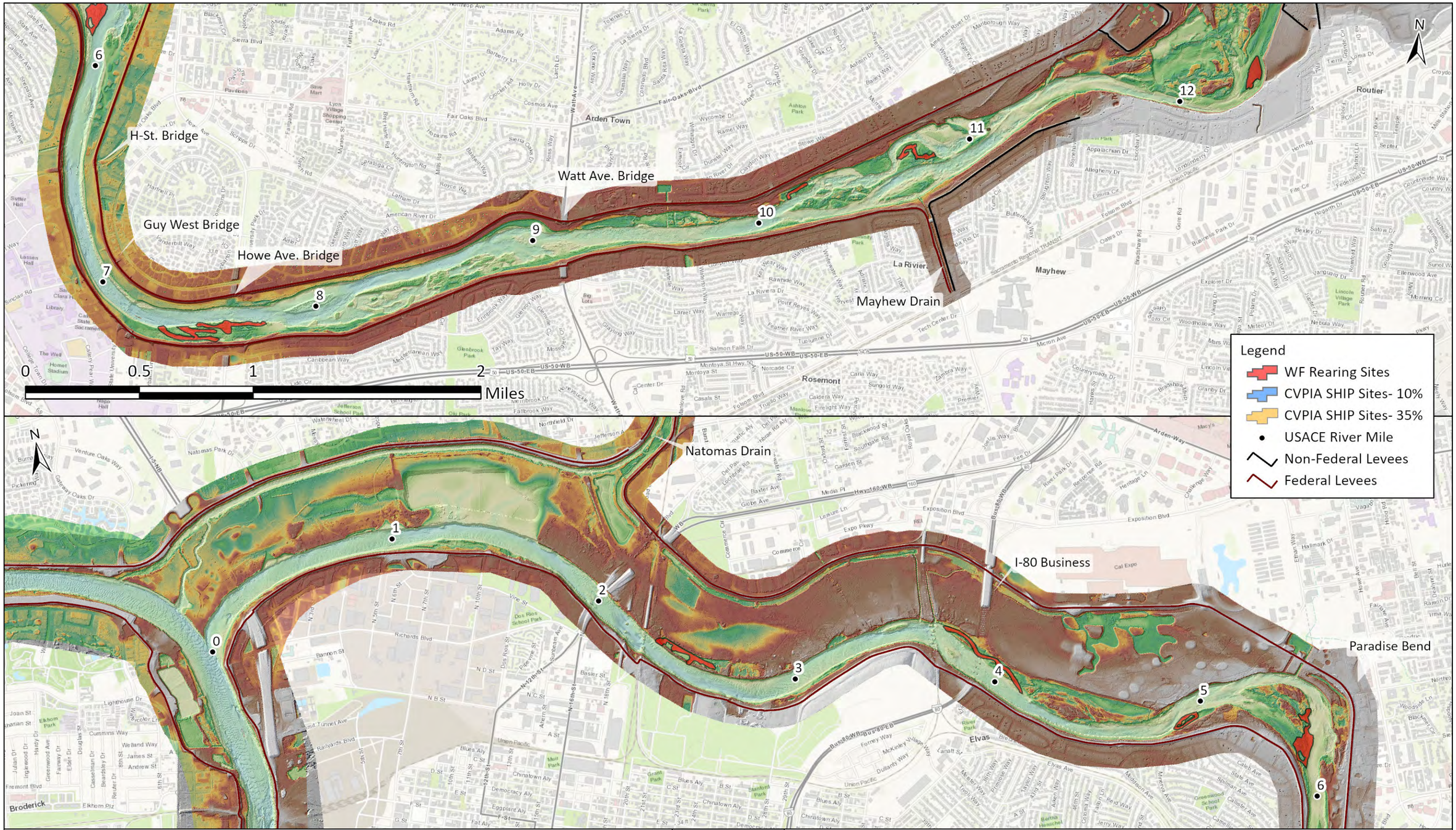
Natural Resource Management Plan Modeling Support Project

ARCF Sites – Upper Domain

Project No. 21−1023	Created By: MNC	**Figure 4**



Notes: CVPIA SHIP and Water Forum Rearing sites included in modelling

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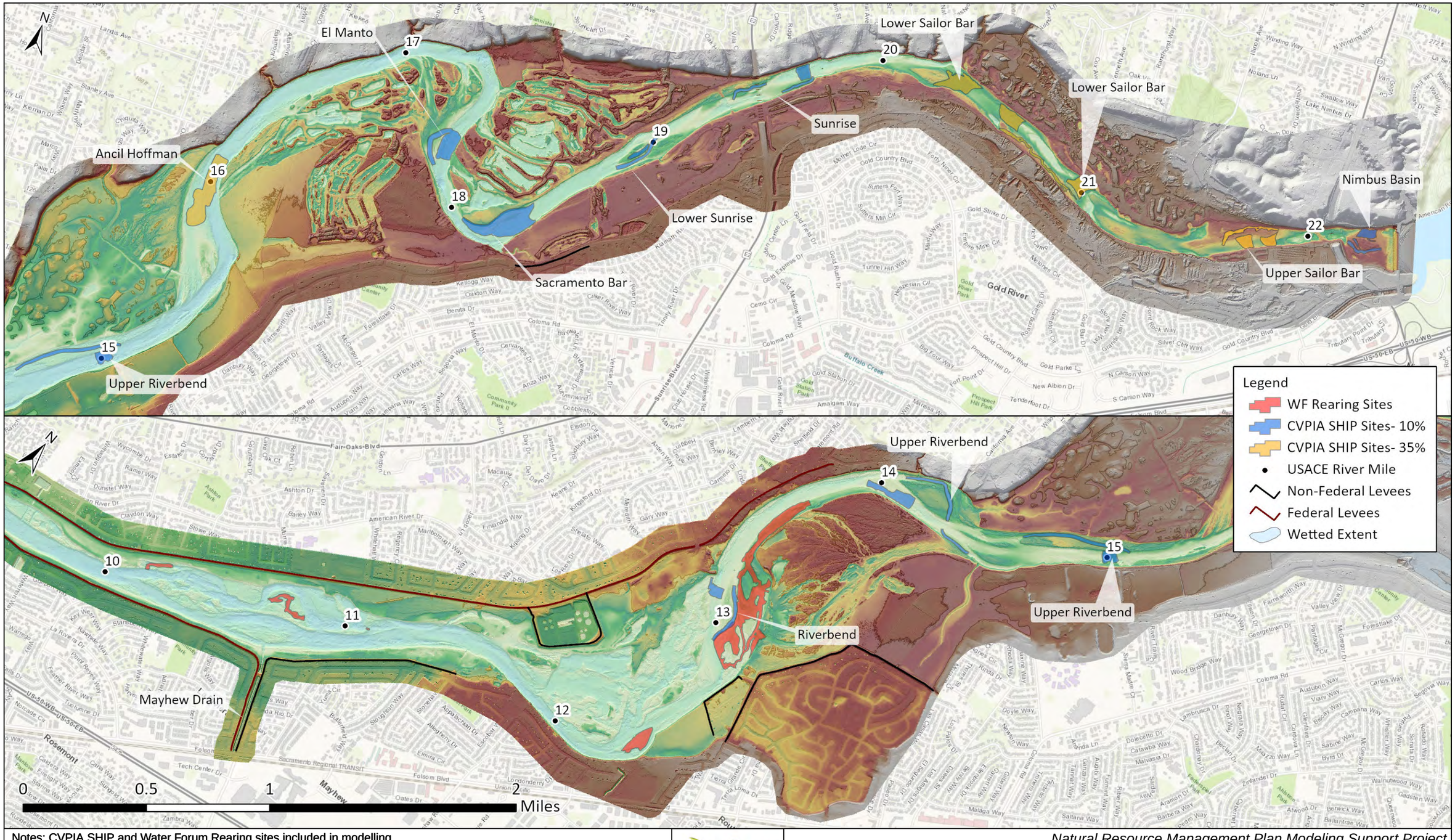
CVPIA SHIP and Water Forum Rearing Sites – Lower Domain

Project No. 21−1023	Created By: MNC	**Figure 5**

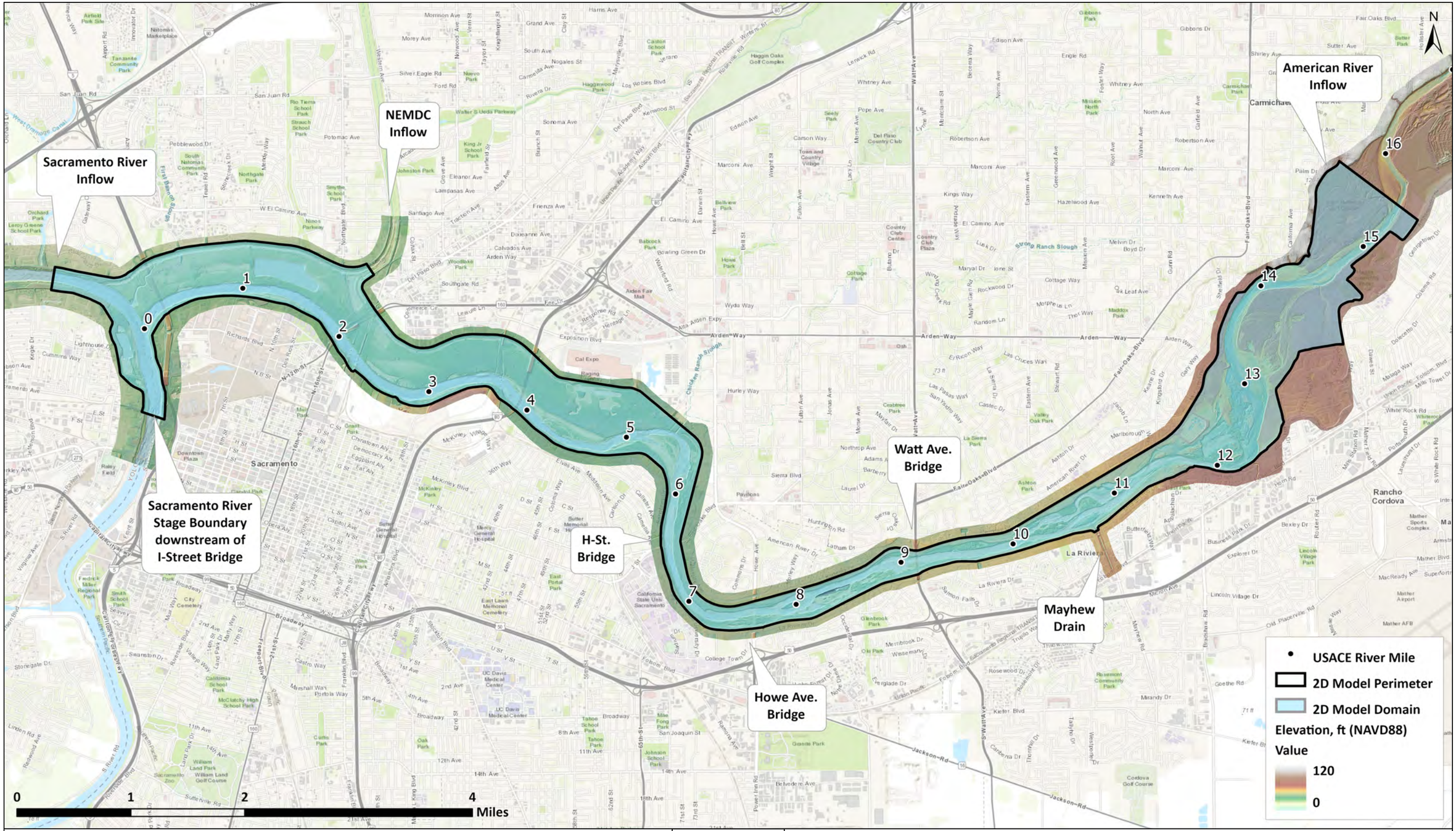


Notes: CVPIA SHIP and Water Forum Rearing sites included in modelling

Natural Resource Management Plan Modeling Support Project

CVPIA SHIP and Water Forum Rearing Sites – Upper Domain

Project No. 21−1023	Created By: MNC	**Figure 6**



Notes: Lower domain − curvilinear mesh HEC−RAS model (cbec 2021a)

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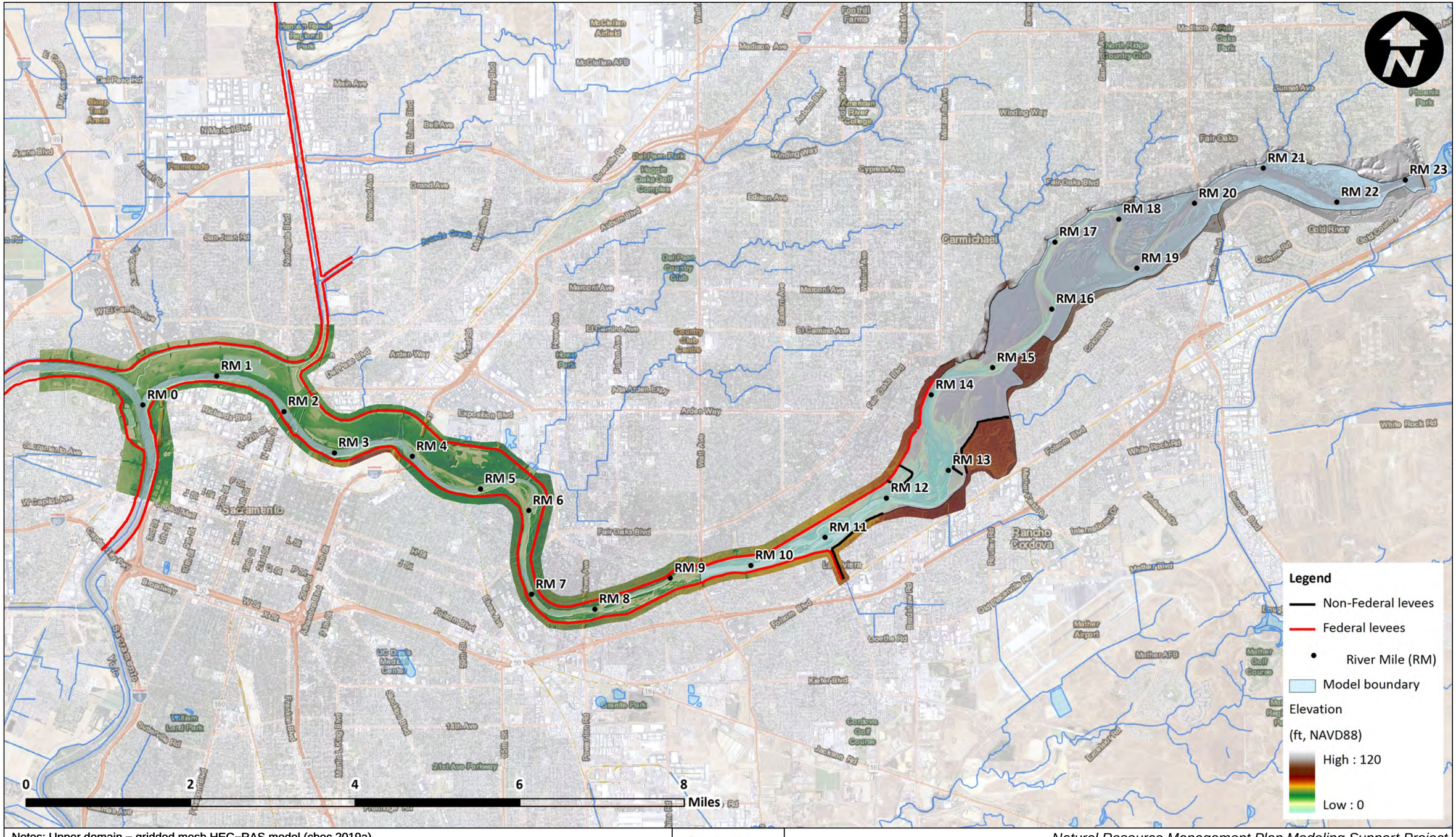
Natural Resource Management Plan Modeling Support Project
Lower Model Domain

Project No. 21−1023	Created By: MDW	**Figure 7**



Notes: Upper domain – gridded mesh HEC–RAS model (cbec 2019a)

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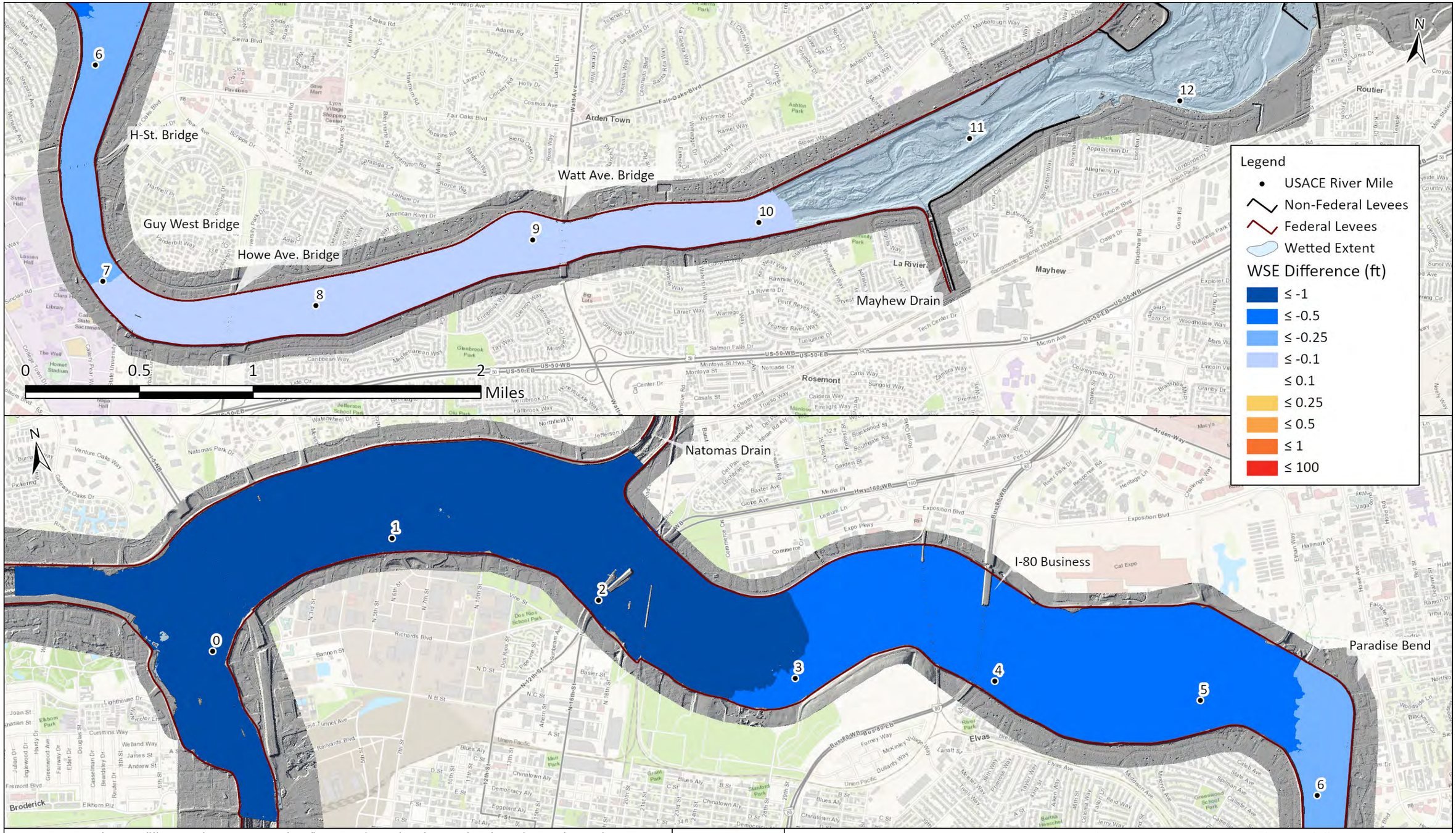
Natural Resource Management Plan Modeling Support Project

Upper Model Domain

Project No. 21–1023	Created By: MDW	**Figure 8**



Notes: 160,000 cfs WSE differences between Scenario 2 (i.e., EG w/ SWW) and Scenario 1 (EG w/o SWW): S2 minus S1

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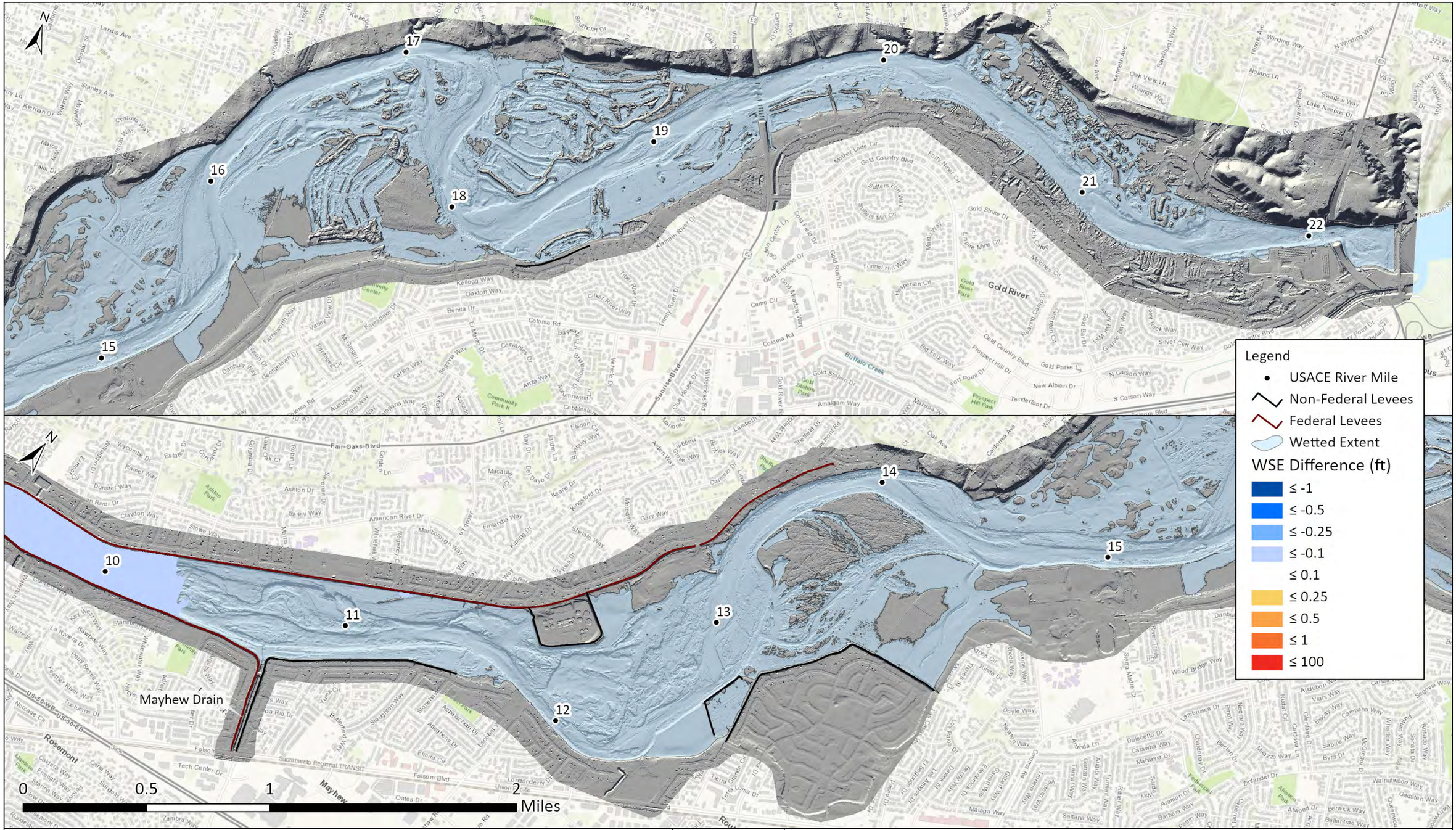
Natural Resource Management Plan Modeling Support Project

Lower Domain Scenario 2 minus Scenario 1 – WSE (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 9**



Notes: 160,000 cfs WSE differences between Scenario 2 (i.e., EG w/ SWW) and Scenario 1 (EG w/o SWW): S2 minus S1

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Natural Resource Management Plan Modeling Support Project

Upper Domain Scenario 2 minus Scenario 1 – WSE (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 10**

Legend
- USACE River Mile
- Non-Federal Levees
- Federal Levees
- Wetted Extent

WSE Difference (ft)
- ≤ -1
- ≤ -0.5
- ≤ -0.25
- ≤ -0.1
- ≤ 0.1
- ≤ 0.25
- ≤ 0.5
- ≤ 1
- ≤ 100

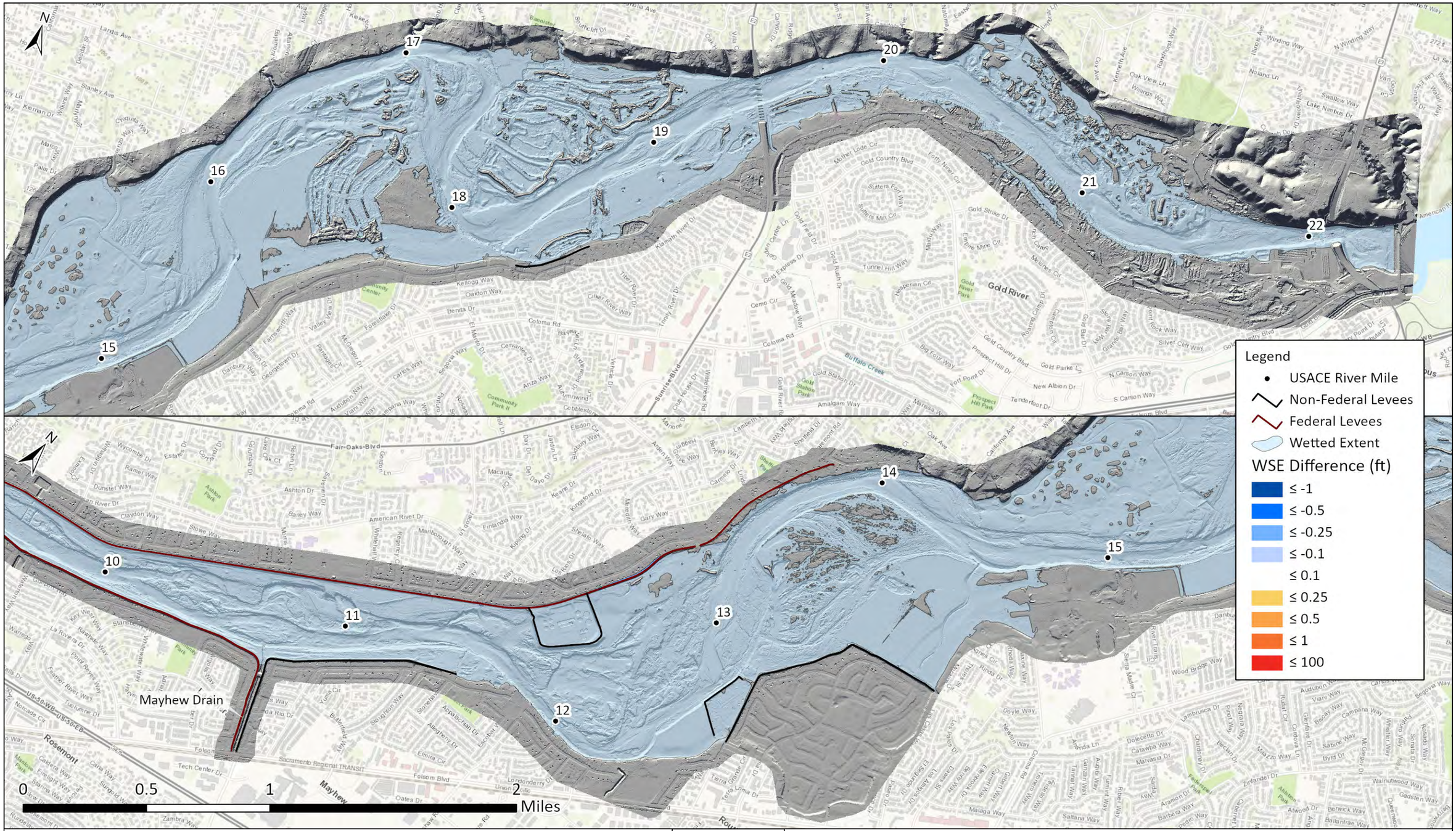
0 0.5 1 2 Miles

Notes: 192,000 cfs WSE differences between Scenario 2 (i.e., EG w/ SWW) and Scenario 1 (EG w/o SWW): S2 minus S1

Natural Resource Management Plan Modeling Support Project

Lower Domain Scenario 2 minus Scenario 1 – WSE (192 kcfs)

Project No. 21−1023 | Created By: MNC | **Figure 11**



Notes: 192,000 cfs WSE differences between Scenario 2 (i.e., EG w/ SWW) and Scenario 1 (EG w/o SWW): S2 minus S1

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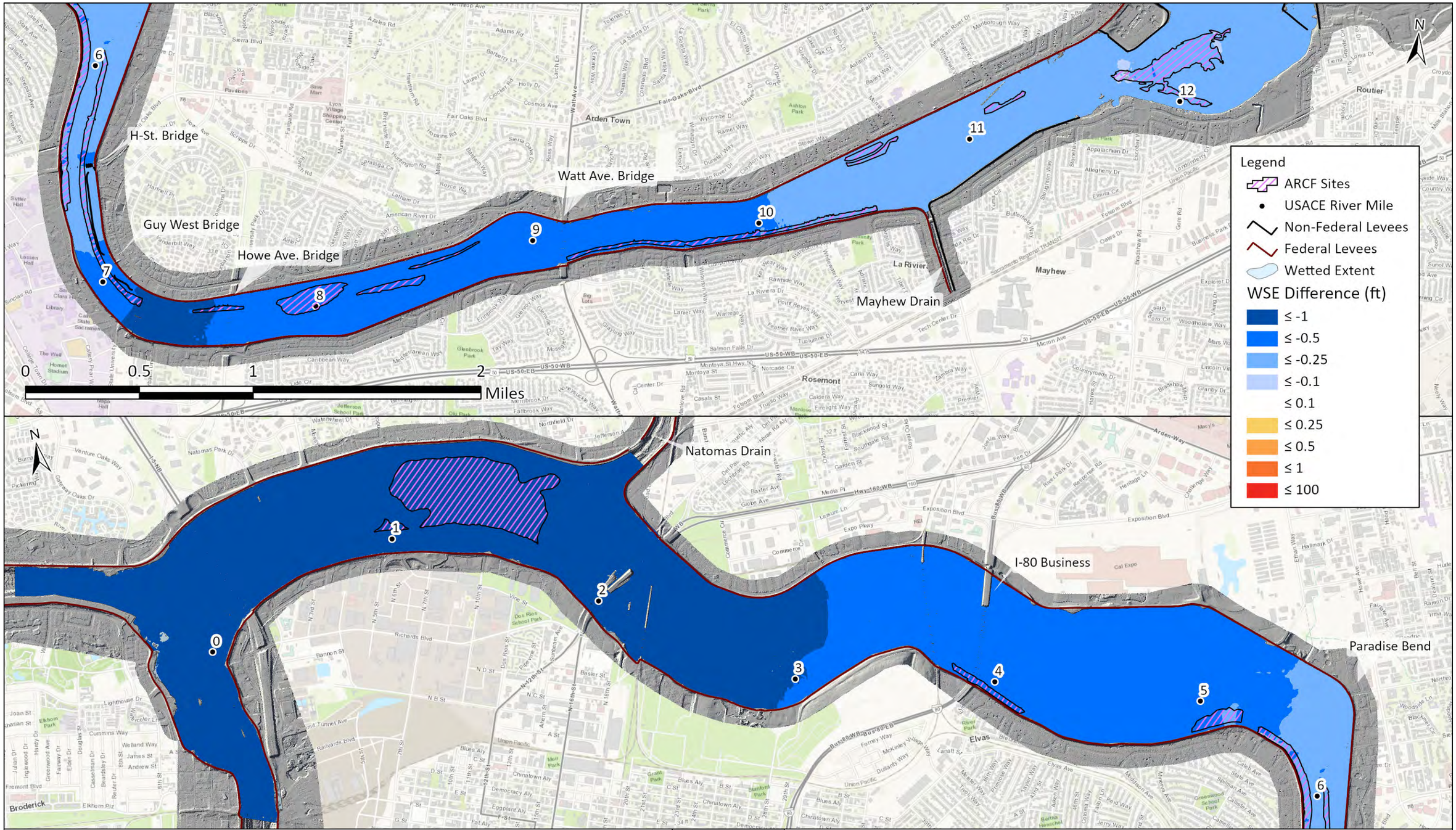
Natural Resource Management Plan Modeling Support Project

Upper Domain Scenario 2 minus Scenario 1 – WSE (192 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 12**



Notes: 160,000 cfs WSE differences between Scenario 12 (i.e., ARCF w/ SWW) and Scenario 1 (EG w/o SWW): S12 minus S1

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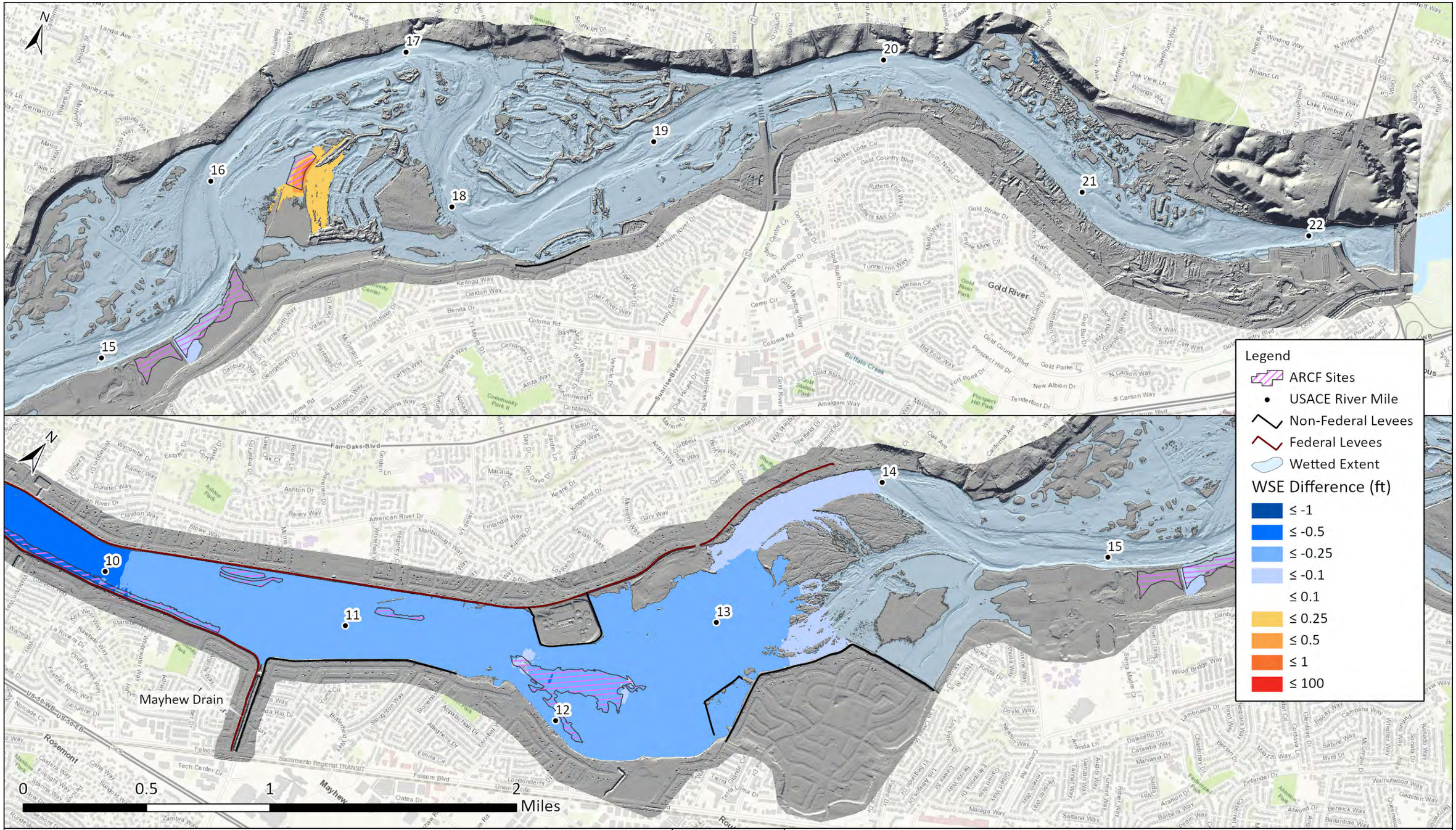
Natural Resource Management Plan Modeling Support Project

Lower Domain Scenario 12 minus Scenario 1 – WSE (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 13**



Notes: 160,000 cfs WSE differences between Scenario 12 (i.e., ARCF w/ SWW) and Scenario 1 (EG w/o SWW): S12 minus S1

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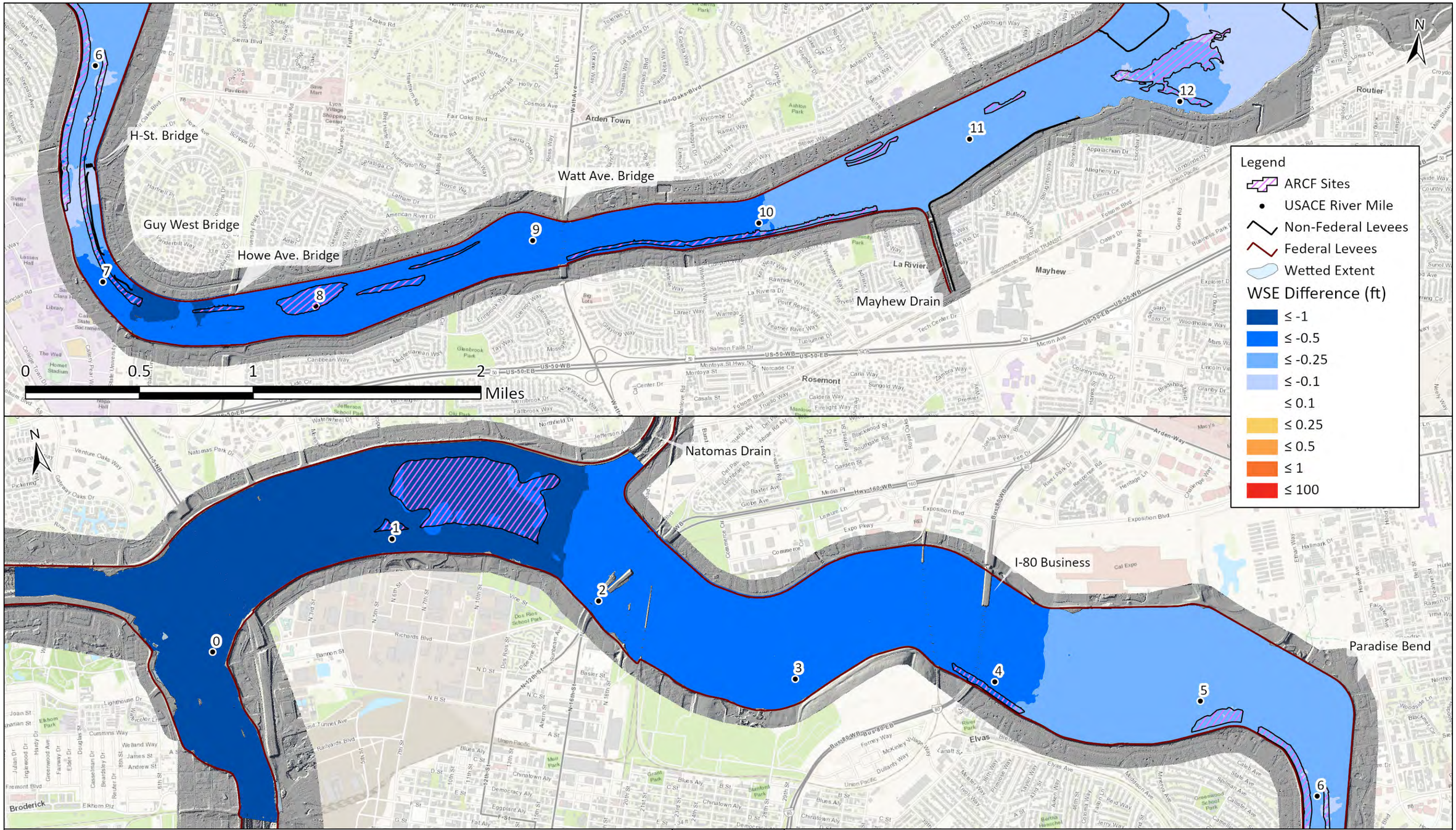
Natural Resource Management Plan Modeling Support Project

Upper Domain Scenario 12 minus Scenario 1 – WSE (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 14**



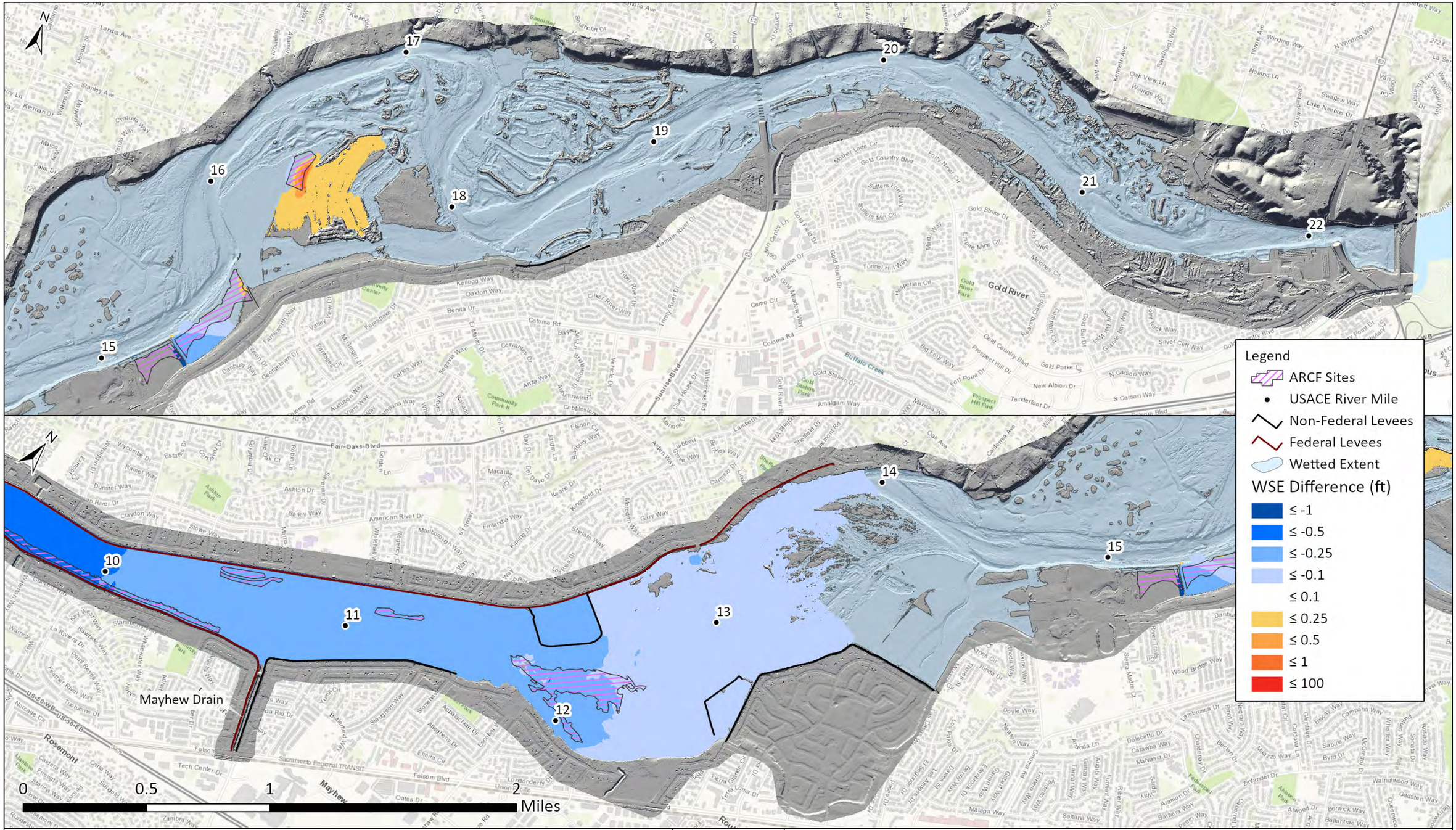
Notes: 192,000 cfs WSE differences between Scenario 12 (i.e., ARCF w/ SWW) and Scenario 1 (EG w/o SWW): S12 minus S1

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Lower Domain Scenario 12 minus Scenario 1 – WSE (192 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 15**



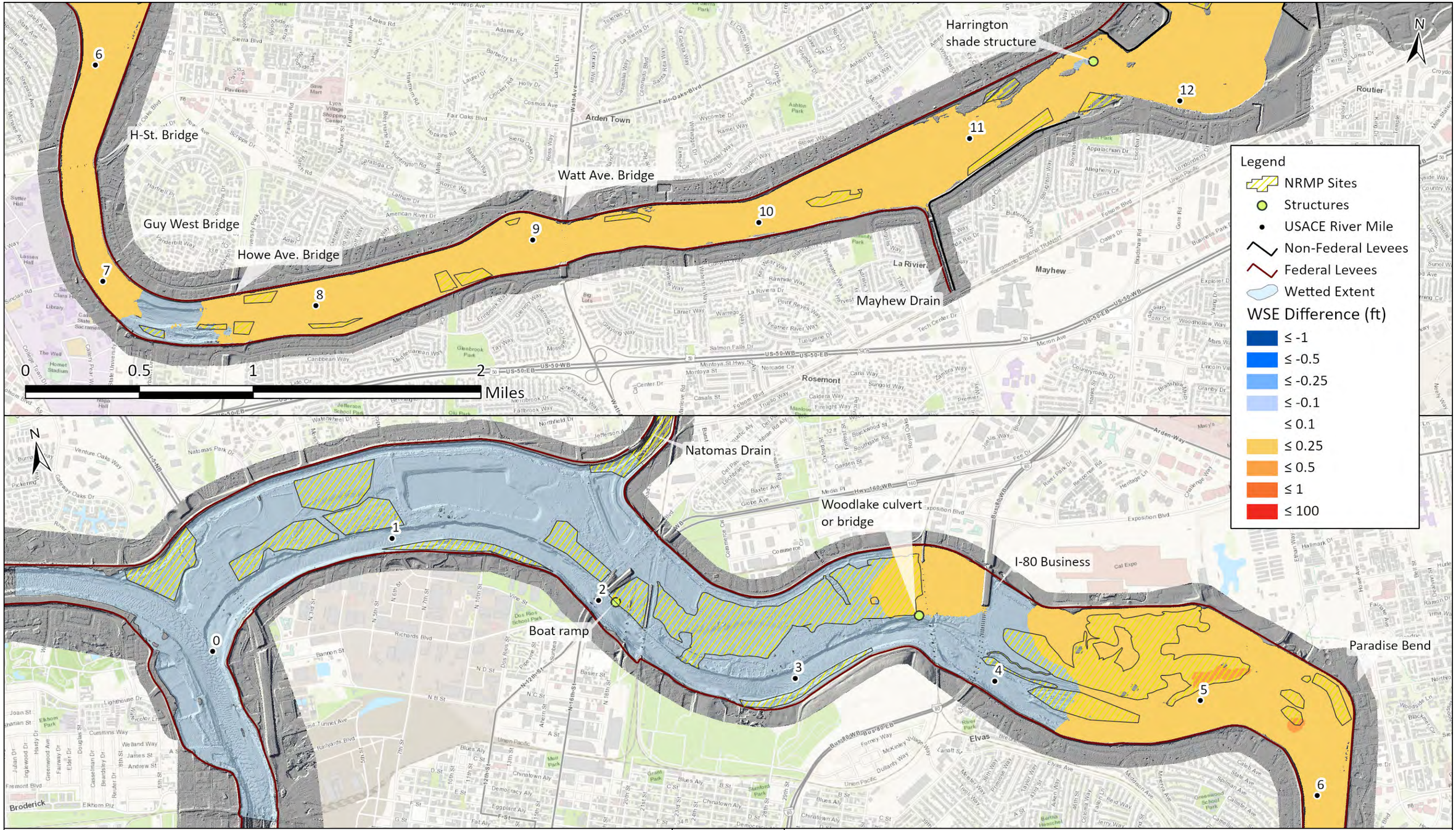
Notes: 192,000 cfs WSE differences between Scenario 12 (i.e., ARCF w/ SWW) and Scenario 1 (EG w/o SWW): S12 minus S1

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Upper Domain Scenario 12 minus Scenario 1 – WSE (192 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 16**



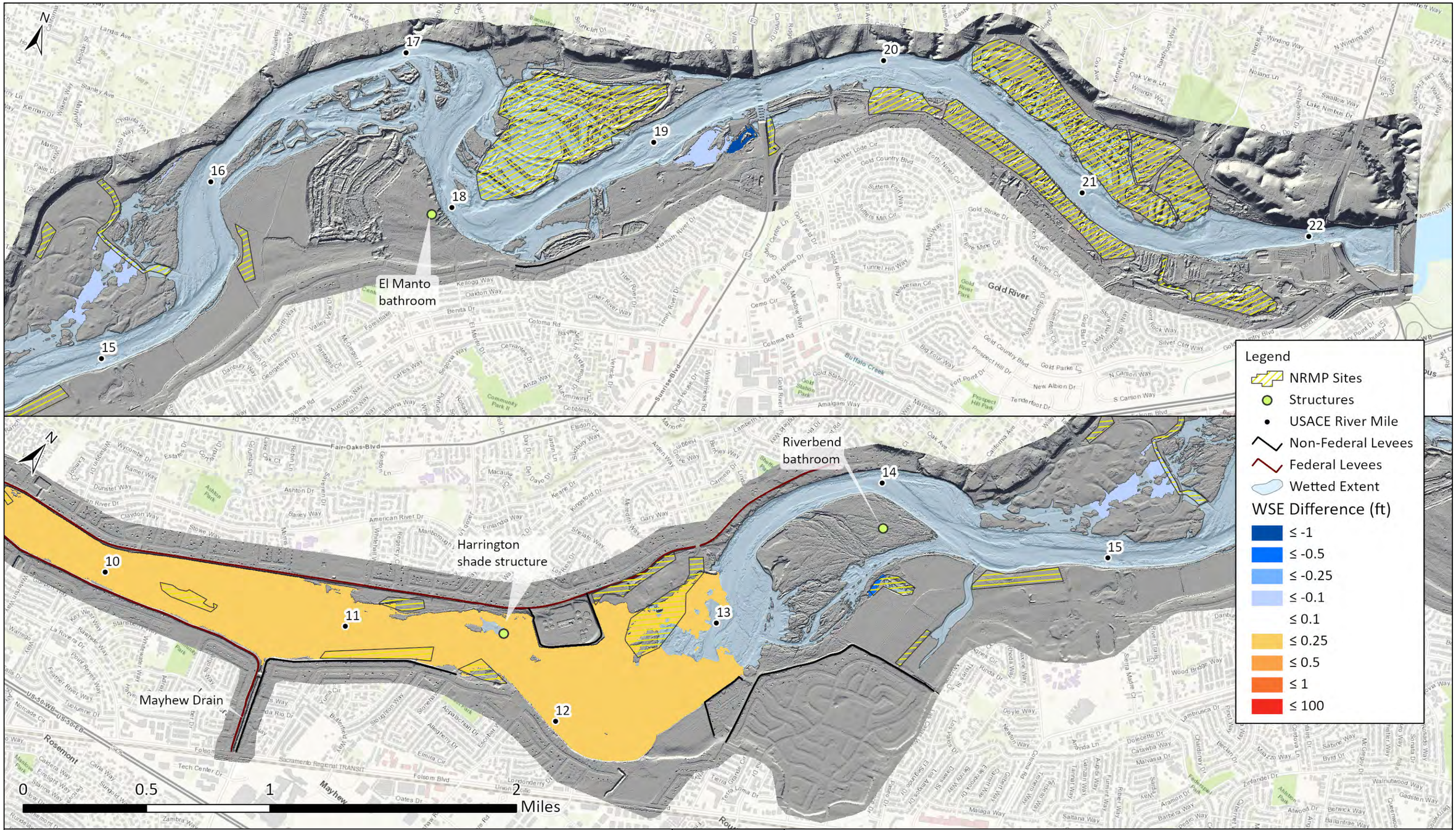
Notes: 115,000 cfs WSE differences between NRMP1 (i.e., EG + NRMP w/o SWW) and Scenario 1 (EG w/o SWW): NRMP1 minus S1

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP1 minus Scenario 1 – WSE (115 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 17**



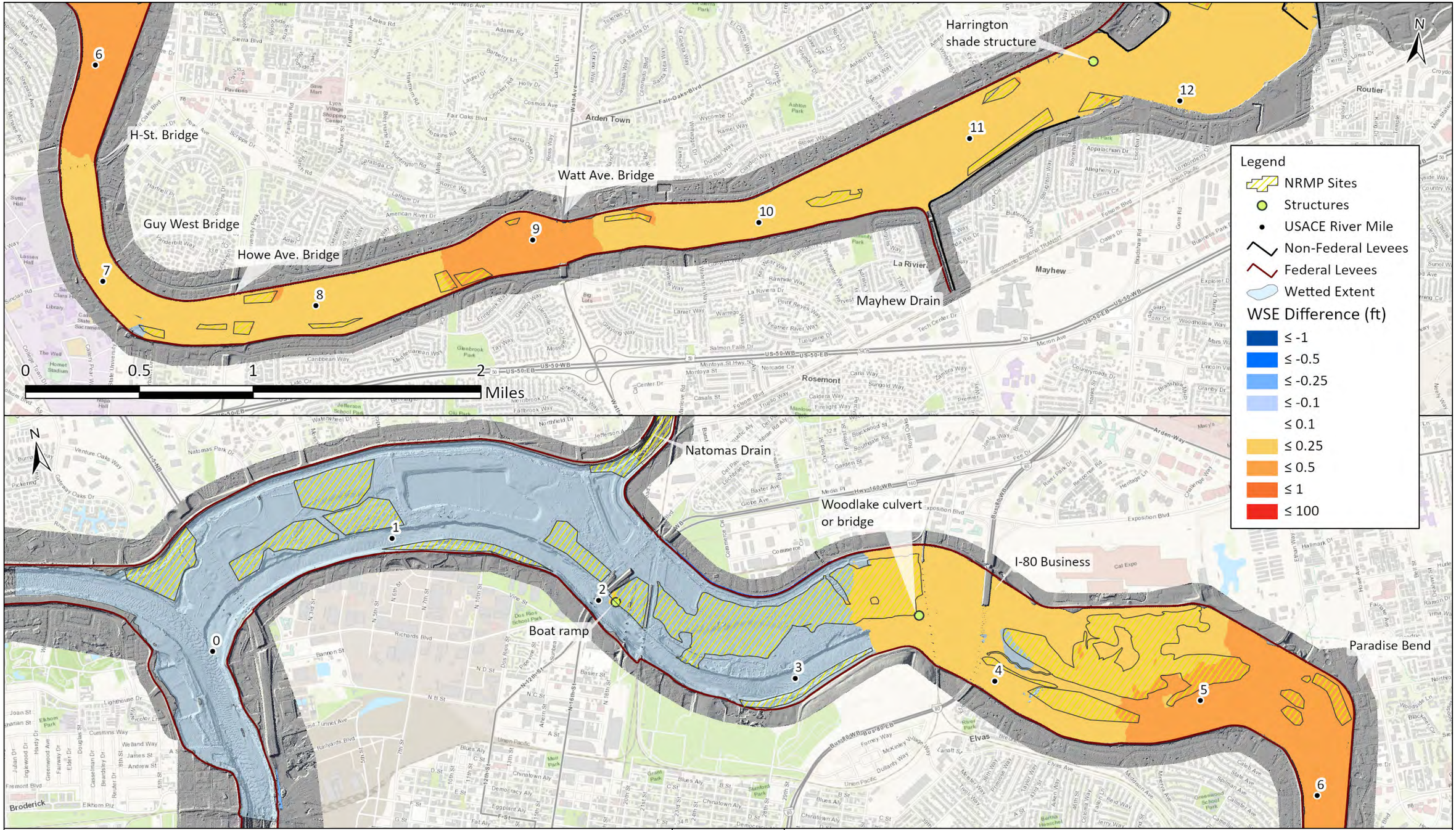
Notes: 115,000 cfs WSE differences between NRMP1 (i.e., EG + NRMP w/o SWW) and Scenario 1 (EG w/o SWW): NRMP1 minus S1

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP1 minus Scenario 1 – WSE (115 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 18**



Notes: 160,000 cfs WSE differences between NRMP1 (i.e., EG + NRMP w/o SWW) and Scenario 1 (EG w/o SWW): NRMP1 minus S1

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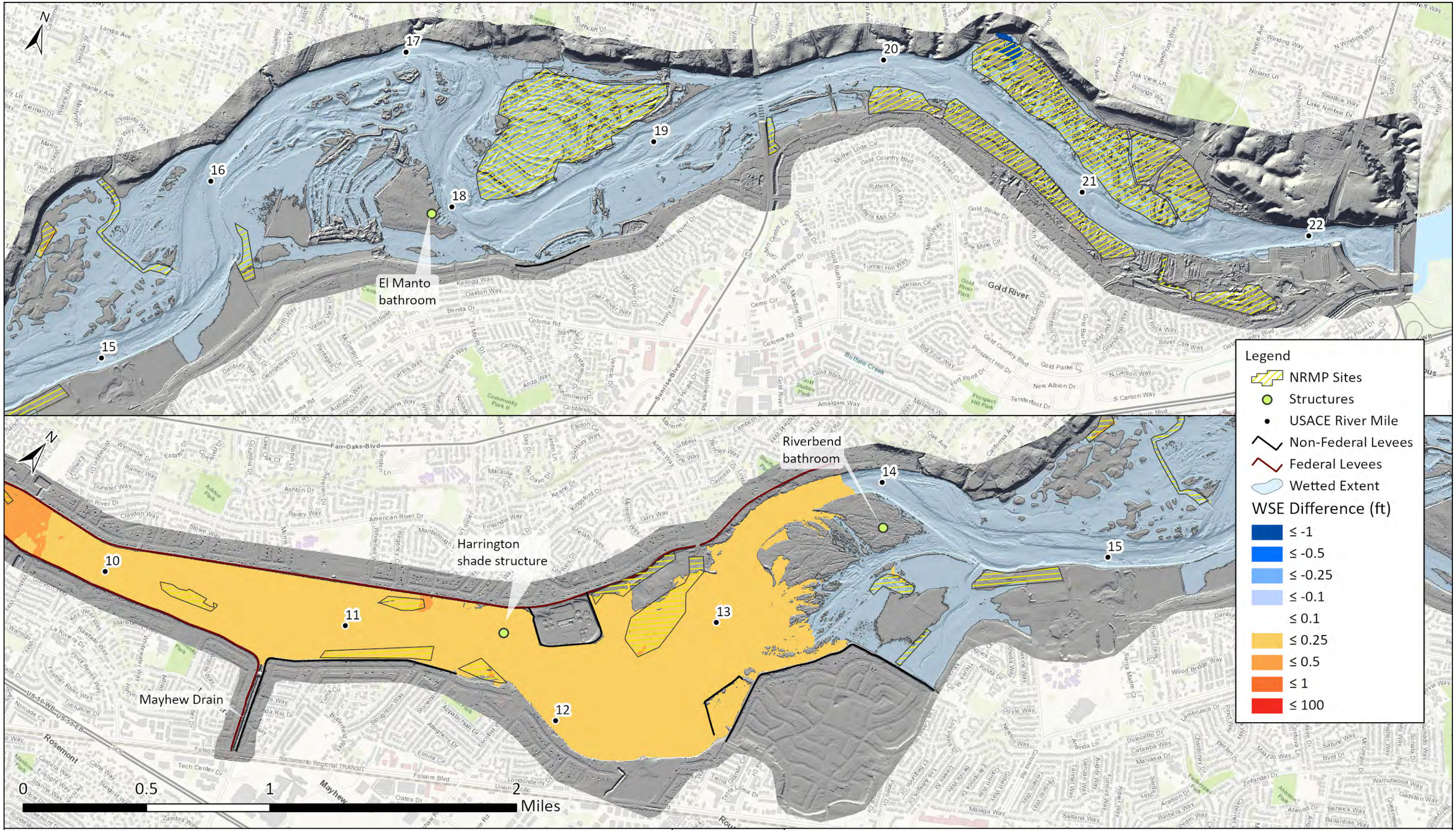
Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP1 minus Scenario 1 – WSE (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 19**



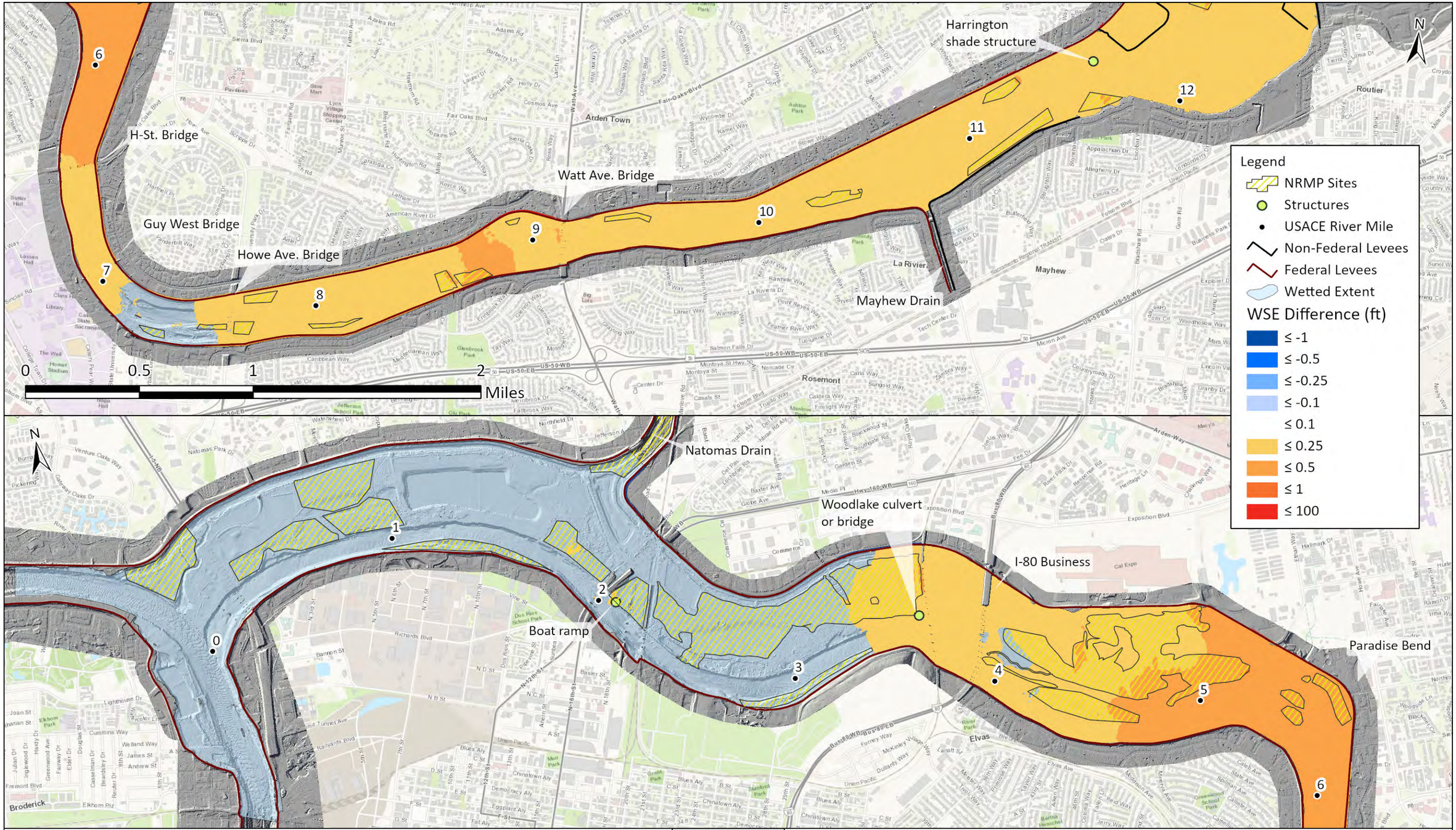
Notes: 160,000 cfs WSE differences between NRMP1 (i.e., EG + NRMP w/o SWW) and Scenario 1 (EG w/o SWW): NRMP1 minus S1

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP1 minus Scenario 1 – WSE (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 20**



Notes: 192,000 cfs WSE differences between NRMP1 (i.e., EG + NRMP w/o SWW) and Scenario 1 (EG w/o SWW): NRMP1 minus S1

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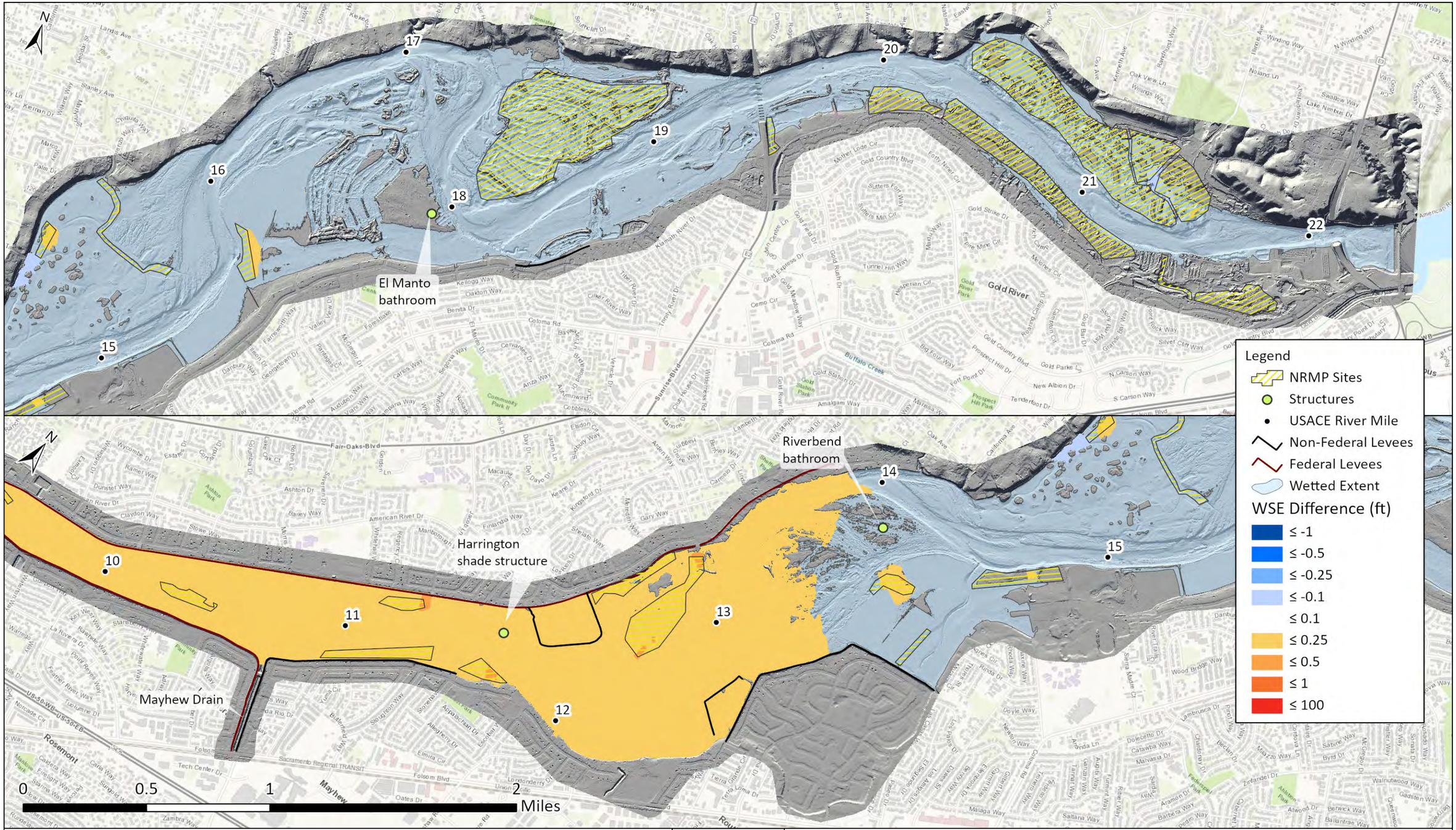
Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP1 minus Scenario 1 – WSE (192 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 21**



Notes: 192,000 cfs WSE differences between NRMP1 (i.e., EG + NRMP w/o SWW) and Scenario 1 (EG w/o SWW): NRMP1 minus S1

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP1 minus Scenario 1 – WSE (192 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 22**

Harrington shade structure

H-St. Bridge

Watt Ave. Bridge

Guy West Bridge

Howe Ave. Bridge

Mayhew Drain

Natomas Drain

Woodlake culvert or bridge

I-80 Business

Boat ramp

Paradise Bend

0 0.5 1 2 Miles

Legend

- NRMP Sites
- Structures
- ARCF Sites
- WF Rearing Sites
- CVPIA SHIP Sites- 10%
- CVPIA SHIP Sites- 35%
- USACE River Mile
- Non-Federal Levees
- Federal Levees
- Wetted Extent

WSE Difference (ft)

- ≤ -1
- ≤ -0.5
- ≤ -0.25
- ≤ -0.1
- ≤ 0.1
- ≤ 0.25
- ≤ 0.5
- ≤ 1
- ≤ 100

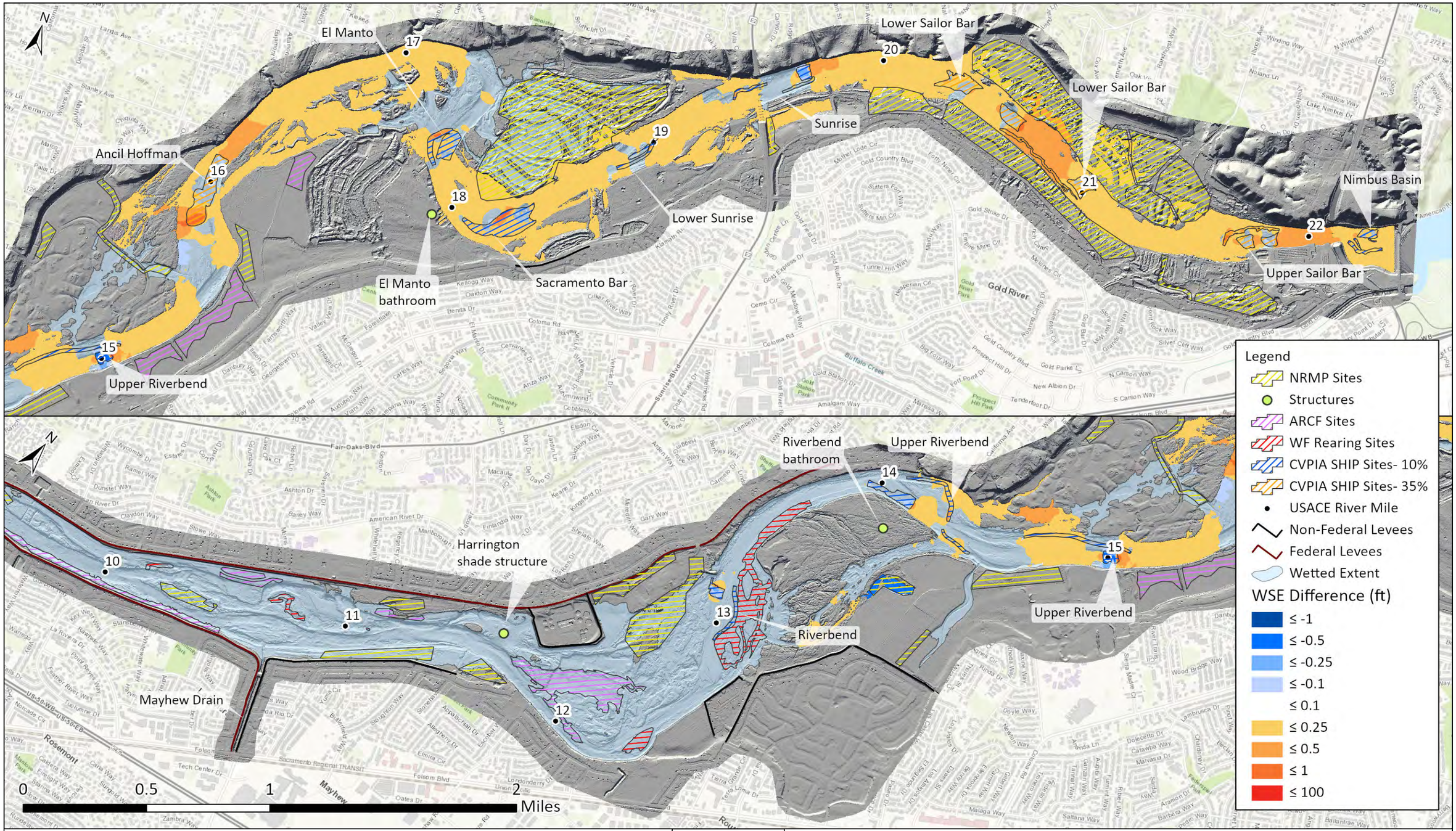
Notes: 115,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 12 (i.e., ARCF w/ SWW): NRMP2 minus S12

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP2 minus Scenario 12 – WSE (115 kcfs)

Project No. 21−1023 | Created By: MNC | **Figure 23**



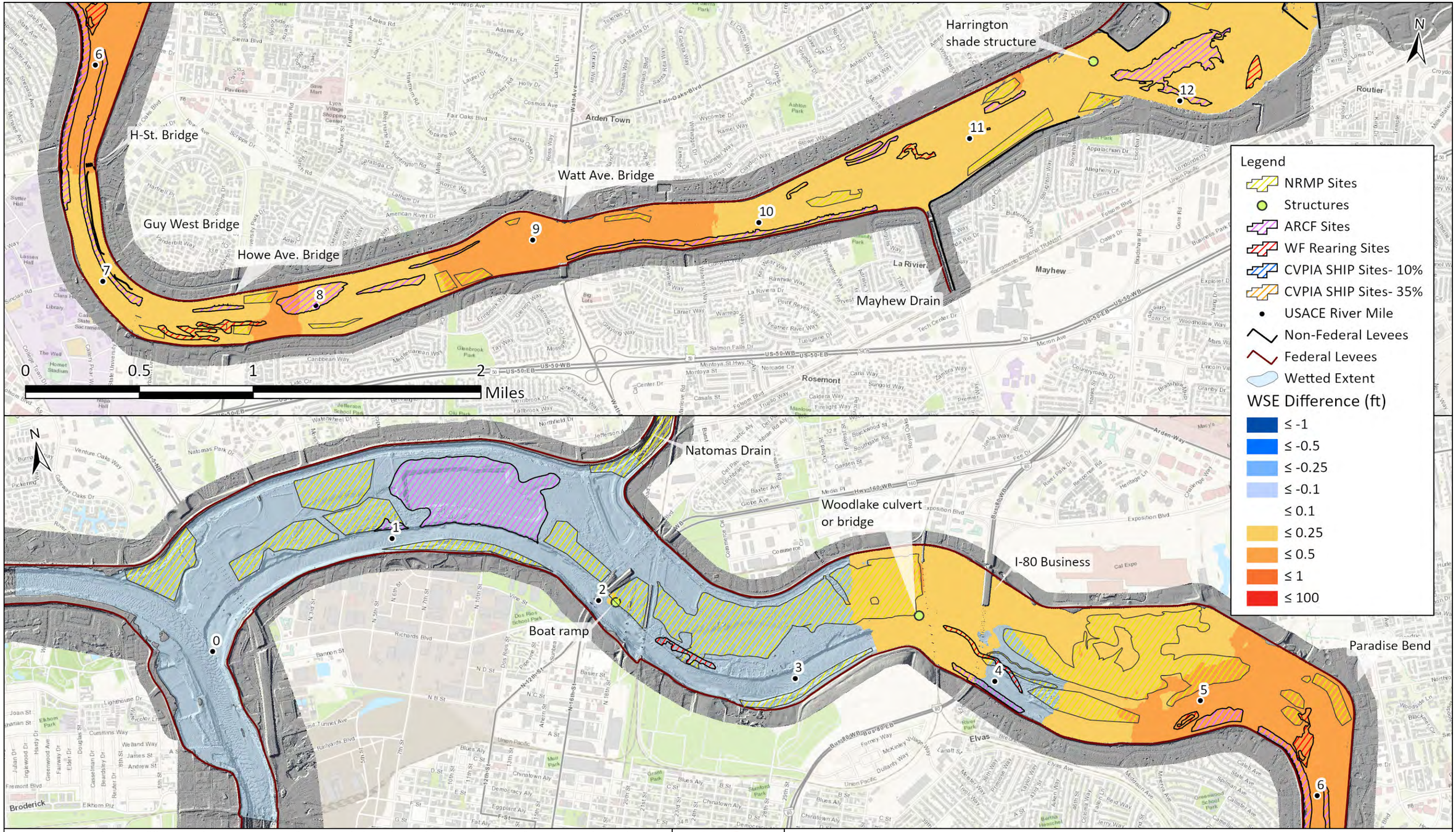
Notes: 115,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 12 (i.e., ARCF w/ SWW): NRMP2 minus S12

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP2 minus Scenario 12 – WSE (115 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 24**



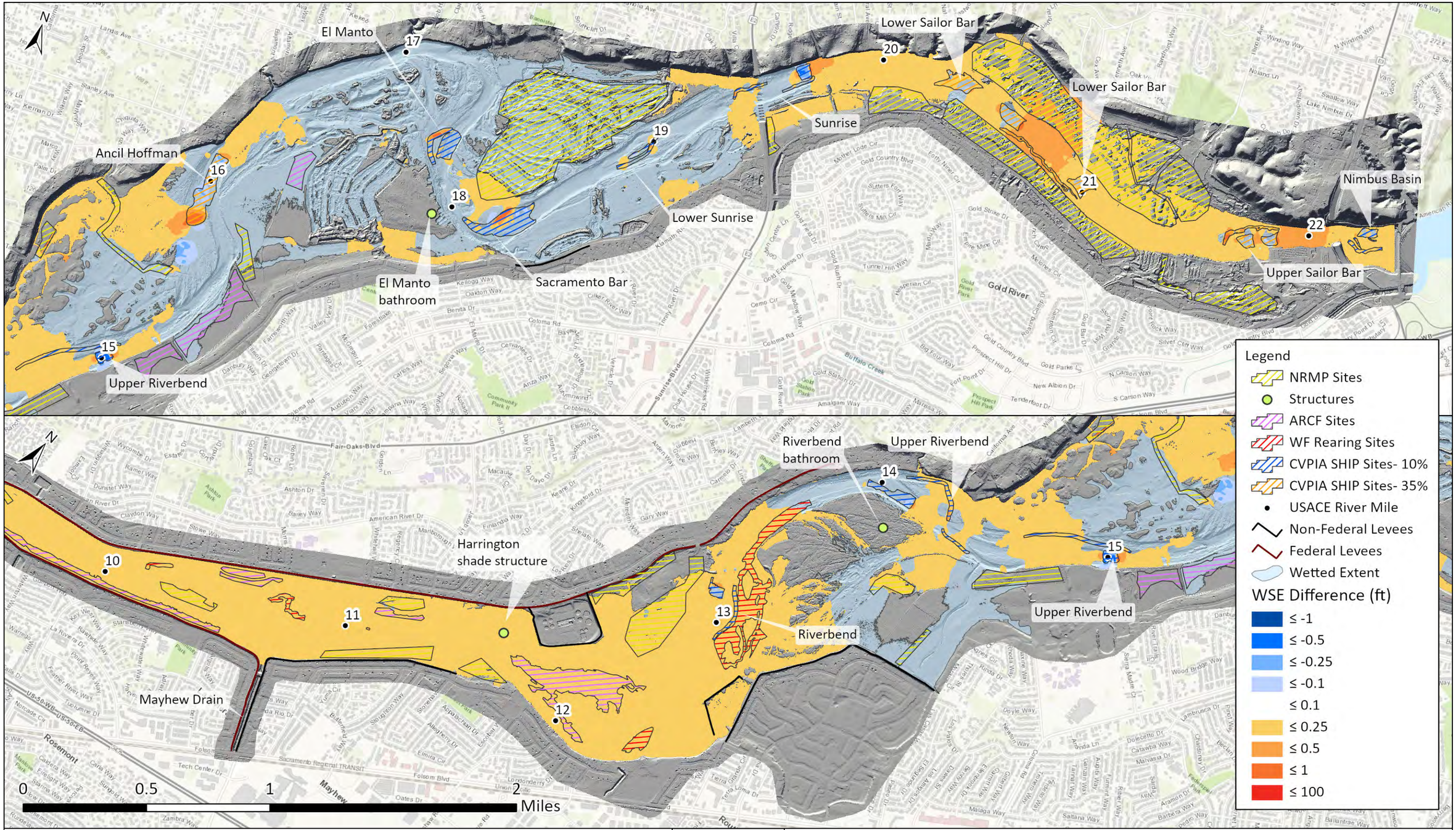
Notes: 160,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 12 (i.e., ARCF w/ SWW): NRMP2 minus S12

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP2 minus Scenario 12 – WSE (160 kcfs)

Project No. 21−1023 | Created By: MNC | **Figure 25**



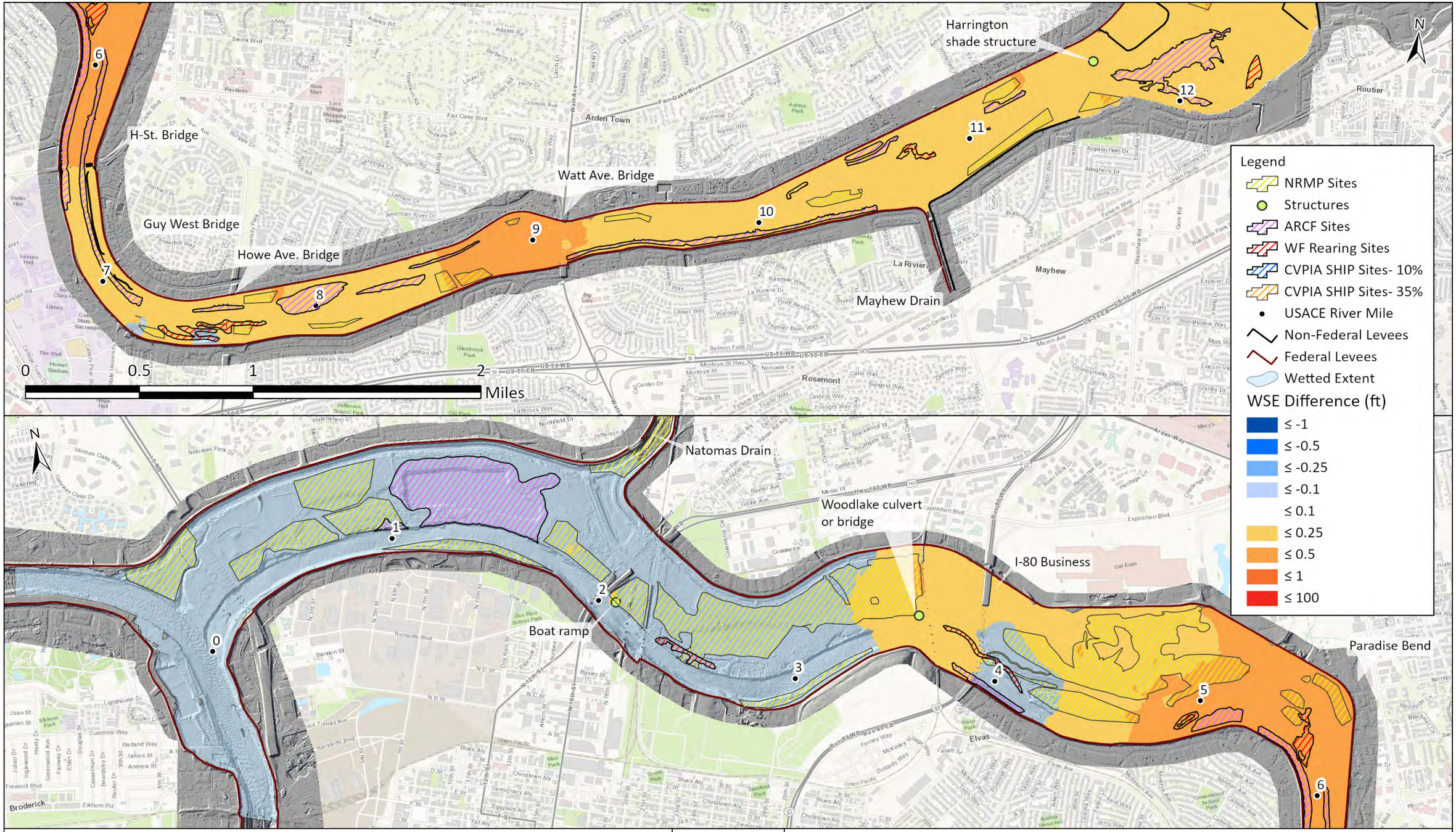
Notes: 160,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 12 (i.e., ARCF w/ SWW): NRMP2 minus S12

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP2 minus Scenario 12 – WSE (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 26**



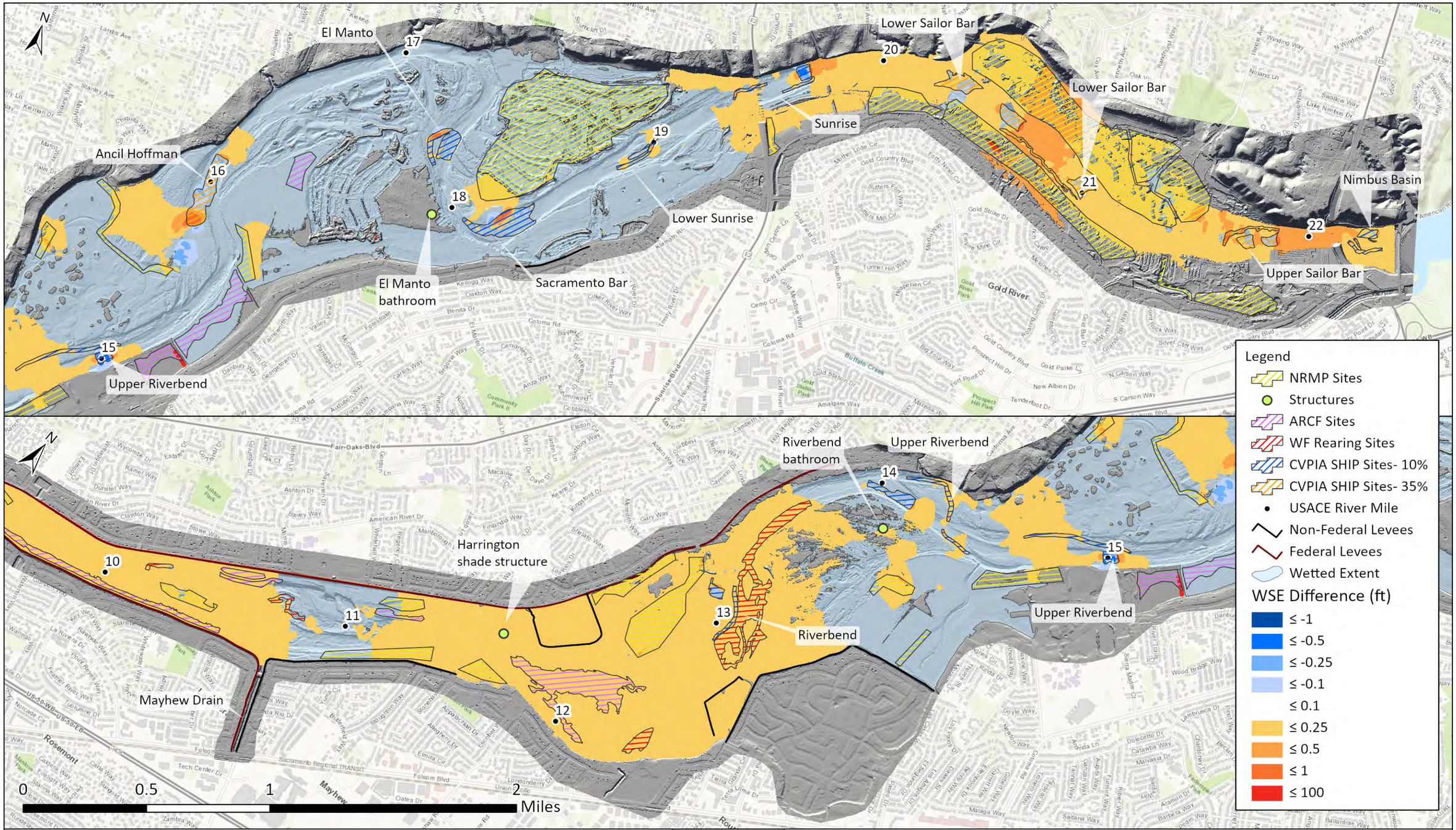
Notes: 192,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 12 (i.e., ARCF w/ SWW): NRMP2 minus S12

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP2 minus Scenario 12 – WSE (192 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 27**



Notes: 192,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 12 (i.e., ARCF w/ SWW): NRMP2 minus S12

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP2 minus Scenario 12 – WSE (192 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 28**

Harrington shade structure

H-St. Bridge

Watt Ave. Bridge

Guy West Bridge

Howe Ave. Bridge

Mayhew Drain

Natomas Drain

Woodlake culvert or bridge

I-80 Business

Boat ramp

Paradise Bend

0 0.5 1 2 Miles

Legend

- NRMP Sites
- Structures
- ARCF Sites
- WF Rearing Sites
- CVPIA SHIP Sites- 10%
- CVPIA SHIP Sites- 35%
- USACE River Mile
- Non-Federal Levees
- Federal Levees
- Wetted Extent

WSE Difference (ft)

- ≤ -1
- ≤ -0.5
- ≤ -0.25
- ≤ -0.1
- ≤ 0.1
- ≤ 0.25
- ≤ 0.5
- ≤ 1
- ≤ 100

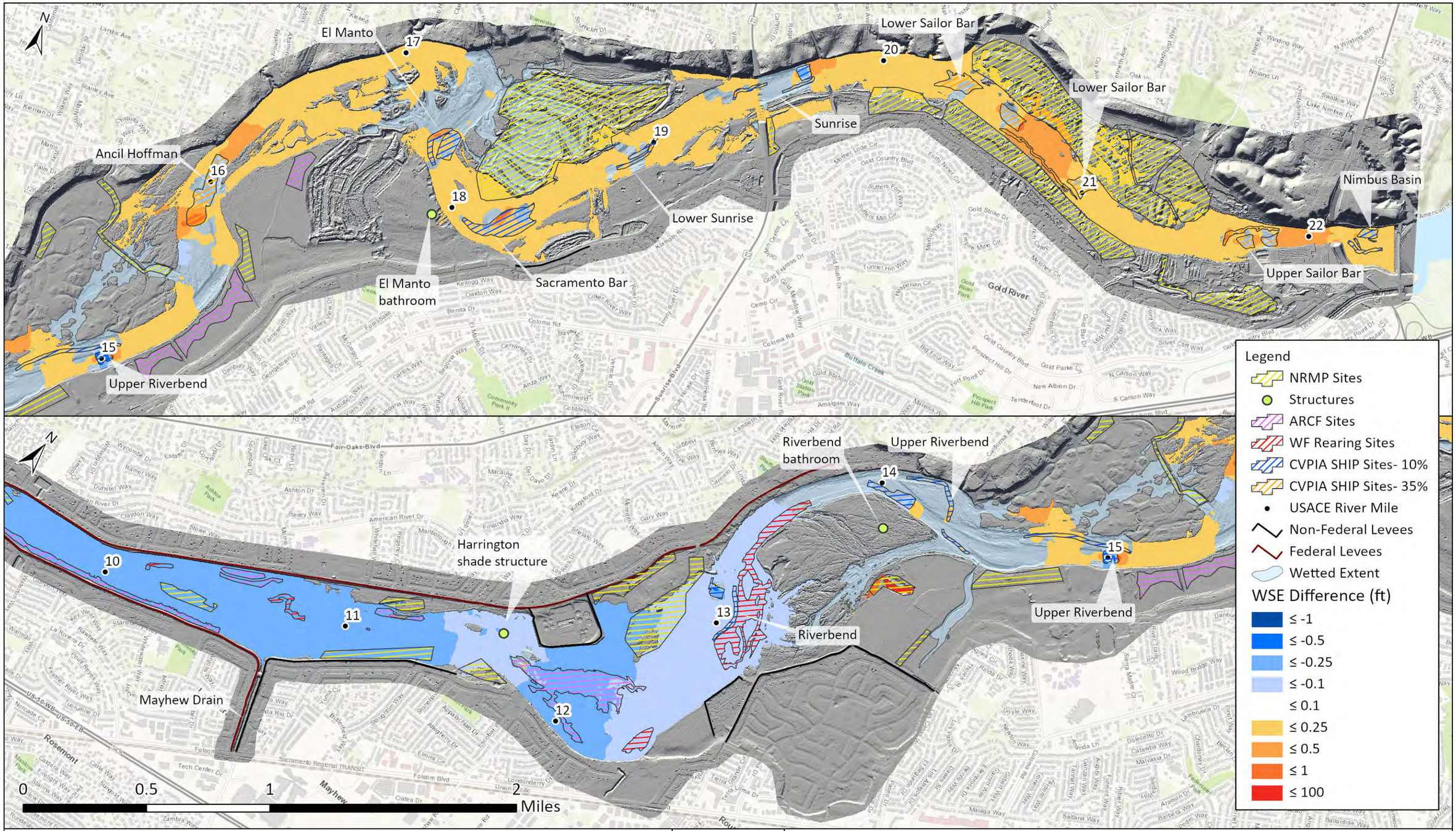
Notes: 115,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 1 (i.e., EG w/o SWW): NRMP2 minus S1

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP2 minus Scenario 1 – WSE (115 kcfs)

Project No. 21−1023 | Created By: MNC | **Figure 29**



Notes: 115,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 1 (i.e., EG w/o SWW): NRMP2 minus S1

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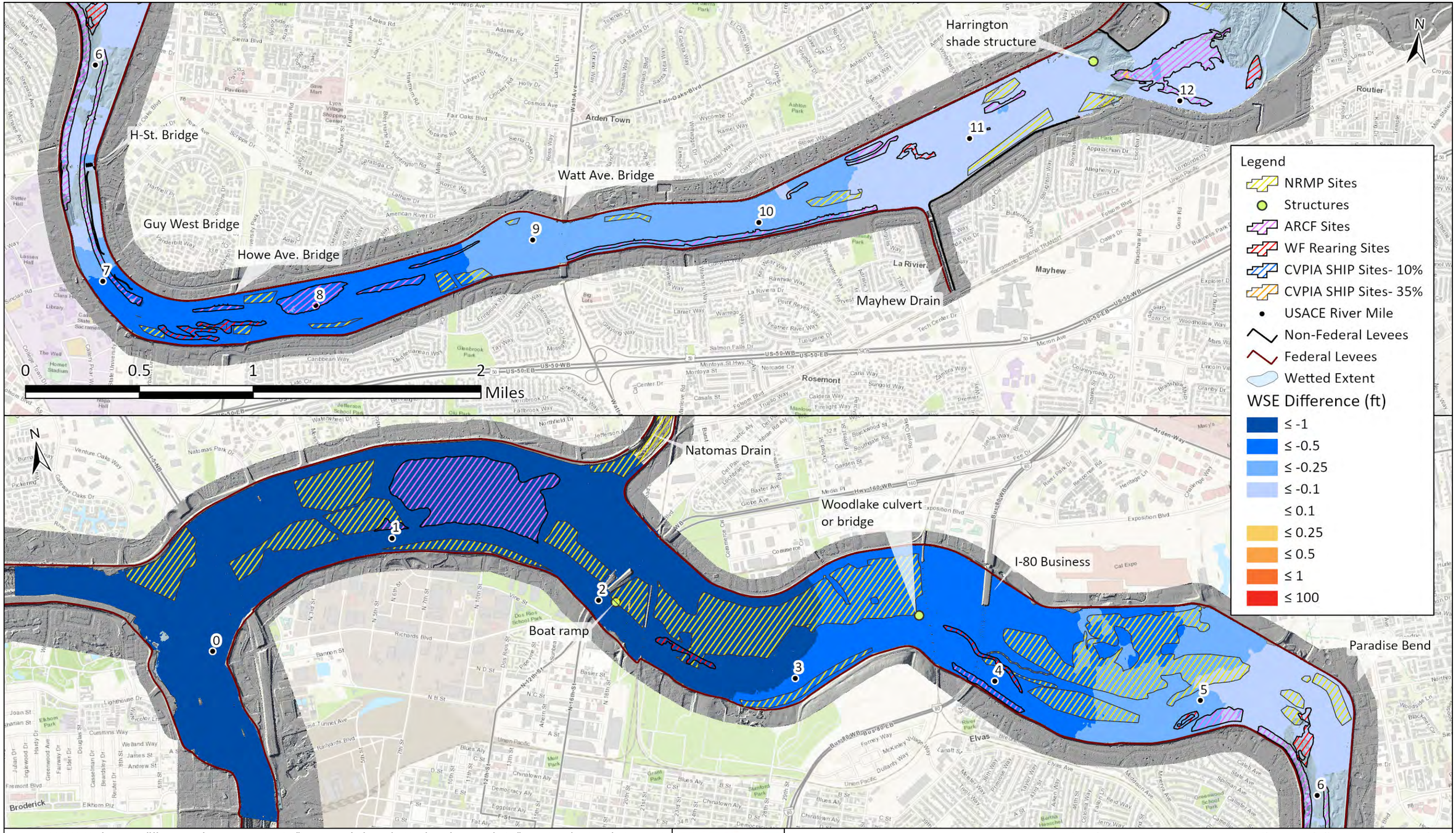
Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP2 minus Scenario 1 – WSE (115 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 30**



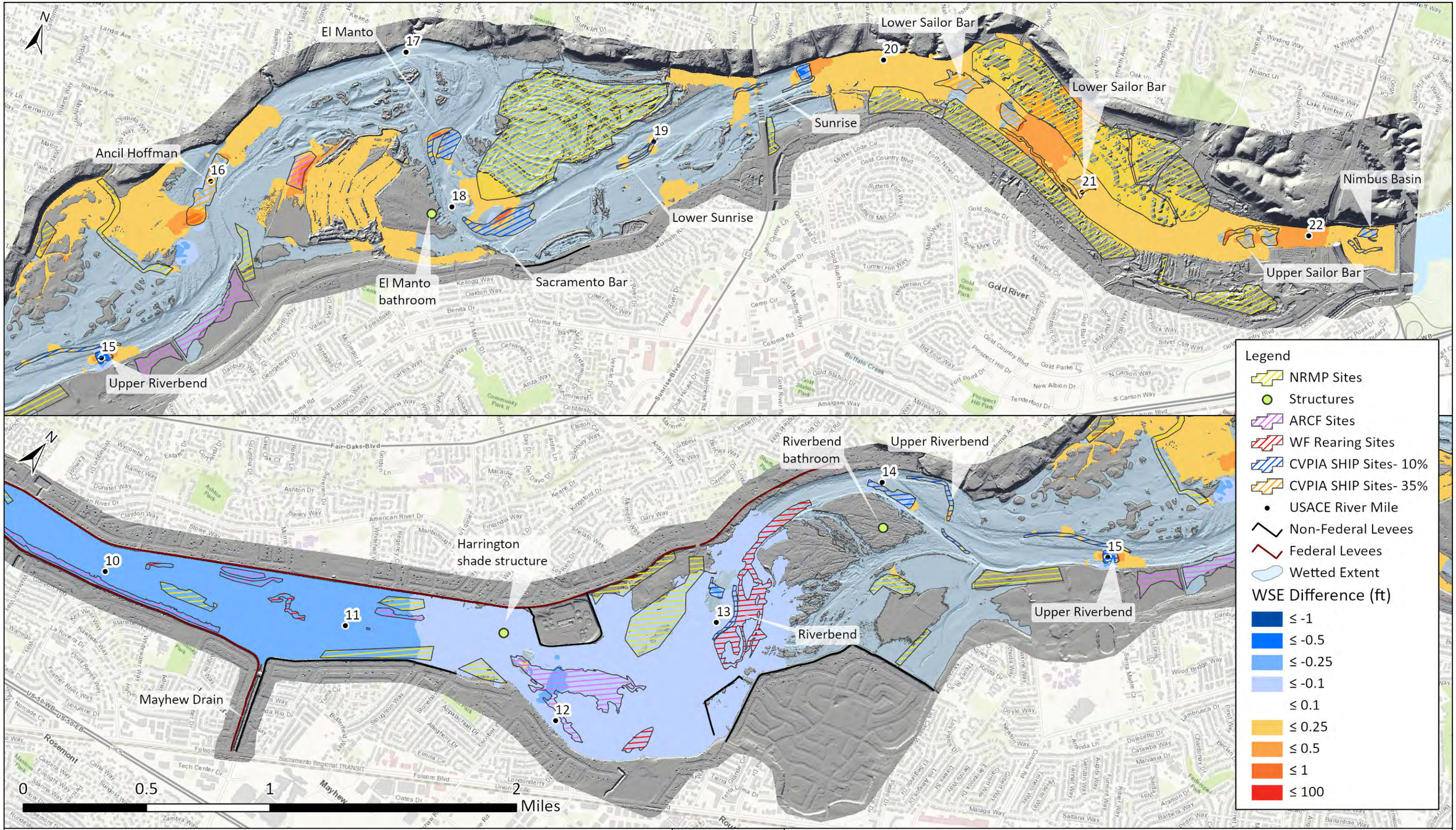
Notes: 160,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 1 (i.e., EG w/o SWW): NRMP2 minus S1

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP2 minus Scenario 1 – WSE (160 kcfs)

Project No. 21−1023 | Created By: MNC | **Figure 31**



Notes: 160,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 1 (i.e., EG w/o SWW): NRMP2 minus S1

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP2 minus Scenario 1 – WSE (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 32**

Harrington shade structure

H-St. Bridge

Watt Ave. Bridge

Guy West Bridge

Howe Ave. Bridge

Mayhew Drain

Natomas Drain

Woodlake culvert or bridge

I-80 Business

Boat ramp

Paradise Bend

0 0.5 1 2 Miles

Legend

- NRMP Sites
- Structures
- ARCF Sites
- WF Rearing Sites
- CVPIA SHIP Sites- 10%
- CVPIA SHIP Sites- 35%
- USACE River Mile
- Non-Federal Levees
- Federal Levees
- Wetted Extent

WSE Difference (ft)

- ≤ -1
- ≤ -0.5
- ≤ -0.25
- ≤ -0.1
- ≤ 0.1
- ≤ 0.25
- ≤ 0.5
- ≤ 1
- ≤ 100

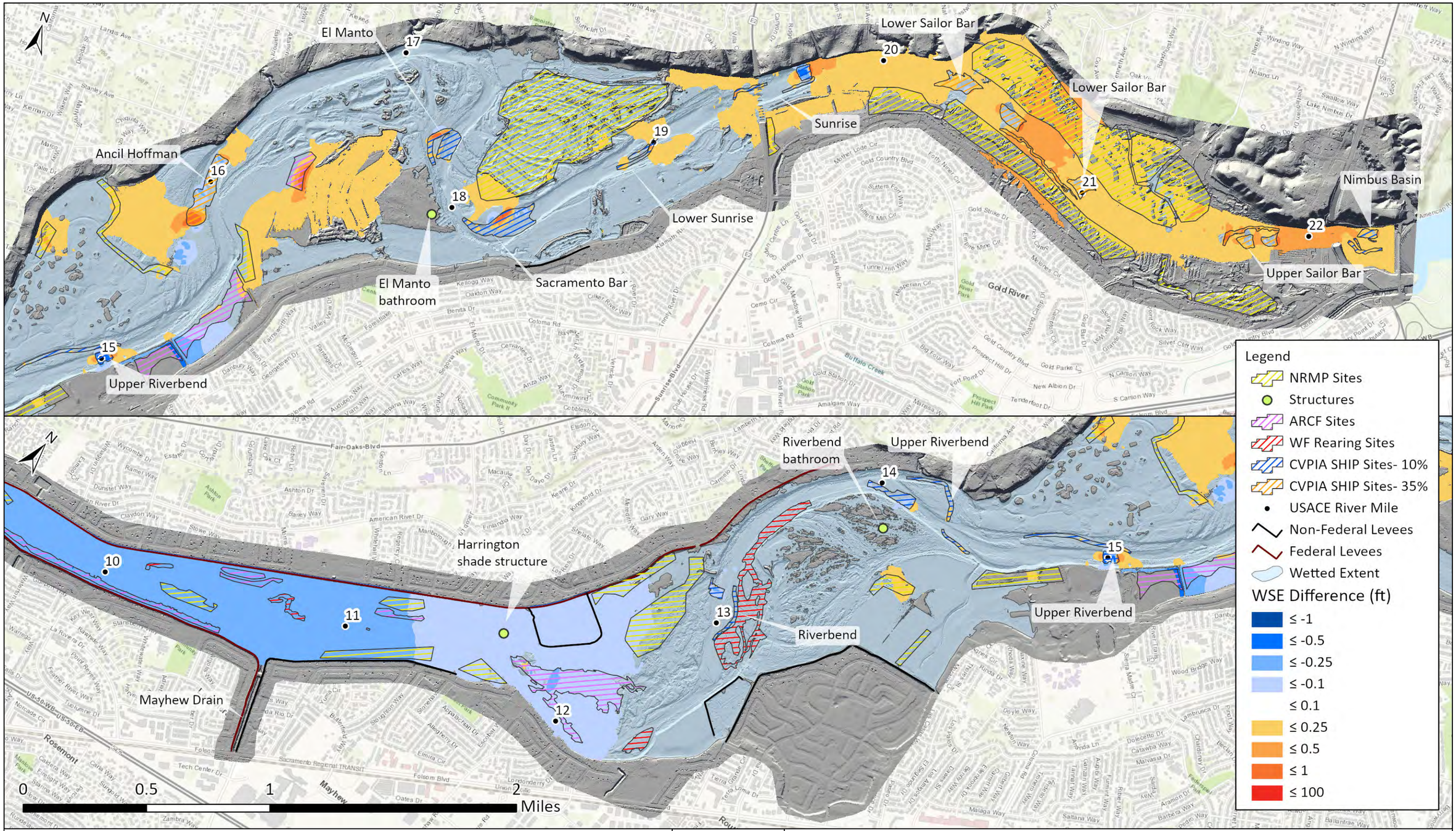
Notes: 192,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 1 (i.e., EG w/o SWW): NRMP2 minus S1

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP2 minus Scenario 1 – WSE (192 kcfs)

Project No. 21−1023 | Created By: MNC | **Figure 33**



Notes: 192,000 cfs WSE differences between NRMP2 (i.e., Cumulative w/ SWW) and Scenario 1 (i.e., EG w/o SWW): NRMP2 minus S1

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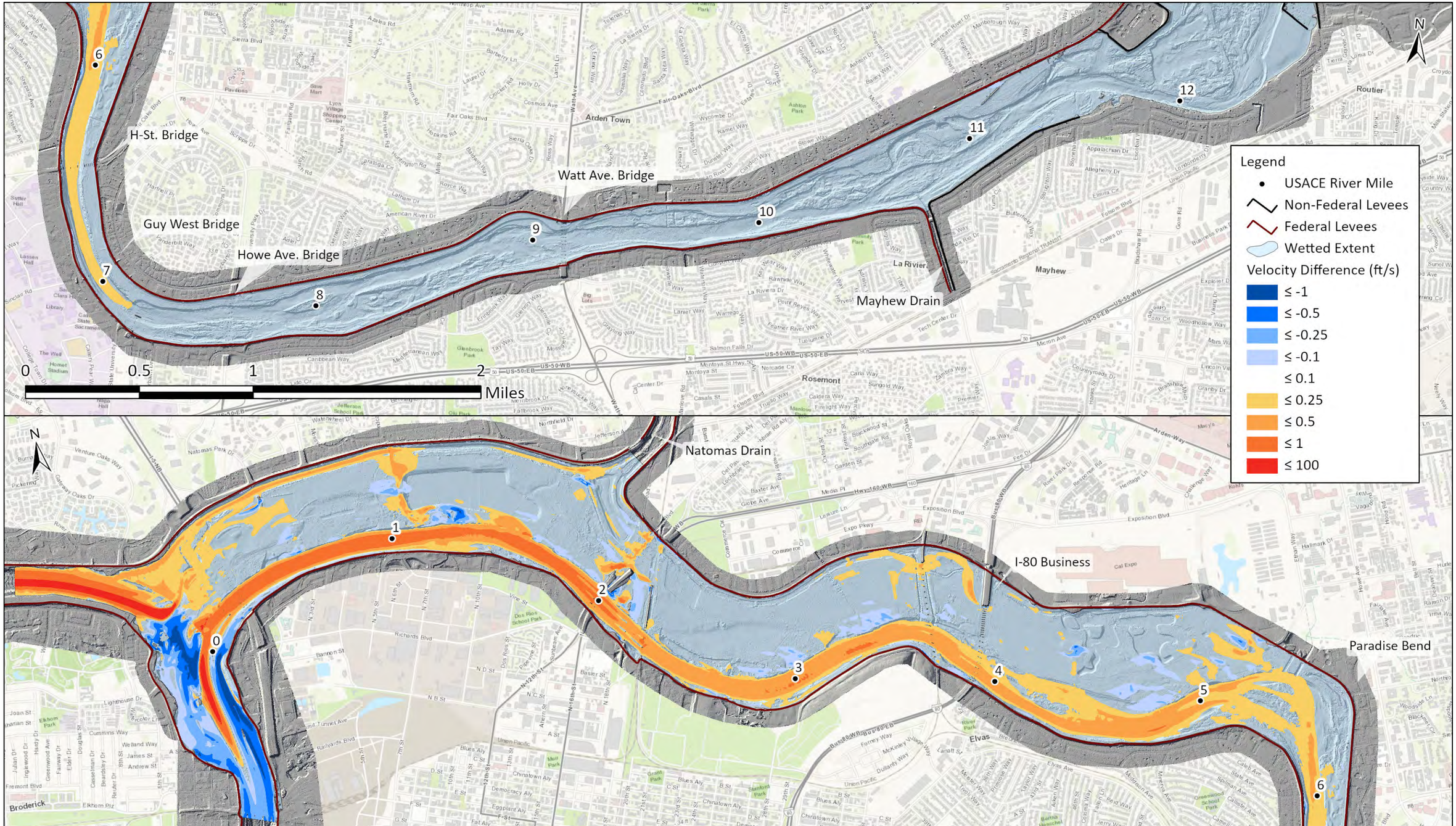
Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP2 minus Scenario 1 – WSE (192 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 34**



Notes: 160,000 cfs Velocity differences between Scenario 2 and Scenario 1: S2 minus S1

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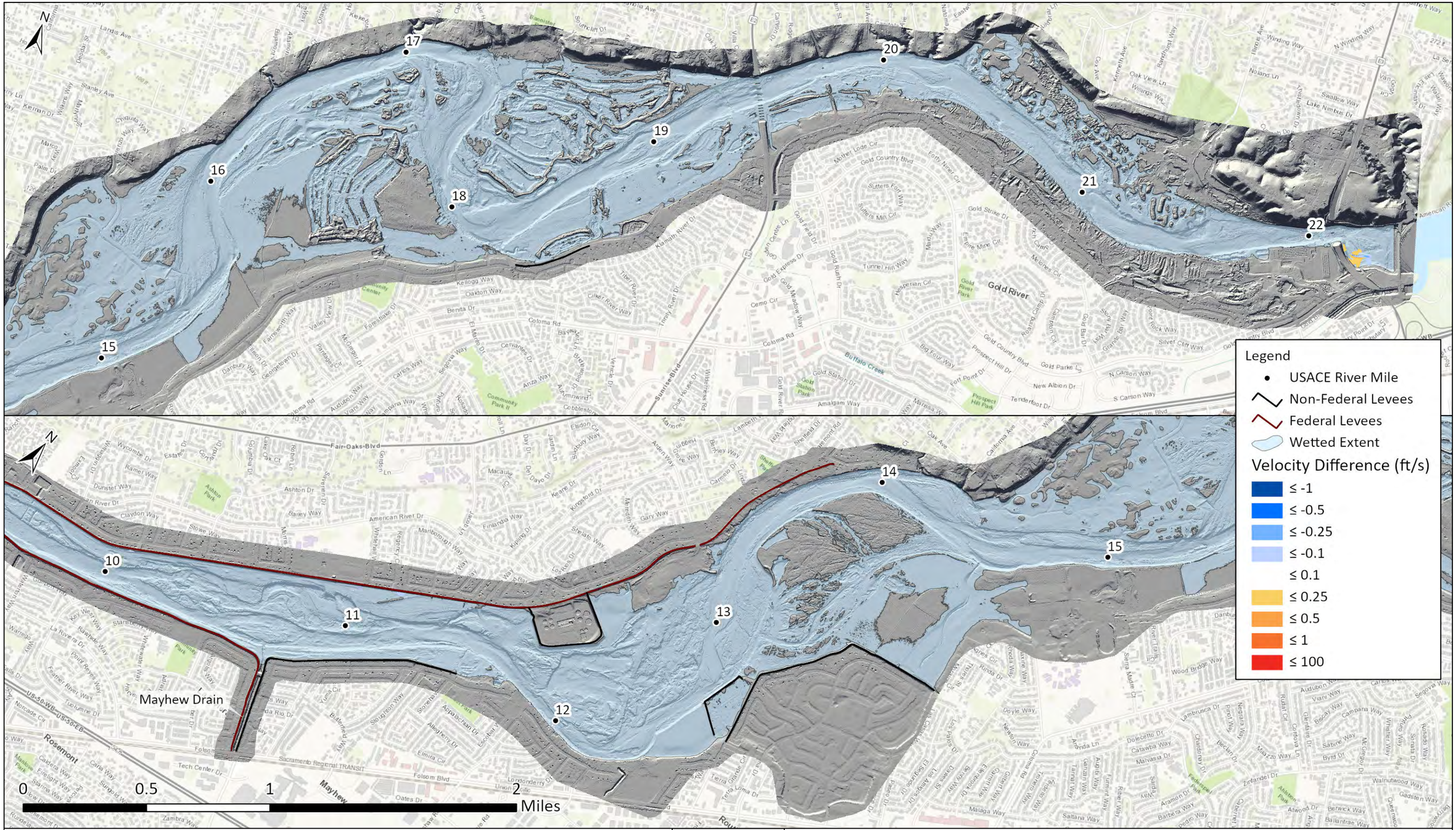
Natural Resource Management Plan Modeling Support Project

Lower Domain Scenario 2 minus Scenario 1 – Velocity (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 35**



Notes: 160,000 cfs Velocity differences between Scenario 2 and Scenario 1: S2 minus S1

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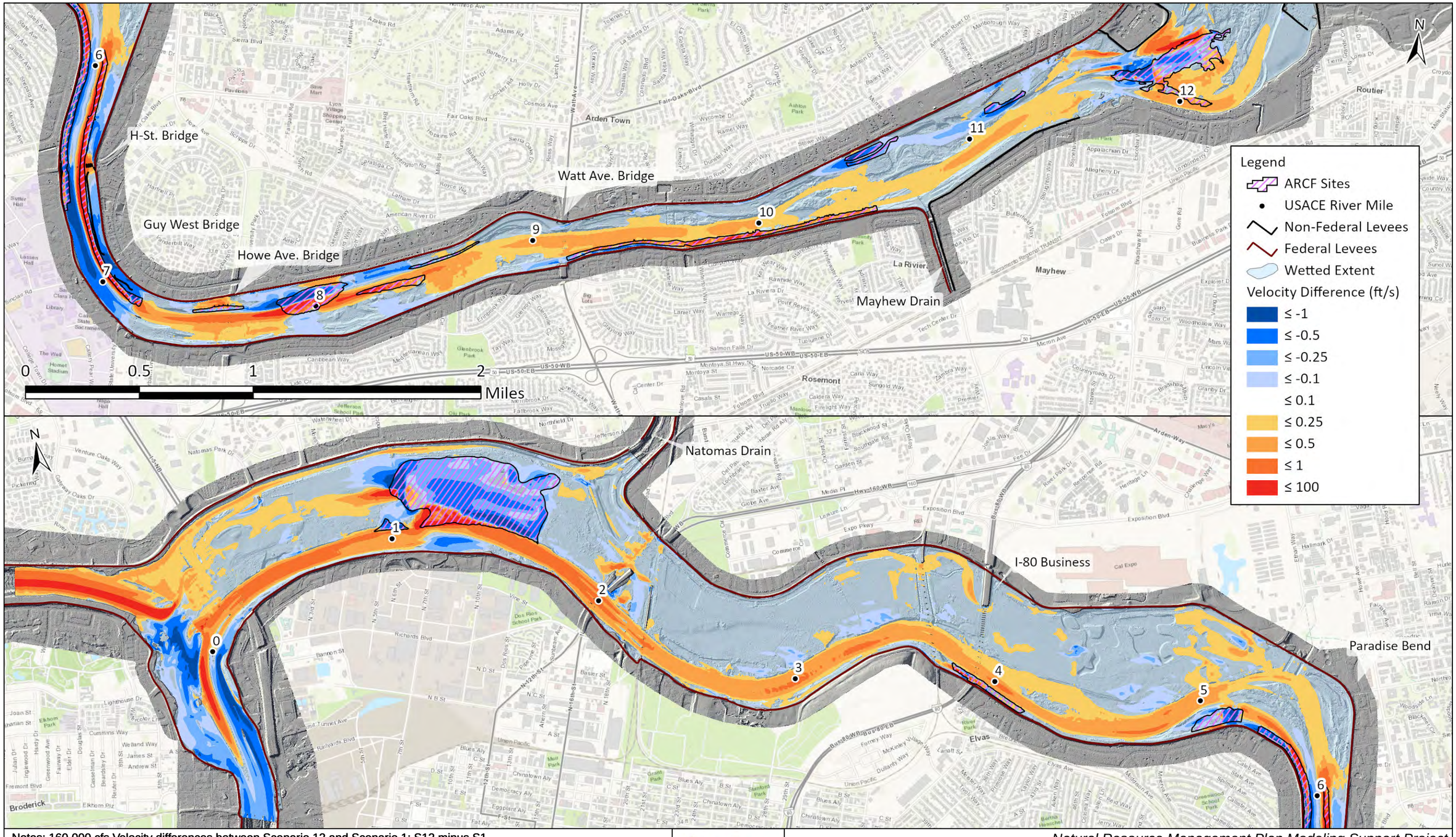
Natural Resource Management Plan Modeling Support Project

Upper Domain Scenario 2 minus Scenario 1 – Velocity (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 36**



Notes: 160,000 cfs Velocity differences between Scenario 12 and Scenario 1: S12 minus S1

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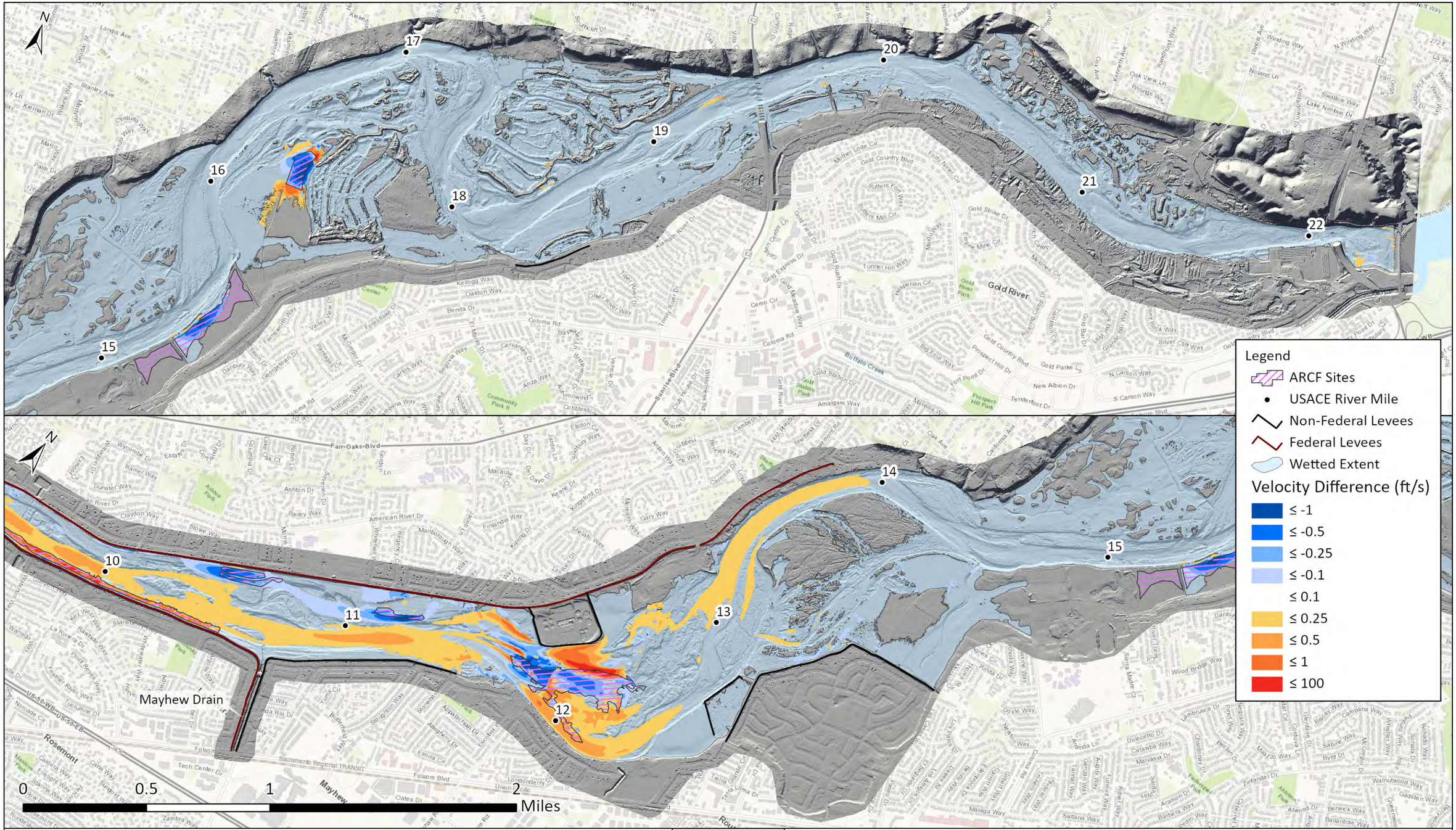
Natural Resource Management Plan Modeling Support Project

Lower Domain Scenario 12 minus Scenario 1 – Velocity (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 37**



Notes: 160,000 cfs Velocity differences between Scenario 12 and Scenario 1: S12 minus S1

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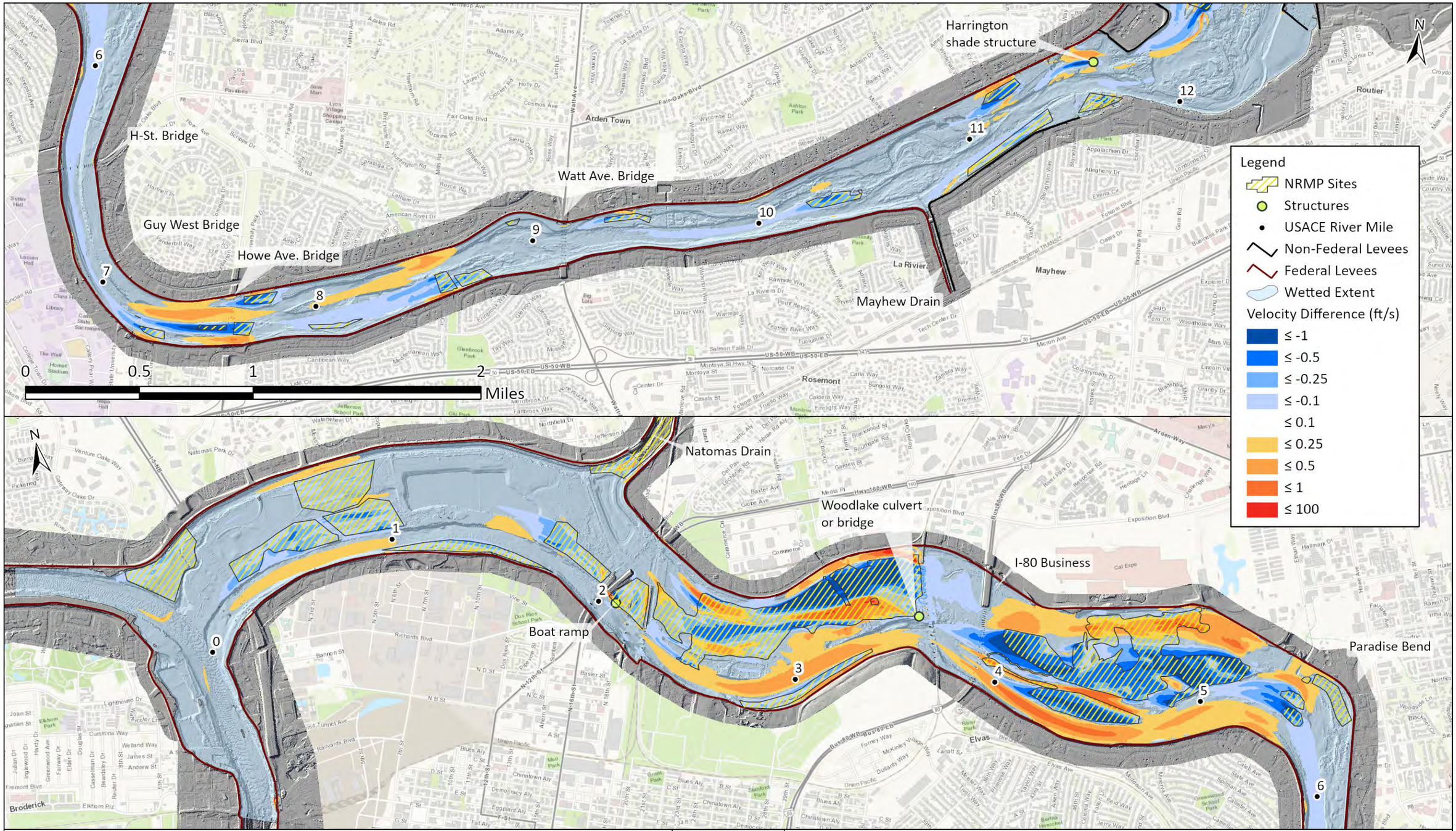
Natural Resource Management Plan Modeling Support Project

Upper Domain Scenario 12 minus Scenario 1 – Velocity (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 38**

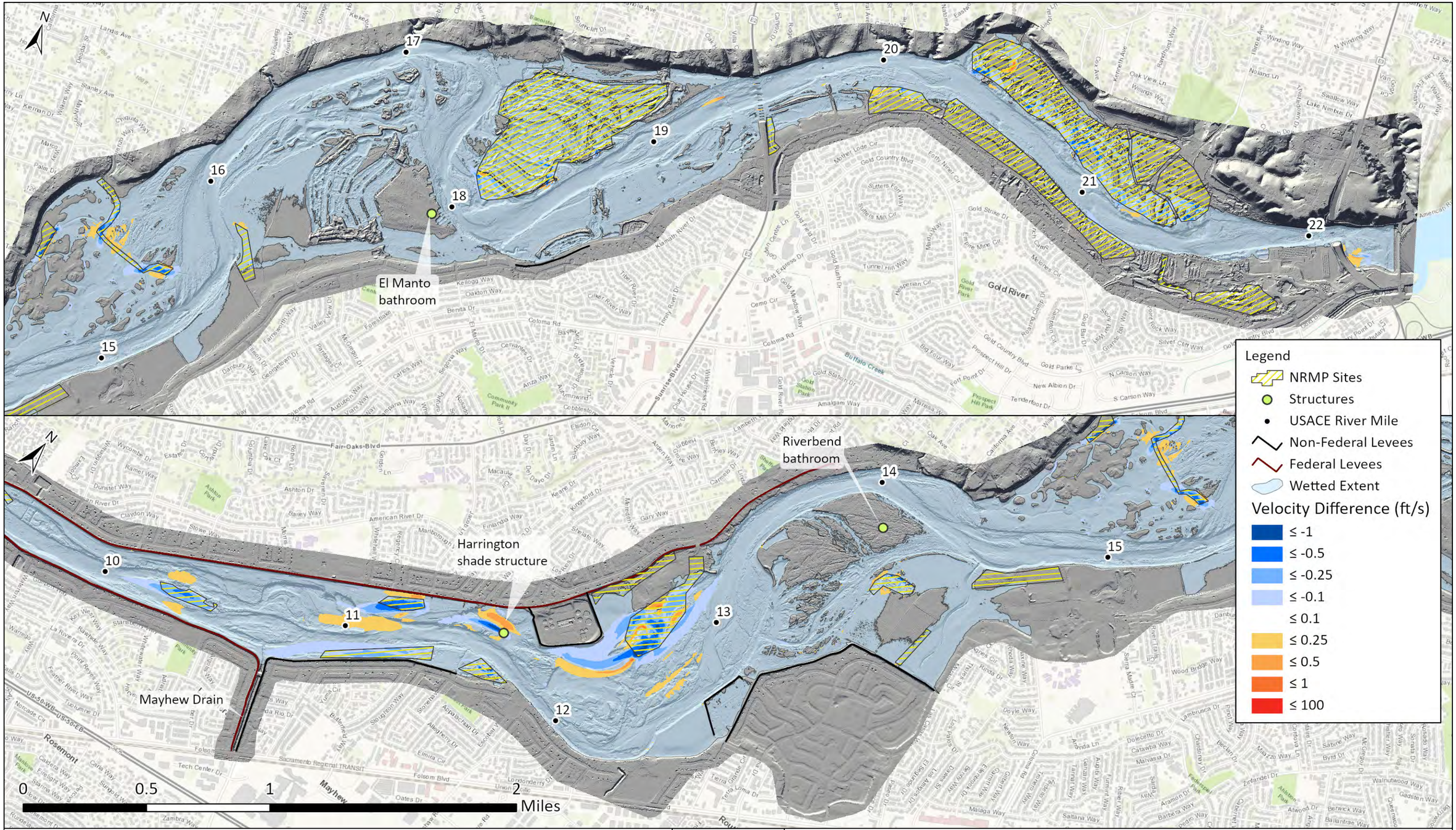


Notes: 160,000 cfs Velocity differences between NRMP1 and Scenario 1: NRMP1 minus S1

Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP1 minus Scenario 1 – Velocity (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 39**



Notes: 160,000 cfs Velocity differences between NRMP1 and Scenario 1: NRMP1 minus S1

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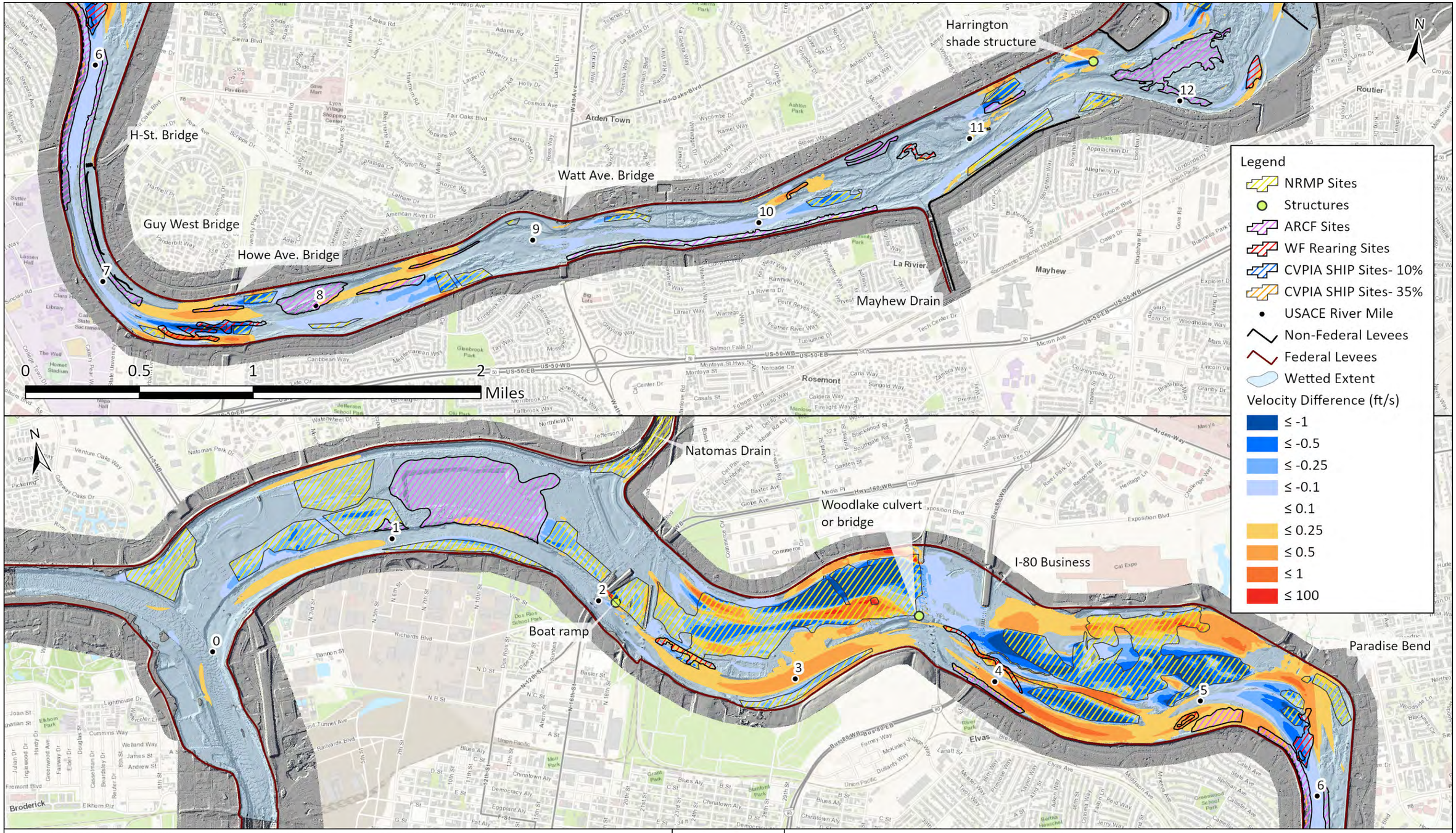
Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP1 minus Scenario 1 – Velocity (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 40**

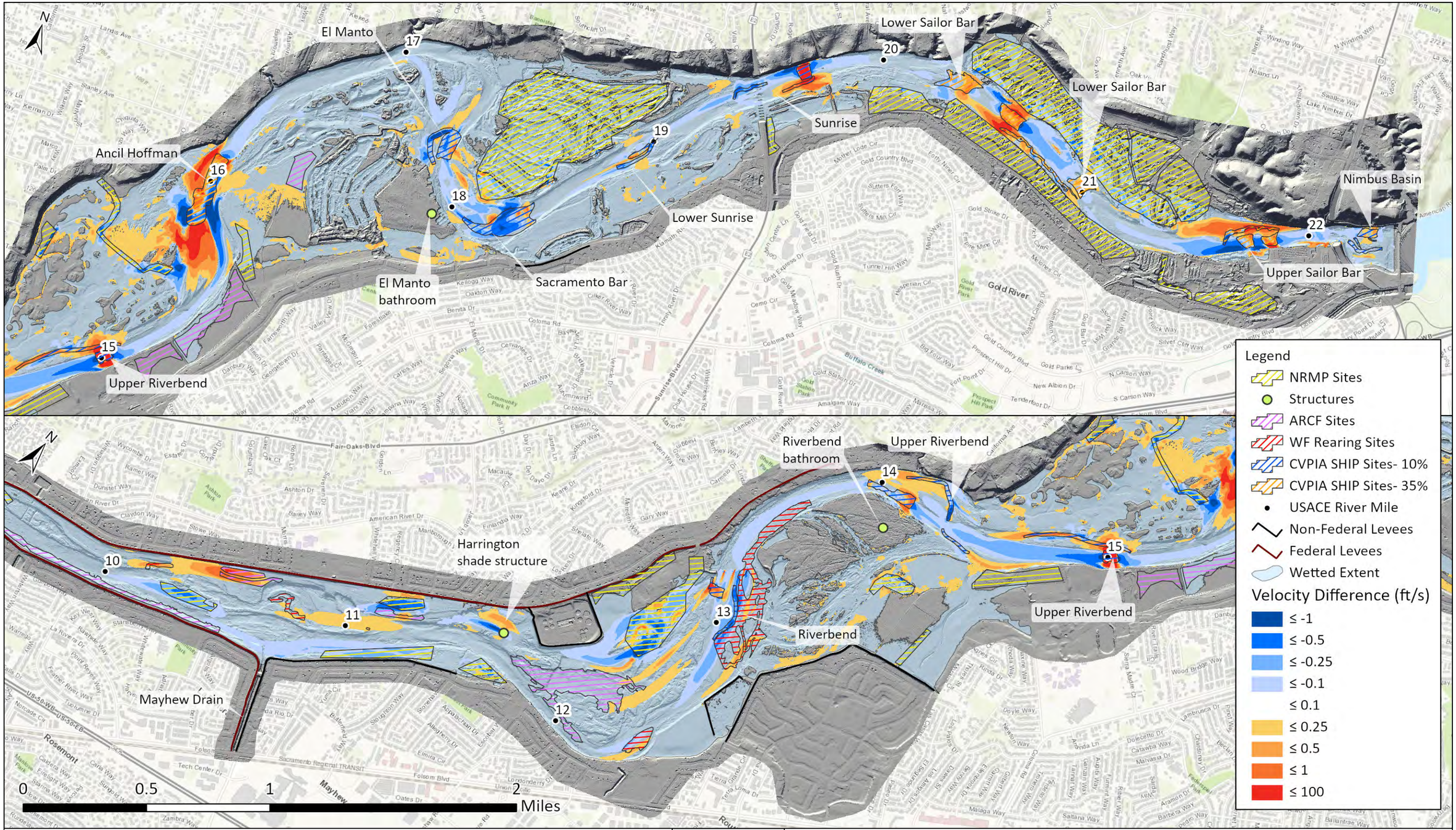


Notes: 160,000 cfs Velocity differences between NRMP2 and Scenario 12: NRMP2 minus S12

Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP2 minus Scenario 12 – Velocity (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 41**



Notes: 160,000 cfs Velocity differences between NRMP2 and Scenario 12: NRMP2 minus S12

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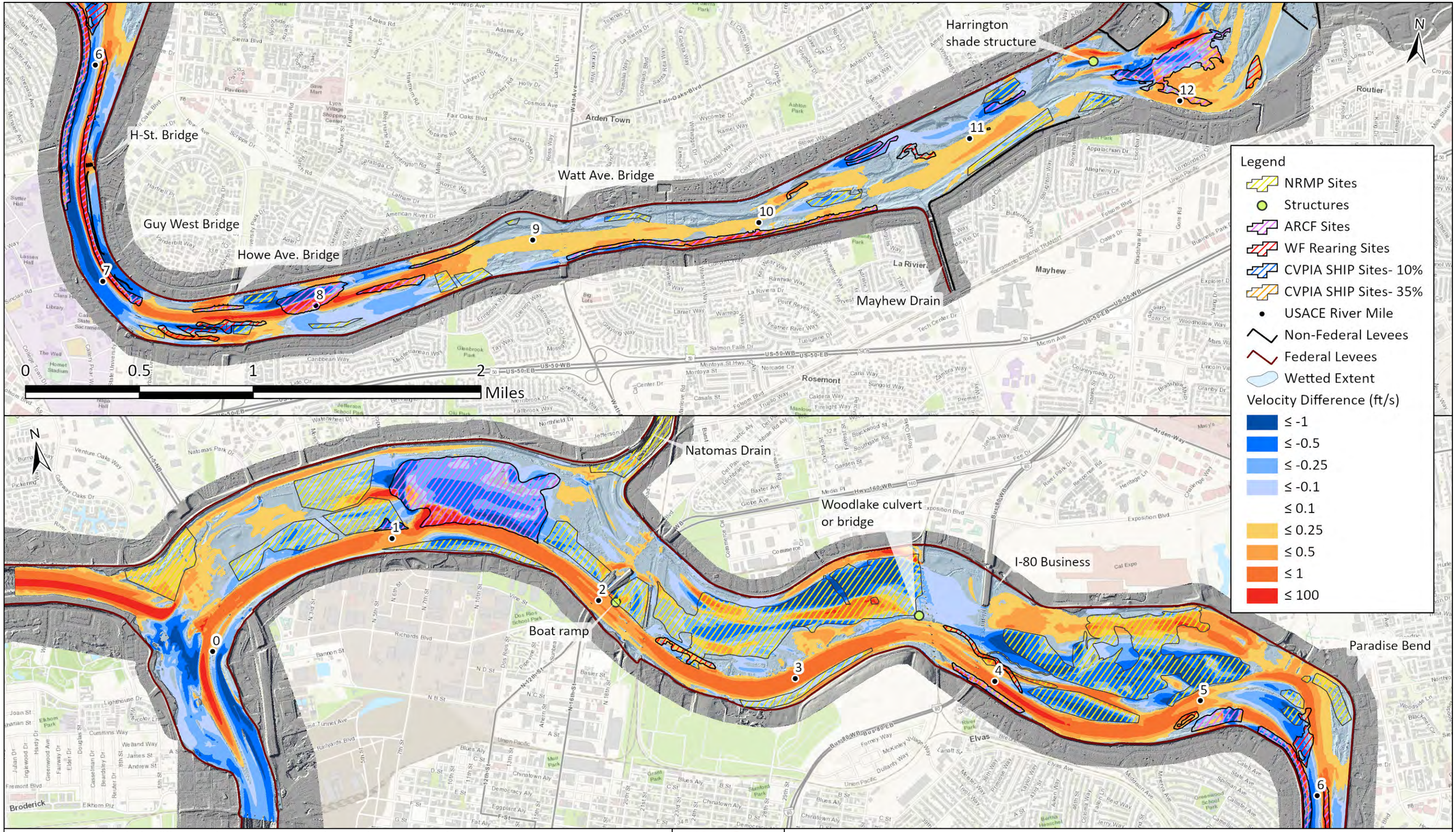
Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP2 minus Scenario 12 – Velocity (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 42**

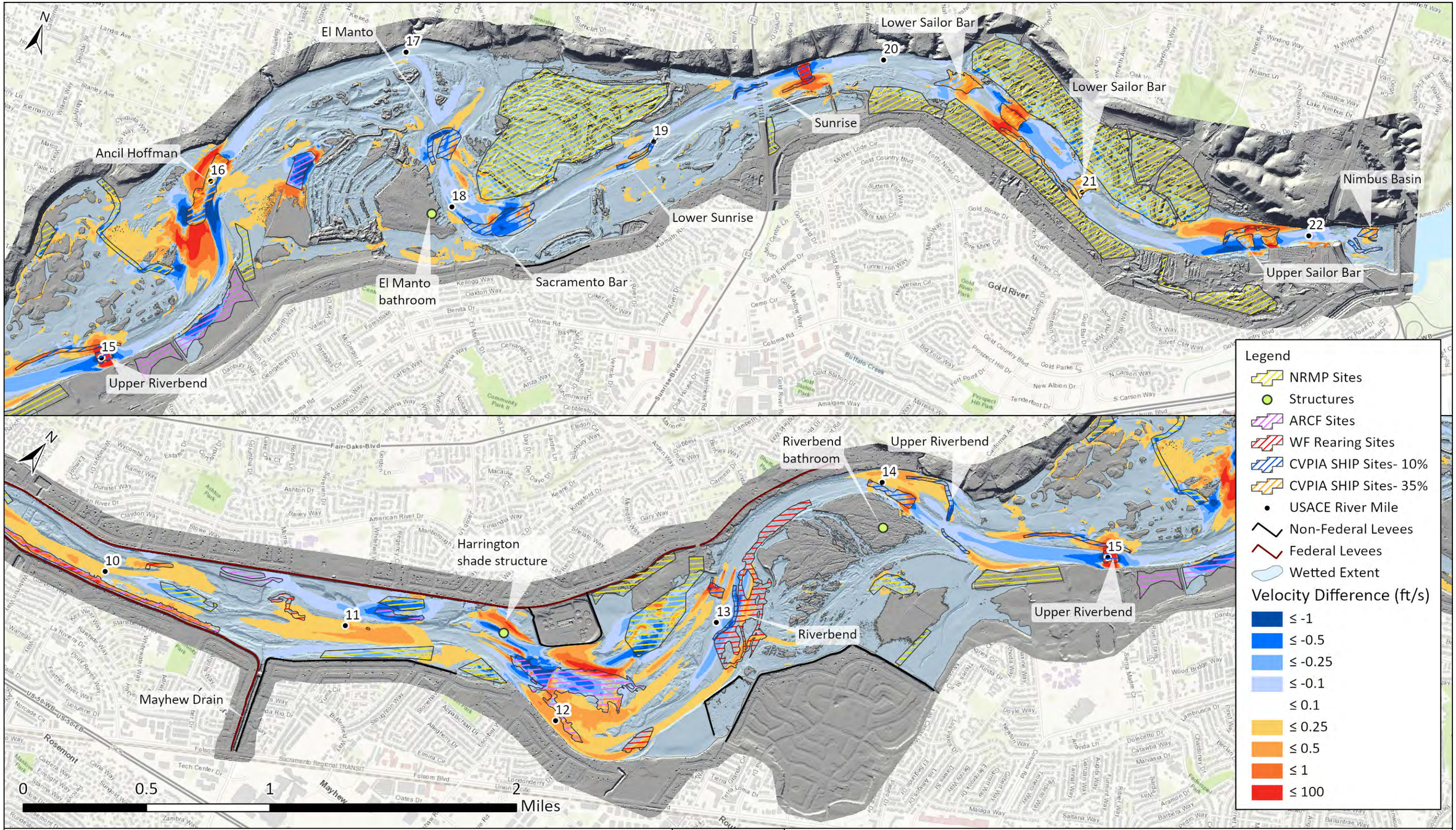


Notes: 160,000 cfs Velocity differences between NRMP2 and Scenario 1: NRMP2 minus S1

Natural Resource Management Plan Modeling Support Project

Lower Domain NRMP2 minus Scenario 1 – Velocity (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 43**



Notes: 160,000 cfs Velocity differences between NRMP2 and Scenario 1: NRMP2 minus S1

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Natural Resource Management Plan Modeling Support Project

Upper Domain NRMP2 minus Scenario 1 – Velocity (160 kcfs)

Project No. 21−1023	Created By: MNC	**Figure 44**

H-St. Bridge

Guy West Bridge

Howe Ave. Bridge

Watt Ave. Bridge

Mayhew Drain

Natomas Drain

I-80 Business

Paradise Bend

0 0.5 1 2 Miles

N

Legend

- North Levee / High Ground
- 160 kcfs WSE Points
- South Levee / High Ground
- Valley Centerline
- Valley Distance Upstream
- USACE River Mile
- 160 kcfs Wetted Extent

Notes: Levee / High Ground elevations were extracted from the orange and black points, and WSE values were extracted from the blue points. A search function was used to determine the WSE most closely associated with each levee point and calculate freeboard.

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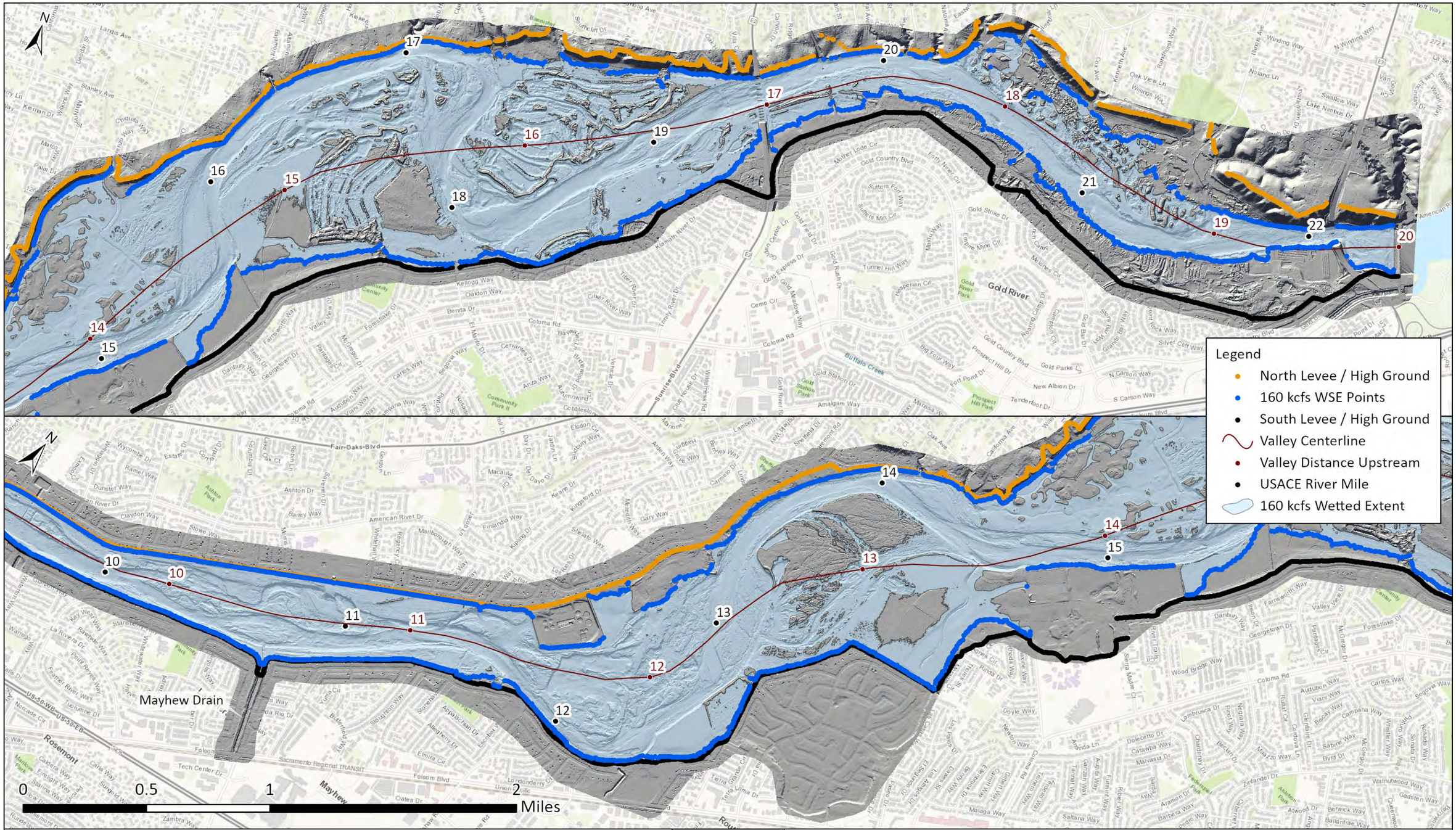
Natural Resource Management Plan Modeling Support Project

Lower Domain Levee / High Ground and WSE Points

Project No. 21−1023 | Created By: MNC | **Figure 45**



Notes: Levee / High Ground elevations were extracted from the orange and black points, and WSE values were extracted from the blue points. A search function was used to determine the WSE most closely associated with each levee point and calculate freeboard.

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Natural Resource Management Plan Modeling Support Project

Upper Domain Levee / High Ground and WSE Points

Project No. 21−1023	Created By: MNC	**Figure 46**

River Mile

0 2 4 6 8 10 12 14

Elevation (ft, NAVD88)

85 80 75 70 65 60 55 50 45 40 35

North Levee / High Ground
South Levee / High Ground
NRMP2 160 kcfs WSE North Wetted Extent
S1 160 kcfs WSE North Wetted Extent
NRMP2 160 kcfs WSE South Wetted Extent
S1 160 kcfs WSE South Wetted Extent

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Valley Distance Upstream (miles)

Notes: Longitudinal profile of levee / high ground elevations and 160,000 cfs WSEs

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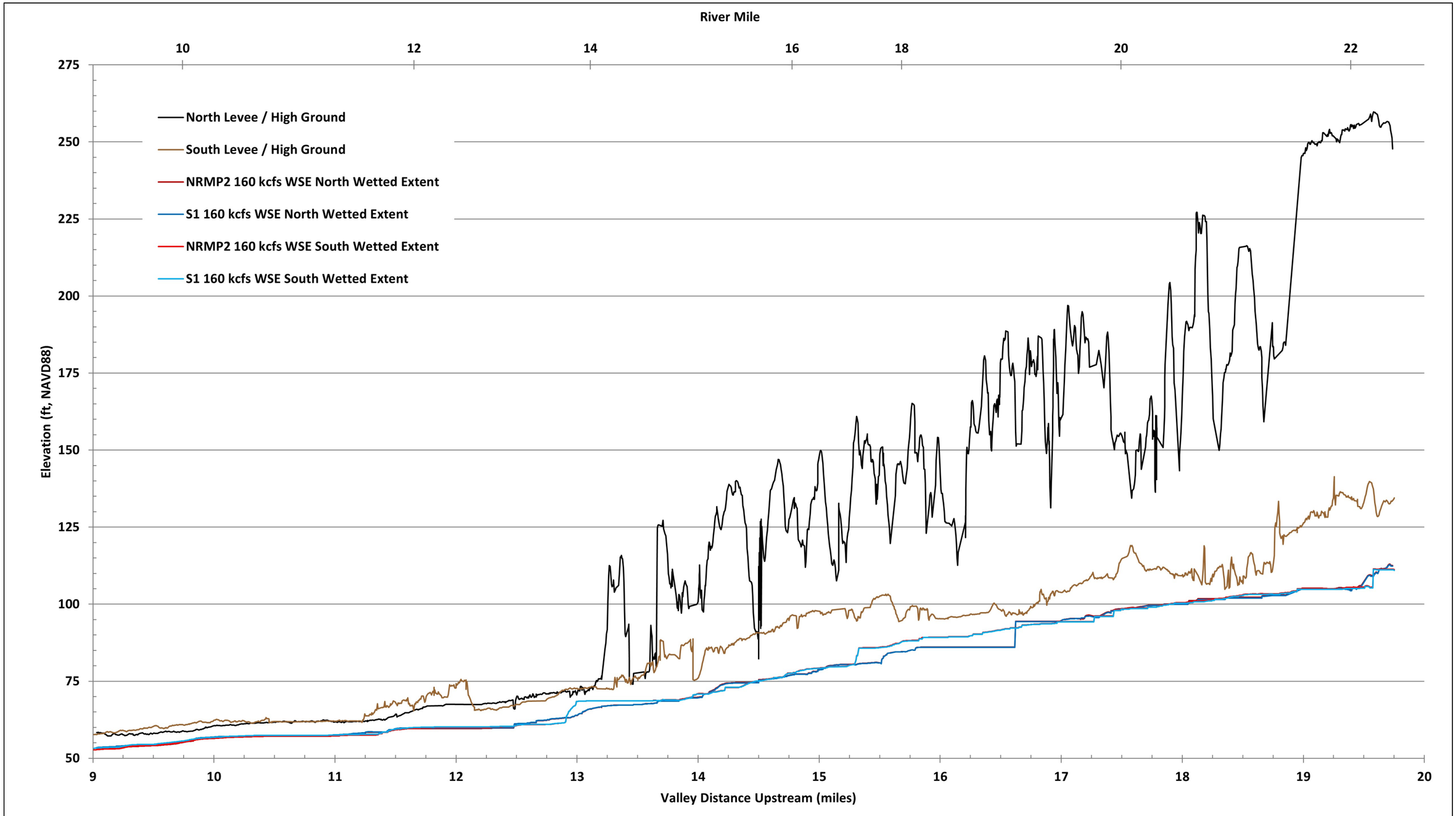
Natural Resource Management Plan Modeling Support Project
Lower Domain Longitudinal Profile

Project No. 21−1023	Created By: MDW	**Figure 47**



Notes: Longitudinal profile of levee / high ground elevations and 160,000 cfs WSEs

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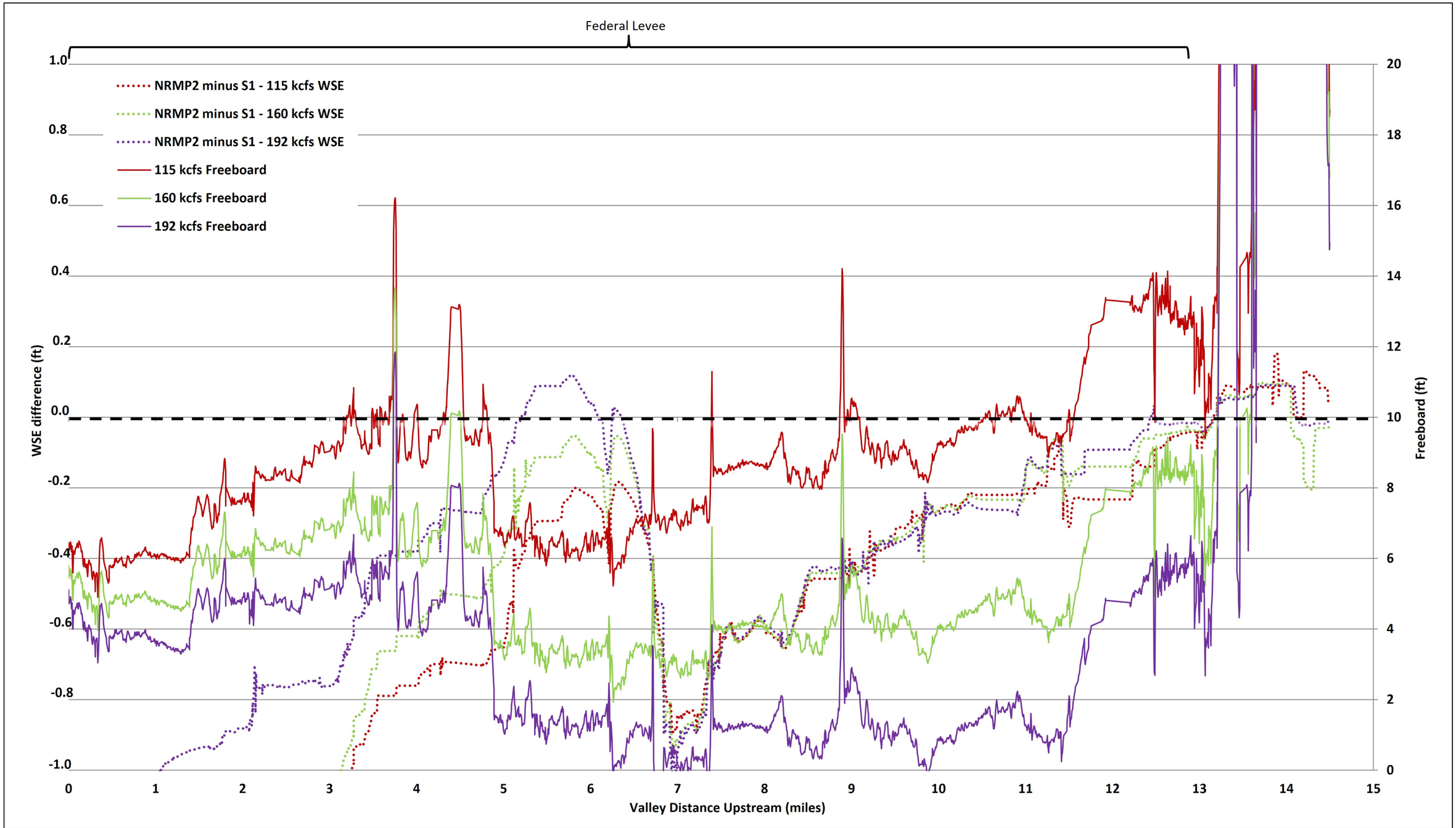
Natural Resource Management Plan Modeling Support Project
Upper Domain Longitudinal Profile

Project No. 21−1023 | Created By: MDW | **Figure 48**



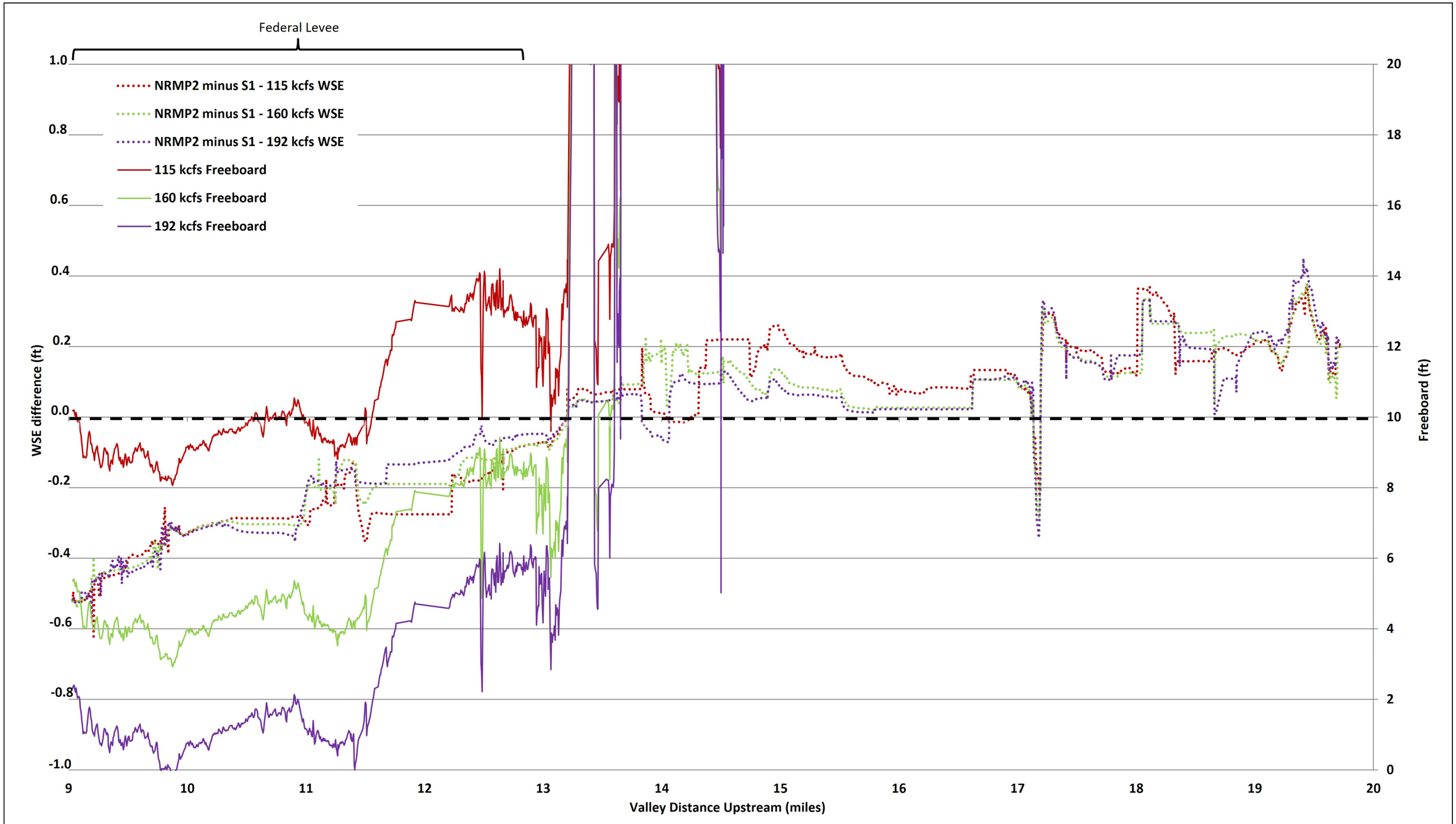
Notes: WSE differences and levee / high ground freeboard values along the north bank (i.e., right bank)

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Lower Domain North Bank Longitudinal Profile

Project No. 21−1023	Created By: MDW	**Figure 49**



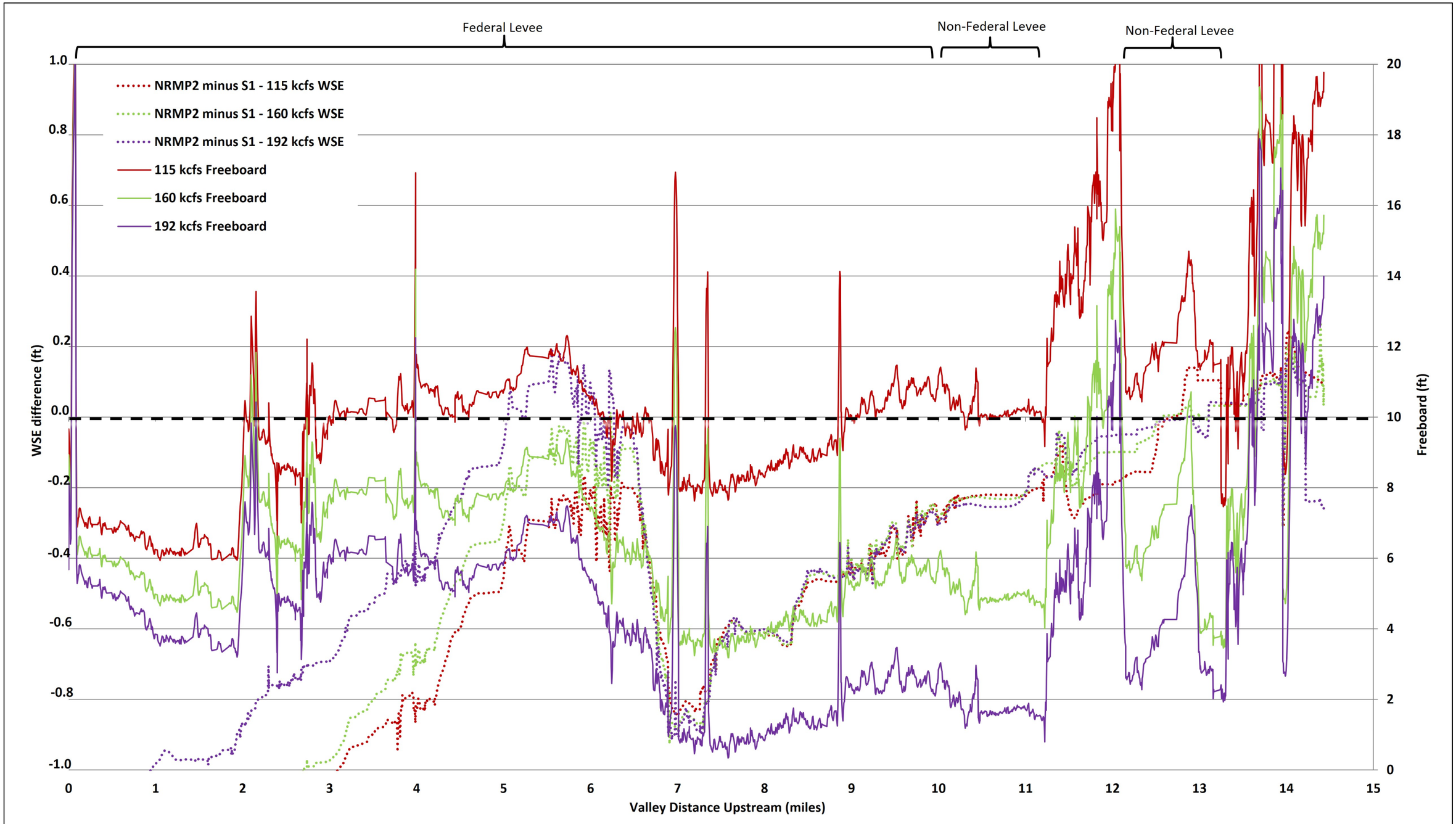
Notes: WSE differences and levee / high ground freeboard values along the north bank (i.e., right bank)

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Upper Domain North Bank Longitudinal Profile

Project No. 21−1023	Created By: MDW	**Figure 50**



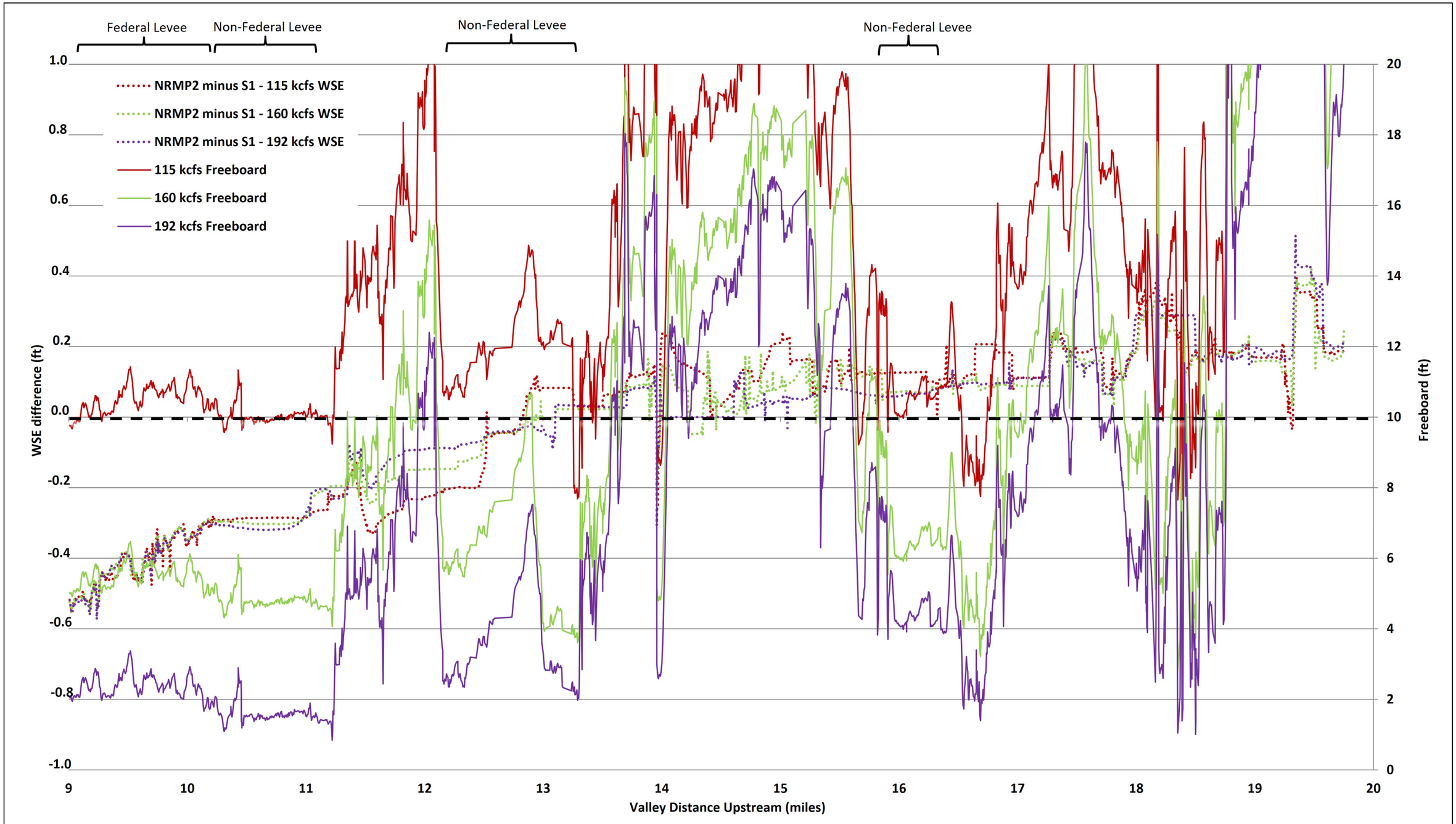
Notes: WSE differences and levee / high ground freeboard values along the south bank (i.e., left bank)

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

Lower Domain South Bank Longitudinal Profile

Project No. 21−1023	Created By: MDW	**Figure 51**



Notes: WSE differences and levee / high ground freeboard values along the south bank (i.e., left bank)

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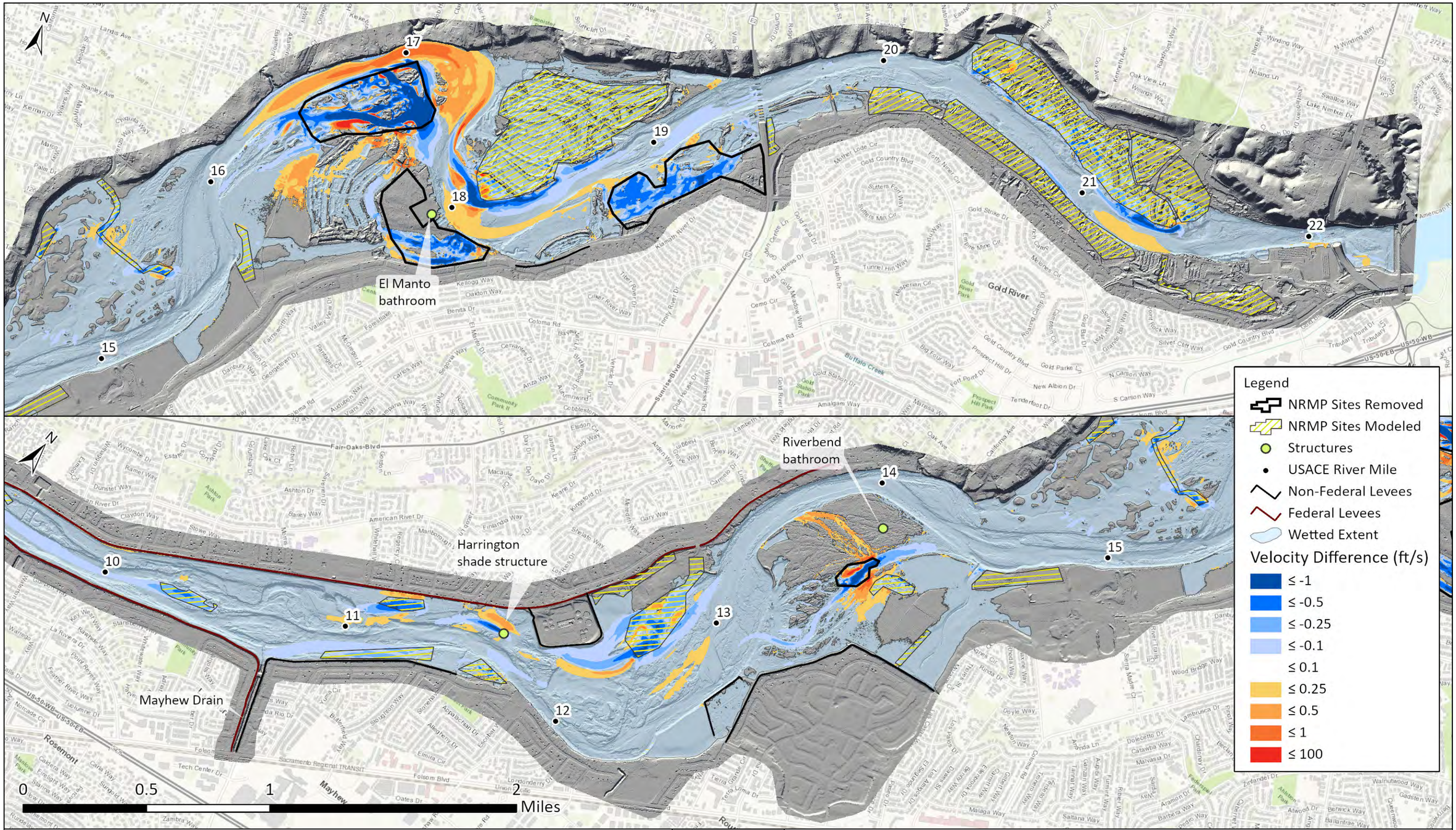
Natural Resource Management Plan Modeling Support Project

Upper Domain South Bank Longitudinal Profile

Project No. 21−1023	Created By: MDW	**Figure 52**



Notes: 160,000 cfs Velocity differences − showing 4 NRMP sites that were removed (shown with bold black outlines) due to impacts

cbec eco engineering

Natural Resource Management Plan Modeling Support Project

NRMP sites removed − 160 kcfs Velocity Differences

Project No. 21−1023	Created By: MNC	**Figure 53**

Appendix HY-2_NRMP Hydraulic Analysis Inputs

Appendix HY-2: NRMP Potential Resource Management Actions Incorporated into the Hydraulic Modeling by Area Plan

Area Plan	NRMP Potential Resource Management Actions	Included in Model	Details
Discovery Park			
	1. Rehabilitate homeless encampments	Yes	Included in the form of additional vegetation
	2. Establish low-growing native vegetation under power lines	No	Low growing vegetation exists, it would be converted to native vegetation
	3. Purchase and naturalize Urrutia property	Yes	Included as part of the Urrutia property redesign
	4. Establish native riparian species / remove non-natives	Yes	Included in the form of additional vegetation
	5. Expand wildlife connectivity opportunities	Yes	Included in the form of additional vegetation
	6. Address and minimize impacts associated with proposed bridge crossing	No	There is not enough information about the proposed bridge project to model, including potential impacts to vegetation
	7. Purchase and naturalize Riverdale mobile home park	Yes	Included in the form of additional vegetation
	8. Improve habitat and public access at Camp Pollock	Yes	Included in the form of additional vegetation
	9. Remediate social trail impacts to promote native vegetation growth	Yes	Included in multiple locations in the form of additional vegetation
	10.Remove urban rubble/redesign bank	Yes	Included as a part of the Urrutia property redesign
	11.Maintain tall tree overstory in parking and picnic area for nesting birds	No	Tall tree overstory is an existing condition, and therefore nothing to model
	12.Increase tall tree overstory in burned areas	Yes	Areas of fire rehabilitation included in the form of additional vegetation
Woodlake			
	1. Lower floodplain	Yes	Included as an element of the ecosystem restoration footprint, change in topography
	2. Implement USACE ecosystem restoration project	Yes	Ecosystem restoration elements included, primarily in the form of modified vegetation

Area Plan	NRMP Potential Resource Management Actions	Included in Model	Details
	3. Establish low-growing native vegetation under power lines	Yes	Included in the ecosystem restoration elements, modified vegetation
	4. Rehabilitate homeless encampment impacts	Yes	Included in the form of additional vegetation
	5. Expand riparian corridor	Yes	Included in the form of additional vegetation
	6. Expand wildlife connectivity opportunities	Yes	Included in the form of additional vegetation
	7. Suppress fire in mature vegetation stands	No	Suppressing fire would maintain the existing condition, and therefore nothing to model
	8. Remediate social trail impacts to promote native vegetation growth	Yes	Included in the form of additional vegetation
	9. Maintain flow through drainage slough	No	This is an action that would maintain the existing condition, therefore nothing to model
Cal Expo			
	1. Lower floodplain	Yes	Included as an element of the ecosystem restoration footprint, change in topography
	2. Establish low-growing native vegetation under power lines	Yes	Included in the ecosystem restoration elements, modified vegetation
	3. Rehabilitate homeless encampment impacts	Yes	Included in the form of additional vegetation
	4. Implement USACE ecosystem restoration project	Yes	Ecosystem restoration elements included, primarily in the form of modified vegetation
	5. Remediate social trail impacts to promote native vegetation growth	Yes	Included in the form of additional vegetation
	6. Manage invasive vegetation	Yes	Included in the ecosystem restoration elements, modified vegetation
	7. Improve wildlife connectivity opportunities	Yes	Included in the ecosystem restoration elements, modified vegetation
	8. Suppress fires and design fuel breaks in mature vegetation	No	Suppressing fire would maintain the existing condition, and the location and extent of fire breaks are not yet known and therefore not modeled
	9. Continue CSUS research and habitat development	Yes	The ecosystem restoration elements are considered representative of the CSUS habitat development

Area Plan	NRMP Potential Resource Management Actions	Included in Model	Details
	10. Increase tall tree overstory in burned areas	Yes	Areas of fire rehabilitation included in the form of additional vegetation in areas previously burned
Paradise Beach			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Rehabilitate homeless encampment impacts	Yes	Included in the form of additional vegetation
	3. Remediate social trail impacts to promote native vegetation growth	Yes	Included in the form of additional vegetation
	4. Suppress fires in mature vegetation	No	Suppressing fire would maintain the existing condition, and therefore nothing to model
	5. Manage invasive vegetation	No	Not specifically modeled
Campus Commons			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Rehabilitate homeless encampment impacts	Yes	Included in the form of additional vegetation
	3. Establish low-growing native vegetation under power lines	Yes	Included in the form of modified vegetation
	4. Improve floodplain connectivity to reduce fish stranding	Yes	Included in the form of a topography change
	5. Manage invasive vegetation	No	Not specifically modeled
	6. Suppress fires in mature vegetation stands	No	Suppressing fire would maintain the existing condition, and therefore nothing to model
	7. Remediate social trail impacts to promote native vegetation growth	Yes	Included in the form of additional vegetation
Howe Avenue			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal

Area Plan	NRMP Potential Resource Management Actions	Included in Model	Details
	2. Rehabilitate homeless encampment impacts	Yes	Included in the form of additional vegetation
	3. Establish low-growing native vegetation under power lines	Yes	Included in the form of modified vegetation
	4. Suppress fires in mature vegetation stands	No	Suppressing fire would maintain the existing condition, and therefore nothing to model
	5. Remediate social trail impacts to promote native vegetation growth	Yes	Included in multiple locations in the form of additional vegetation
	6. Manage invasive vegetation	No	Not specifically modeled
Watt Avenue			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Rehabilitate homeless encampment impacts	Yes	Included in the form of additional vegetation
	3. Establish low-growing native vegetation under power lines	Yes	Included in the form of modified vegetation
	4. Manage invasive vegetation	No	Not specifically modeled
	5. Suppress fires in mature vegetation stands	No	Suppressing fire would maintain the existing condition, and therefore nothing to model
	6. Remediate social trail impacts to promote native vegetation growth	Yes	Included in multiple locations in the form of additional vegetation
SARA Park			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Rehabilitate homeless encampment impacts	Yes	Included in the form of additional vegetation
	3. Manage invasive vegetation	No	Not specifically modeled
	4. Establish valley oak riparian woodland	Yes	Included in the form of additional vegetation
	5. Maintain flow through drainage slough	No	Maintaining flow would maintain the existing condition, and therefore nothing to model

Area Plan	NRMP Potential Resource Management Actions	Included in Model	Details
	6. Suppress fire in mature vegetation stands	No	Suppressing fire would maintain the existing condition, and therefore nothing to model
	7. Remediate social trail impacts to promote native vegetation growth	Yes	Included in multiple locations in the form of additional vegetation
Arden Bar			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Maintain spawning riffle	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	3. Manage invasive vegetation	No	Not specifically modeled
	4. Develop naturalization plan for Arden Pond	Yes	USACE proposal included
	5. Improve native riparian and oak woodland communities	Yes	Included in the form of additional vegetation
	6. Remediate social trail impacts to promote native vegetation growth	Yes	Included in the form of additional vegetation
River Bend			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Improve spawning riffle	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	3. Manage invasive vegetation	No	Not specifically modeled
	4. Develop conceptual naturalization plan	Yes	Included in the form of modified topography and additional vegetation
	5. Remediate social trail impacts to promote native vegetation growth	Yes	Included in the form of additional vegetation
Sarah Court			
	1. Improve degraded riparian habitats	No	Not specifically modeled

Area Plan	NRMP Potential Resource Management Actions	Included in Model	Details
Ancil Hoffman			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Improve spawning riffle	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	3. Enhance native woodlands and grasslands	Yes	Included in the form of additional vegetation
	4. Improve habitat values on Carmichael Creek	Yes	Included in the form of additional vegetation
	5. Support interpretive uses at Effie Yeaw Nature Center	No	Not specifically modeled as the changes are either unlikely to affect hydraulics and/or not currently defined.
	6. Manage invasive vegetation	No	Not specifically modeled
	7. Remediate social trail impacts to promote native vegetation growth	No	Not specifically modeled
	8. Improve degraded riparian habitats	Yes	Included in the form of a Water Forum rearing habitat proposal
Rossmoor Bar			
	1. Improve spawning riffle	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	2. Protect recently planted vegetation	No	Protecting vegetation would maintain the existing condition
	3. Manage invasive vegetation	No	Not specifically modeled
	4. Improve degraded riparian habitats	Yes	Included in the form of additional vegetation
	5. Enhance woodland savanna and/or grasslands	Yes	Included in the form of additional/modified vegetation (USACE mitigation proposal)
	6. Maintain historic mine tailings for interpretive purposes	No	Maintaining mine tailings would maintain the existing condition
	7. Re-contour and improve substrate to support woody vegetation	Yes	Included in the form of modified topography and additional vegetation

Area Plan	NRMP Potential Resource Management Actions	Included in Model	Details
	8. Improve fallow agricultural areas with woodland savanna or grassland	Yes	Included in the form of additional/modified vegetation (USACE mitigation proposal)
	9. Remediate social trail impacts to promote native vegetation growth	Yes	Included in the form of additional vegetation
San Juan Bluffs			
	1. Manage invasive vegetation	No	Not specifically modeled
	2. Monitor bluff erosion	No	Monitoring would not change the existing condition
Sacramento Bar			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Improve spawning riffle	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	3. Maintain spawning riffle	Yes	Maintaining a spawning riffle would maintain the existing condition and therefore is not modeled
	4. Maintain lowered floodplain	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	5. Remediate social trail impacts and promote native vegetation growth	Yes	Included in the form of additional vegetation
	6. Improve degraded riparian habitats	Yes	Included in the form of additional vegetation
	7. Manage invasive vegetation	No	Not specifically modeled
	8. Develop conceptual naturalization plan for open mining pits/ponds	Yes	Included in the form of modified topography and additional vegetation
Lower Sunrise			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal

Area Plan	NRMP Potential Resource Management Actions	Included in Model	Details
	2. Maintain spawning riffle	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	3. Maintain lowered floodplain	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	4. Manage invasive vegetation	No	Not specifically modeled
	5. Enhance woodland savanna and/or grasslands	Yes	Included in the form of additional vegetation
Sunrise Bluffs			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Improve spawning riffle	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	3. Manage invasive vegetation	No	Not specifically modeled
	4. Improve degraded riparian habitat	No	Not specifically modeled
	5. Monitor bluff erosion	No	Monitoring would not change the existing condition
Upper Sunrise			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Improve spawning riffle	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	3. Maintain spawning riffle	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	4. Maintain lowered floodplain	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	5. Manage invasive vegetation	No	Not specifically modeled
	6. Remediate social trail impacts and promote native vegetation growth	Yes	Included in the form of additional vegetation
	7. Develop conceptual naturalization plan for areas altered by mining		Included in the form of modified topography and increased vegetation

Area Plan	NRMP Potential Resource Management Actions	Included in Model	Details
Sailor Bar			
	1. Lower floodplain	Yes	Included in the form of a Water Forum rearing habitat proposal
	2. Maintain spawning riffle	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	3. Maintain lowered floodplain	Yes	Included in the form of a Water Forum/USBR gravel augmentation project
	4. Manage invasive vegetation	No	Not specifically modeled
	5. Maintain water levels at Sailor Bar-Pond for wildlife habitat	No	Maintaining water levels would not change the existing condition
	6. Improve degraded riparian habitats	Yes	Included in the form of increased vegetation
	7. Expand oak habitats in conservation and naturalization areas	Yes	Included in the form of increased vegetation
	8. Re-contour mined areas to support oak habitats	Yes	Included in the form of modified topography and increased vegetation
	9. Lower elevation of relict pools / remove gunite	No	Not specifically modeled
	10. Remediate social trail impacts and promote native vegetation growth	Yes	Included in the form of additional vegetation

Appendix RTC-1_RTC Comment Letters

Date: 2 November 2022

To: Sacramento County Plannin and Park Departments

From: Daniel Airola, Conservation Chair, Central Valley Bird Club

Subject: Comments on the American River Parkway Natural Resources Management Plan and EIR

I offer these comments on behalf of the Central Valley Bird Club, a 600+ member group of birders, ornithologists, resource managers, and conservationists. Many of our members regularly use the American River Parkway and contribute data on bird and other wildlife use through eBird, Christmas Bird Counts, and other data collection efforts.

As recognized in the Natural Resources Management Plan, the American River Parkway is an extremely valuable habitat area for fish and wildlife. It also is continuously threatened by a wide variety of other sources including adjacent urbanization, excessive off-trail human use, homeless camps, fires, pesticide and waste contamination, disruption of natural river processes, flood control and associated mitigation projects, large scale commercial uses (e. g., concerts), non-native species invasion, and inadequate funding for proper resource management and enforcement. Therefore, this plan is critically important in identifying resource values and policies and priorities for resource protection, management, and enhancement.

We offer the following comments to help guide development of the final plan and EIR. Our comments are not comprehensive, as we had inadequate time to fully involve our members in identifying priority concerns and opportunities in various units of the Parkway. Therefore, consider our site-specific comments as examples of concerns that may be more widely applied to similar situations throughout the Parkway.

COMMENTS ON THE DRAFT NATURAL RESOURCE MANAGEMENT PLAN

Specific comments are provided by section below.

4.1.9. Open Water Habitat. The importance of calm side-channel and pond habitat to diving ducks and other waterbirds should be highlighted in this section. Recent studies have shown that many of the species that forage within riverine habitats roost at night in clam-water areas, such as Arden Pond, presumably to conserve energy and avoid predation (Airola 2022). More work is needed to understand the importance of these areas and the characteristics that determine their use and value to waterbirds. Preliminary evaluation suggest that larger calm-water areas are important because they provide more security from terrestrial and avian predators. Deeper water areas also appear to be preferred. Management should recognize these values and how conditions may change as future bank protection and other projects are evaluated.

4.1.13. Turf Areas. Turf areas are important to accommodate areas with high human use, but also require high water use for irrigation. Although overall diversity of wildlife species is low in these areas, especially where they are planted with London Planes and other non-native trees, they support a suite of species that is adapted to these conditions, including American Robins, Northern Flickers, and

California Scrub-Jays. Of highest importance is Yellow-billed Magpie use of these areas near (within 0.3 mi) of the American River (Airola et al. 2021), which should be recognized as particularly important to the remnant population that has survived West Nile virus. Turf areas away from the river, especially where human use is low (e.g., at Ancil Hoffman Park) should be considered for restoration to native woodland habitat.

4.2.1. Critical Habitat. Much of the habitat designated as critical for the valley elderberry longhorn beetle (such as at River Bend Park) is overgrown with non-native weeds, which poses a fire risk that threatens the planted elderberries. Management of herbaceous vegetation is needed through mowing or grazing to reduce fire risk to these areas and adjacent habitat areas.

4.3.2. Wildlife Linkages. The rationale for selecting the species included in the wildlife corridor analysis is not clearly stated. The Mountain Quail and Pygmy Owl are not resident in the parkway (Pandolfino et al. 2021) and never have been to my knowledge. The California Thrasher is only seen irregularly along the Parkway in recent years. In Table 4.1, the scientific name for western gray squirrel is wrong.

4.4. Special-Status Species. The Cooper's Hawk, Great Egret, and Great Blue Heron are not designated as state Species of Special Concern. To my knowledge and based on eBird, The Least Bell's Vireo has never been recorded in the American River Parkway and still does not regularly occur anywhere in the Central Valley. Other designated species that occur regularly or infrequently that are not included in the plan are Purple Martin, Tricolored Blackbird, and Yellow-breasted Chat.

4.5.1. Invasive Species – Plants. We support efforts to control and eliminate highly invasive plants that disrupt ecosystem functions. The simple fact that a species is not native is insufficient as a basis for removal. Some of the Phase 3 priority species are low priority for control or eradication. While Himalayan blackberry can become dominant under some situations, it is difficult to remove and is used by many wildlife species for food and cover, and so may be best viewed as a "naturalized" part of the plant community, as are non-native Mediterranean grasses. It also discourages formation of "social trails" and under appropriate open conditions is the primary nesting habitat of the Tricolored Blackbird in surrounding areas (Airola 2021). The Chinese pistache and black locust does not appear to be highly invasive in the Parkway and receives high use by migratory birds. Thus, careful evaluation of resource values should occur before removal is contemplated.

4.5.2. Invasive Species – Wildlife.

Mute Swans. The species is spreading into the Parkway. A pair was at the pond at William B Pond Recreation area in September 2022, but they have not yet bred there. Control is warranted before the public "adopts" them.

Brown-headed Cowbird. The impacts of cowbirds is somewhat overstated. Cowbird populations on the parkway are relatively low and most native species have been able to sustain some level of parasitism. Although the cowbird is a potential threat to certain species that are most sensitive to parasitism (vireos, Yellow Warbler) these species have been mostly eliminated from the Central Valley and thus are not likely to be affected on the parkway.

Activities that may increase cowbird numbers (concentrated livestock feeding) should be monitored, but not necessarily avoided, because of the habitat benefits associated with grazing for creating low herbaceous habitat, controlling invasive species, and reducing fire extent and intensity.

European Starling. It's odd that this species is not included, as it is abundant and has affected certain special-status species, including the Purple Martin, through nest site competition. The species also prefers lawns and other low herbaceous habitat, so the benefits of providing this habitat condition for other native species (Burrowing Owl, Magpie) must be balanced against the impact of increased starling competition.

4.6. Wildland Fire

A key point is that the lack of natural flooding, as a result of flow moderation by Folsom Dam, has prevented establishment of conditions that promote cottonwood regeneration (a migrating channel that exposes mud during the seed dispersal period). Therefore, increased fire frequency and intensity (due to ignitions from homeless camps, high fuel loadings from non-native species, and increased temperature) is disproportionately removing fire-sensitive cottonwoods from the American River Parkway ecosystem. Measures to control ignitions, manage fuels, and promote cottonwood regeneration are needed.

Chapter 8. AREA MANAGEMENT

Discovery Park

There is no mention of the large concert events in this section of the plan. The limits in terms of the numbers, size, and timing of events should be specified. Commitment to monitoring of the effects of these events on biological resources is needed. The process for permitting improvements to support concerts should be specified, so that surprise situations are not repeated such as the extensive installation of turf during summer 2022 without public notice or involvement.

The existing shrubby habitat maintained beneath power lines is rare within the parkway and serves a certain set of wildlife species. This habitat should be retained or modified in a way that maintains these values.

The Urrutia Property should be acquired and restored to enhance biological resources. The limited available data show this area to be an important use area for waterfowl. An adequate pond area should be retained to provide nighttime roosting areas for wintering diving ducks that feed on the river during the day and for other waterbirds (see Airola 2022). A mixture of deep and shallow pond areas with emergent vegetation should be created.

Although the current London plane trees are important to the nesting Yellow-billed Magpie population (Airola et al. 2021), some of the trees are unhealthy and may be gradually dying out. Given that magpies do not have preferences for particular tree species, but rather just use tall trees, the London planes onsite should be replaced very gradually (over 10-20 years) with other native species, especially valley oaks, that will grow quickly, replace magpie values, and serve other wildlife species (Greco and Airola 2009)

Paradise Beach

This area is very valuable as wildlife habitat, including the vegetated protected levees at the downstream end, which should serve as a model for current and future levee improvement.

The inlet area here is one of the few calm water areas where diving ducks and other waterbirds could rest, except that the frequent and illegal use of the area by off-leash dogs inhibits its use by waterbirds except at night.

Unfortunately, a long-term culture of off-leash dog use has been tolerated here, resulting in widespread disturbance of wildlife and other park users. Enforcement to change this behavior is needed but is recognized as difficult. The primary lesson is to prevent such a culture of illegal use to be normalized elsewhere in the Parkway.

Howe

Lowering the floodplain in this section of the Parkway is not desirable due to the amount of disturbance to existing high quality habitat that would result. The side channel on the south side of the river is extremely valuable wildlife habitat in its current form and should not be modified.

A Double-crested Cormorant night roost area, in black locust trees that overhang the water on the north bank of the river about 0.1 mi upstream of the powerline, is used nightly by 50-75 birds during fall and winter. These trees should be protected.

Maintaining the island in this area, to protect an area with low human disturbance, is important.

The Yellow-billed Magpie population in this area depends on the mowed levee slope as foraging habitat. This management should continue.

A substantial number of valley oaks have been established between the levee and bike trail on the northeast side of the river. These oaks should be protected.

Revegetating lands under the powerline here is not a high priority from a biological resource perspective.

Watt

The island in this reach should be preserved and its isolation should be further enhanced to provide an area protected from human disturbance.

Islands and slow-moving side-channel habitat should be protected in this reach as extremely valuable habitat for waterbirds.

The in-channel gravel bar in this reach is an important roosting area for gulls, and should be protected.

Sara Park

Slow side channel habitat here is an important resting habitat for waterbirds.

Islands provide refuge areas from human disturbance and should be protected.

Black locusts at Gristmill and adjacent areas are used extensively by migratory birds and should be retained or replaced only gradually.

Arden Bar

Arden Pond is an important waterbird habitat, especially for night-roosting by diving ducks that feed during the daytime on the river.

The ill-conceived Corps mitigation project to convert a portion of Arden Pond to a spawning channel has been abandoned. It should be removed as a permitted use from the plan.

The "naturalization plan" for Arden Pond should carefully consider and protect key existing habitat values, especially night-roosting use by diving ducks (Airola 2022). Maintenance of a large water body is key to this use. Islands should be maintained or enhanced to better exclude human disturbance. Decisions on removal of non-native aquatic plants should be based on their impacts to ecosystem function, not just on the fact that they are non-native.

The reported past plan to develop Arden pond as a bass fishing area should not be approved.

Canada Geese, and perhaps in the future Mute Swans, may need to be controlled or reduced in the future to protect other wildlife species and human use of developed park areas. Such control is considered desirable.

Many "social trails" have been developed in this area in recent years, especially near the rapids area. A well-planned trail system should be developed that closes trails that are causing resource damage.

Turf areas within William Pond Recreation Area should be retained as important habitat for the local nesting colony of Yellow-billed Magpies (Airola et al. 2021).

The few eucalyptus trees in the area are used by migrant birds and are not spreading. They should be retained.

The heron and egret rookery and associated island should be protected during future bank protection and floodplain lowering.

River Bend Park

This area provides one of the few opportunities to create grassland habitat to support Burrowing Owls, Yellow-billed Magpies, and other species that favor low herbaceous vegetation. Grazing or mowing should be applied to most existing star-thistle choked areas (including the VELB mitigation areas and the area between Hagan Community Park and the American River) meet typical 500-750 lbs/ac residual dry matter.

Allow continued operation of the nest box program (Airola and Stine, in review) in the VELB mitigation area.

Ancil Hoffman County Park

The picnic area between the golf course and river is an important nesting area because of the presence of turf and proximity to the river (Airola et al. 2021). Large trees and turf should be retained in this area for public and magpie use.

Restoration of Carmichael Creek to carry regular flow would be beneficial to Magpies and may allow colonization of the large turf area west of the creek.

The large turf area north of the golf course receives very low public use, and requires a lot of water for irrigation and maintenance for mowing. If Carmichael Creek cannot be restored to have regular flow, it would remain an area of low use by magpies. Then, much of this area could be converted to water-wise low maintenance natural vegetation.

A flow discharge on the floodplain south or the driving range, which was a unique and very productive area for migratory and resident birds ("Morgan Jetty" on Google Earth), was destroyed when flows were interrupted in 2021. Restoration of this area, perhaps using runoff from golf course irrigation would be desirable.

Any floodplain-lowering in this area should carefully consider existing habitat values. The floodplain chapparal habitat in this area is unusual and its value should be carefully considered in planning restoration projects.

Rossmore Bar

The former agricultural fields on the west side of the unit are immediately across the river from the magpie colony that nests at Ancil Hoffman Park. Restoring at least a portion this area to grazed or mowed annual grassland, managed oak savanna, or managed hayfields could increase this population and serve other species dependent on low herbaceous habitat. Maintaining some taller grassland, through rotation or set-aside would further increase diversity.

The interpretive value of mining tailings is relatively unimportant. There are many other examples of tailings in the region, and preserving the results of a highly destructive land use practice is not a historical priority. Restoring higher value habitat conditions should be a priority in all mine tailings areas, where it is feasible to do so.

San Juan Bluffs

Ensure that adopted setbacks for adjacent residential areas are adhered to.

Do not expend parks resource funds or compromise resource values to protect ill-situated development from natural erosion processes.

Sacramento Bar

Restore mine tailings to native habitat.

Evaluate use of existing ponds as off-river night roosting habitat by waterbirds, and design restored habitat to retain this function.

Sunrise Bluffs

Ensure that adopted setbacks for adjacent residential areas are adhered to.

Do not expend parks resource funds or compromise resource values to protect ill-situated development from natural erosion processes.

Protect tributary creeks and draws from degradation from adjacent residential areas through enforcement of dumping prohibitions and setback requirements.

Upper Sunrise

This unit is a very important area for waterbirds due to the presence of abundant spawning salmon in most years. Protection of calm water areas in the Sailor Bar area is likely important by providing night resting areas for diving ducks and other species that feed on the river during the daytime.

Sailor Bar

Protection of calm water resting areas is likely very important to maintaining the large population of diving ducks attracted to this section of the river by the presence of spawning salmon.

COMMENTS ON THE ENVIRONMENTAL IMPACT REPORT FOR THE AMERICAN RIVER PARKWAY NATURAL RESOURCES MANAGEMENT PLAN

On behalf of the Central Valley Bird Club, on 11 January 2021 I submitted comments to guide the preparation of the revised American River Parkway (ARP) Plan. A number of these comments have not been addressed.

IMPACTS AND ANALYSIS

Birds. I see no evidence that the EIR "addresses…migratory birds in general" as claimed.

Nesting Raptors. March 1 date to trigger surveys for nesting raptors is too late for Bald Eagle, which is increasing in the Sacramento Region as a nesting species.

Bank Swallow – Impacts and mitigation measures are not specified. Bank Swallows are adapted to colonize areas of active bank erosion. The species has not been recorded nesting in Sacramento County within the last decade (Pandolfino et al. 2021). The plan will allow bank stabilization measures that target the exact habitat required by this species. The primary impact will be the continued removal of potential nesting habitat as it develops in the future. The plan should specifically identify areas where active bank erosion would not be treated (i.e., on islands and other bank interior areas that do not threaten levees).

Burrowing Owl – The species was abundant and widespread in and adjacent to the Parkway in the mid-1900s, when hay growing maintained grassland habitat in a suitable low-height condition. Recent parkway management allows grassland and other herbaceous habitat in most areas to grow without mowing or grazing, which makes these areas unsuitable for Burrowing Owls. Parks departments should reintroduce grazing or mowing (including haying) to maintain grasslands in a lower, more suitable condition for Burrowing Owls and many other species that prefer such conditions, including the Yellow-billed Magpie. Such management also would reduce fuels and thus potential damage to adjacent woodlands and riparian woodlands.

Purple Martin – Contrary to the EIR, Purple Martins in the Sacramento region do not nest in trees or cliffs. The remaining five colonies supporting only 22 pairs in 2022 nest in traditional elevated freeways and longer overpasses. This population has been extensively studied for over 30 years with results abundantly documented (Airola 2020). Several suitable nest sites are within the Parkway (Discovery Park, Arden Garden connector over Steelhead Creek), but have not been occupied. If these sites become occupied, the monitoring, planning, construction, and mitigation measures identified in detail by Airola (2020) should be applied.

The primary use of the ARP by the Purple Martins is a roosting area where martins congregate in the afternoons during the nesting season in the Campus Commons and Cal Expo areas (Kopp and Airola 2012, Airola 2020). The birds roost on transmission line towers and snags in this area (at least until the snags were cleared for bank protection without mitigation). Most proposed actions are considered unlikely to affect martin roosting use in this area.

Other Species Considerations. A variety of other wildlife species deserve considerations in management of the ARP.

Yellow-billed Magpie. The Yellow-billed Magpie in the Central Valley has declined by 85% since the arrival of West Nile virus in the early 2000s. Recent studies by me and others have shown that the remnant population of Yellow-billed Magpies in urban Sacramento parks are healthy, and thus important to the future recovery of the species (Airola et al. 2021). The largest nesting populations in the region are in ARP parks, including Discovery, Oak Meadows, William Pond, and Ancil Hoffman. Populations are concentrated in areas within 0.3 miles of flowing water that support >10 ac of low herbaceous habitat (irrigated turf or mowed annual grassland; Airola et al. 2021)). Therefore, habitat restoration activities within that convert low herbaceous habitat to woodland, riparian, aquatic habitat or development are likely to reduce the Yellow-billed Magpie population and should be avoided.

Grassland Species. Many species that occupy grassland habitats are rapidly declining nationally, regionally, and locally.

Mitigation Measures

BR-17**. Bank Swallow.** This mitigation is wasteful in that the overwhelming majority of banks within the Parkway are not steep enough and are too well vegetated to be suitable for the species. Surveys should identify whether any suitable habitat (vertical banks with exposed fine soils) is present. If so, then the sites should be surveyed during the nesting season. Given its rarity, if the species is found nesting, all available measures should be employed to protect nesting colonies.

BR-30. Burrowing Owl. Burrowing Owls are migratory. Therefore, if construction activities are anticipated in suitable habitat (which should be defined as larger areas of open grassland habitat that is mowed, grazed or otherwise kept at a height below 10 inches) during the nesting period, then surveys should be conducted during the nesting period. Conducting surveys outside of the nesting season will not adequately characterize whether the area will be occupied during the nesting season.

BR-31. Purple Martin. As amply documented (Airola 2020) the Purple Martin nesting season begins in late March, not May. Suitable habitat should be defined only as suitable bridge sites. There is no need to survey woodlands, which have not been occupied since before the 1980s. If any of the few

suitable bridge sites in the ARP become occupied, then the monitoring, planning, construction, and mitigation measures identified in detail by Airola (2020) should be applied.

***BR-16*. Tricolor (sic) Blackbird.** Correct the species name. Although recent records have detected no Tricolored Blackbird colonies on the ARP, the potential exists for one in the future. Based on my nine years of studies of the Tricolored Blackbird population in Sacramento and adjacent foothill counties (which has resulted in 11 published scientific studies, e.g. Airola 2014), 300-foot buffer around an active colony is inadequate.

The analysis also does not address the potential effects of loss of foraging habitat due to removal of herbaceous habitat.

The plan could substantially increase the potential to attract nesting Tricolored Blackbirds by managing grasslands to remain at low height through grazing, mowing, or haying.

Hundreds of Tricolored Blackbirds have recently been found to be roosting in the winter in emergent vegetation in mining swales at Mississippi Bar, just upstream of the plan area. This use warrants additional study and similar habitats in the plan area should be investigated for their use. Any roosting areas should be protected from disturbance.

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November 3, 2022

File Ref: SCH # 2021040230

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VIA ELECTRONIC MAIL ONLY (CEQA@saccounty.net)

Subject: Draft Subsequent Environmental Impact Report (SEIR) for the American River Parkway Natural Resources Management Plan, Sacramento County

Dear Joelle Inman:

The California State Lands Commission (Commission) staff has reviewed the Draft SEIR for the American River Parkway Natural Resources Management Plan (NRMP), which is being prepared by Sacramento County (County). The SEIR will supplement the Final EIR, certified in September 2008, for the American River Parkway Plan (Plan), State Clearinghouse No. 2007032125. The County, as the public agency proposing to carry out the NRMP, is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The Commission is a trustee agency for projects that could directly or indirectly affect State sovereign lands and their accompanying Public Trust resources or uses. Additionally, as future NRMP projects and activities are implemented on State sovereign lands, the Commission will act as a responsible agency.

Commission Jurisdiction and Public Trust Lands

The Commission has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The Commission also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6009, subd. (c); 6009.1; 6301; 6306). All tidelands and submerged lands granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the common law Public Trust Doctrine.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The state holds these lands for the benefit of all people of the state for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections. On navigable non-tidal waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark, except where the boundary has been fixed by agreement or a court decision. Such boundaries may not be readily apparent from present day site inspections.

The American River (from approximately 3 miles upstream of the confluence with the Sacramento River to Nimbus Dam) is navigable, non-tidal State sovereign land under the Commission's jurisdiction. In addition, Camp Pollock, located on the north side of the American River, west of Northgate Boulevard (Assessor's Parcel Numbers 274-0120-007 and 274-0120-009), and adjacent to the American River, is State sovereign land under the Commission's jurisdiction. In 2012, the Commission authorized Lease No. PRC 9033 to the Sacramento Valley Conservancy for the use, maintenance, and operation of the land (Camp Pollock) and existing improvements comprising the lease premises for purposes of public access, conservation, recreation, education, and public/private events.

The portion of the American River from the confluence with the Sacramento River to approximately 3 miles upstream is partially natural and partially artificial. The natural portion of the River (including the abandoned channel) at this location is granted to the City of Sacramento (City) pursuant to chap. 519, stats. 1868, minerals reserved (G 21-01). A lease from the Commission is not required for future projects extending into the River at this location. Commission staff advises that you contact the City to address any permits required for future projects at this location.

Project Description

The NRMP is intended to advise resource management to promote healthy ecosystems and resource protections while balancing concurrent American River Parkway Plan goals of flood control, recreational opportunities, and public safety.

Environmental Review

The Sacramento County Board of Supervisors certified the original NRMP Final EIR on September 10, 2008, and approved the Plan. Because proposed updates to the NRMP contain modified elements that were not considered in the previous analysis, the County determined that an SEIR should be prepared to revise the analysis of environmental impacts presented in the previous EIR. The SEIR for the NRMP supports a

programmatic level policy document, with project related analysis associated with hydraulic modeling for specific locations within the Plan area. No other project specific analysis was presented within the SEIR for the NRMP. Future projects and activities proposed as part of the NRMP would be subject to project level review under CEQA.

Commission staff offers the following comments and recommendations on the SEIR.

1. Cultural Resources: In the Cultural Resources section of the SEIR, under the Regulatory Setting for state regulations, please include the following language acknowledging the Commission's jurisdiction and title to resources, "The title to all archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the State and under the jurisdiction of the California State Lands Commission (Pub. Resources Code, § 6313)." In addition, staff requests that the following statement be included as a mitigation measure in the SEIR's Mitigation and Monitoring Plan: "The final disposition of archaeological, historical, and paleontological resources recovered on State sovereign land under the jurisdiction of the California State Lands Commission must be approved by the Commission."

2. Land Use and Planning: In the Land Use and Planning section of the SEIR, under the Regulatory Setting for state regulations, please include a section on Commission jurisdiction. Please use the description of Commission jurisdiction in the Commission Jurisdiction and Public Trust Lands section of this letter.

Thank you for the opportunity to comment on the SEIR for the NRMP. As a trustee agency, please keep us advised of changes to the NRMP and all other important developments. Please refer questions concerning environmental review to Jason Ramos, Senior Environmental Scientist at (916) 574-1814 or jason.ramos@slc.ca.gov. For questions concerning Commission leasing jurisdiction, please contact Ninette Lee, Public Land Manager, at (916) 574-1869 or ninette.lee@slc.ca.gov.

Sincerely,

Nicole Dobroski, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
Eric Gillies, Commission
Ninette Lee, Commission

03 November 2022

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COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT, PLER 2019-00073 – AMERICAN RIVER PARKWAY NATURAL RESOURCE MANAGEMENT PLAN, SACRAMENTO COUNTY

Pursuant to the Sacramento County Planning and Environmental Review's 20 September 2022 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Draft Subsequent Environmental Impact Report* for the PLER 2019-00073 – American River Parkway Natural Resource Management Plan, located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by

the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website: http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Total Maximum Daily Load – Planning and Assessment

Portions of the Lower American River are within the project area are currently on the Clean Water Act Section 303(d) List of Impaired Waters due to Bifenthrin, Indicator Bacteria, Mercury, PCBs (Polychlorinated biphenyls), Pyrethroids, Temperature, and Toxicity. Central Valley Water Board staff recommends referencing the most current 303(d) list and requirements contained in existing TMDLs for the Lower American River within the Environmental Impact Report, discussing any potential short- and long-term effects of these pollutants from project activities or program level impacts, and discussing mitigation measures and/or best management practices to reduce potential effects.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that

in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage

under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4849 or Shawn.Agarwal@waterboards.ca.gov.

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Environmental Scientist