



Special Meeting

AGENDA

PARADISE CUT BYPASS EXPANSION AND MULTI-BENEFIT PROJECT ADVISORY COMMITTEE MEETING

San Joaquin Council of Governments, 555 E. Weber Ave, Stockton, CA 95202

March 25, 2026 | 10:00 am – 12:00pm

Advisory Committee Members:	Advisory Committee Alternates:
Darren Suen, San Joaquin Area Flood Control Agency	Glenn Prasad, San Joaquin Area Flood Control Agency
John Herrick, South Delta Water Agency	Mary Hildebrand, South Delta Water Agency
Sarah Puckett, American Rivers	
Lea Emmons, City of Tracy	Robin Kloepfer, City of Tracy
Vacant	Mario Jacques, Reclamation District 1, 2, 544, 2089
Bob Pombo, Reclamation District 2095	Daniel DeGraaf, Reclamation District 2095
Alexis Stevens, Reclamation District 2058, 1007	Greg Pombo, Reclamation District 2058, 1007
Susan Dell’Osso, Reclamation District 2062	Ramon Batista, Reclamation District 2062
Jesus Esparza, Department of Water Resources (non-voting)	
Andrea Buckley, Central Valley Flood Protection Board (non-voting)	Dustin Sanoski / Greg Harvey, Central Valley Flood Protection Board (non-voting)
Campbell Ingram, Delta Conservancy (non-voting)	Lauren Damon, Delta Conservancy (non-voting)

Meeting Objective: Receive input on the proposed Master Plan alternatives and advise SJAFCA and the study team on the alternative that should be carried forward as the Paradise Cut Master Plan.

1. Administrative Matters (20 minutes)

- A. Roll call
- B. Approve 1/12 Meeting Summary (Attachment A) **[Action]**
- C. New Advisory Committee Members (Flyer, Attachment B)
- D. Tentative Advisory Committee Meeting Dates

2. Paradise Cut Feasibility Study Update (M. Weymiller and G. Prasad, 15 minutes)

- A. DWR Contract Status

B. Master Plan Approach (Master Plan Formulation Memo, Attachment C)

3. Incremental Hydraulic Analysis Results (R. Reinhardt, 20 minutes)

4. Master Plan Alternatives (M. Weymiller, 45 minutes)

- A. Alternatives
- B. Cost Estimates
- C. Feedback from Small Group Meetings
- D. Selection of Master Plan Alternative (Staff Report, Attachment D) **[Action]**
- E. Considerations for Phasing

5. SJAFCA Update (G. Prasad) (5 minutes)

6. California Department of Water Resources and Central Valley Flood Protection Board Updates (5 minutes)

7. Advisory Committee Comments (5 minutes)

8. Public Comments (5 minutes)

9. Adjournment

Virtual Attendance (Zoom):

Link to meeting:

<https://us06web.zoom.us/j/7757702577?pwd=xUcqarZx8eEpJ6NqjdUuaEabuA6MSb.1&omn=86124811107>

Meeting ID: 775 770 2577

Passcode: 1T7Qnv

ATTACHMENT A



DRAFT

SUMMARY

Paradise Cut Bypass Expansion and Multi-Benefit Project
Advisory Committee Meeting
Stockton City Hall
January 12, 2026 | 10:00 AM – 12:00 PM

Meeting called to order at 10:04 AM.

1. Administrative Matters:

- a. Roll Call by L. Randall. A quorum was established.

Committee Members (Present):

Darren Suen, San Joaquin Area Flood Control Agency
John Herrick, South Delta Water Agency
Sarah Puckett, American Rivers
Bob Pombo, Reclamation District 2095
Alexis Stevens, Reclamation District 2058, 1007
Jesus Esparza, Department of Water Resources (non-voting) (arrived after Roll Call)
Andrea Buckley, Central Valley Flood Protection Board (non-voting) (via Zoom)
Lauren Damon, Sacramento-San Joaquin Delta Conservancy (non-voting) (via Zoom)
Robin Kloepfer, Alternate for Lea Emmons, City of Tracy
Ramon Batisa, Alternate Reclamation District 2062

Committee Members (Absent):

Nick Mussi

Other In-Person Attendees:

Glenn Prasad, SJAFCA
Leanne Randall, SJAFCA
Ryan Curry, SJAFCA

Zoom Attendees:

Melissa Weymiller, LWA
Steve Mayo, San Joaquin Council of Governments (SJCOG)
Mary Hildebrand, South Delta Water Agency

John Collins, Office of the Delta Watermaster
Ric Reinhardt, Wood Rogers
Anji Shakya, Delta Water Conservancy
Brian Haines, ESA
Chase Hildeburn, DWR
Kelly Wright-LaForce, Banta Carbona Irrigation District
Daniel De Graaf, RD 2095
Terra Alpaugh, Kearns & West
Ben Gettleman, Kearns & West

- Pledge to the Flag
- b. Approval of August 25, 2025 Meeting Summary
 - Motion to approve: S. Puckett
 - Second: R. Kloepfer
 - Motion passed 6-0
 - c. 2026 Advisory Committee Meeting Dates
 - G. Prasad noted that the 2026 Advisory Committee meeting dates will be scheduled and shared at a later time. No action to take now, only informational.
 - No comments by the Committee.
2. Independent Facilitator Selection
 - a. Kearns & West selection for facilitation.
 - Consero Solutions withdrew their contract with SJAFCA.
 - SJAFCA has retained Kearns & West as an independent facilitator for Future Advisory Committee meetings.
3. Receive Paradise Cut Feasibility Study Update
 - LWA provided an overview of the current status of the Feasibility Study and the findings from Chapter 6 evaluating Alternatives 2B, 3B and 6B.
 - The definition of feasibility was reviewed, including technical viability, cost reasonableness, landowner support, governance, and funding capacity.
 - LWA summarized major cost drivers identified in the Feasibility Study, including expanded South Delta channel restoration, railroad modifications, hydraulic mitigation, land acquisition, and long-term operations and maintenance.
 - Funding challenges were discussed, including low benefit cost ratios, limited alignment with federal funding programs, and constrained local cost-share capacity.

Master Plan and Path Forward

- Staff introduced a proposed Master Plan approach that would allow phased implementation aligned with future funding opportunities.
- The Master Plan concept is intended to preserve the long-term vision of a large-scale bypass while identifying smaller, implementable components.
- Early implementation concepts discussed including sediment removal under I-5, lowering the bench downstream of the Paradise Cut weir, limited weir widening options, targeted dredging, and selected levee setbacks.

4. Scopes of Work for Additional Technical Analysis

- Staff presented proposed Phase 3 Plus scopes of work to support refinement of alternatives and development of the Master Plan.
- Proposed work includes expanded sediment transport modeling, South Delta sedimentation studies, development of a channel restoration plan, refined hydraulic and cost analyses, economic evaluation, environmental review, and continued coordination and outreach.
- Sediment modeling will be based on the 49 miles for the full Master Plan, the scope doesn't include analysis of incremental dredging. There are concerns from John Herrick that we might not understand the adverse impacts to other areas if we only dredge some areas.
- Brian Haines clarified that the additional sedimentation analysis will include Old River.
- Advisory Committee members discussed the importance of prioritizing no-regret actions that provide near-term benefits while supporting long-term objectives.
- Mary Hildebrand recommended a sediment trap as an early implementation action.
- Daniel de Graff said RD 2095 still has concerns about the portions of the project affecting his RD footprint.
- Staff and consultants will hold subsequent meetings with reclamation district engineers to discuss the project and receive technical feedback.

Governance and Funding Considerations

- Committee members discussed the scale of governance required to implement, operate, and maintain a project of this magnitude.
 - Staff noted that additional analysis will help clarify longer-term responsibilities, funding mechanisms, and landowner impacts.
 - The need for continued coordination with state agencies was emphasized.
5. Process to Appoint New Advisory Committee Members
 - a. SJAFCA will be working on a formal recruitment for a new Advisory Committee member to replace Nick Mussi, who has retired.
 6. SJAFCA Update
 - a. SJAFCA provided a brief update on ongoing coordination efforts with the Lathrop and Manteca Feasibility Study and the Manteca Dryland Levee
 7. California Department of Water Resources and Central Valley Flood Protection Board Updates
 - a. DWR representative J. Esparza and CVFPB representative A. Buckley provided brief updates regarding funding and acknowledged the complexity of the project.
 8. Advisory Committee Comments
 - a. The Advisory Committee members asked clarifying questions regarding costs, phased implementation, and timing. The members emphasized the importance of clear communication and sufficient time for review as the project advances. D. Suen appreciates engagement from all on this project.
 9. Public Comment
 - a. John Collins with the Water Master's office would like to discuss dredging efforts and will reach out to coordinate a meeting.
 10. Adjournment
 - The meeting adjourned at 11:40 AM.
 - The next meeting scheduled is To Be Determined.



SAN JOAQUIN AREA
FLOOD CONTROL AGENCY



RECRUITING NOW!

The San Joaquin Area Flood Control Agency (SJAFCFA) is now accepting applications for appointment to the Paradise Cut Bypass Expansion and Multi-Benefit Project Advisory Committee (AC) to fill the position of an AC Member. To qualify, applicants must be representatives of Reclamation Districts 1, 2, 544, 2089, or 773. The position will remain open until filled; the first review of applications is anticipated one week after posting.

Interested?

For eligibility and to download the application, please visit:

www.SJAFCFA.org/governance/governance

ATTACHMENT C

Paradise Cut Bypass Expansion and Multi-Benefit Project Master Plan Formulation Memorandum March 6, 2026

Purpose

The goal of the Master Plan is to illustrate how phased implementation, aligned with future funding opportunities, will result in a plan on the scale of Alternatives 6b. Developing the Master Plan alternatives included evaluating two additional weir widening options. These additional weir options would be considered in addition to and not in place of the upstream RD 2095 weir. The purpose of this memo is to present two Master Plan alternatives for consideration with the expectation that one alternative will be selected, carried forward for further evaluation, and broken down into phases for implementation. The first phase of implementation will identify the management actions of the Master Plan that are most likely to be eligible for existing Federal funding programs. It is envisioned that as new funding opportunities are created, different elements of the Master Plan will move forward into design and implementation.

Approach

To develop the Master Plan Alternatives, LWA and the Wood Rodgers study team evaluated each of the management actions included in Alternative 6b (as presented in the draft Paradise Cut Feasibility Study report, Chapter 6). Four additional actions were also evaluated. The new management actions include:

- Two additional options that would extend the existing weir, one approximately 930 feet south into RD 2095, and one approximately 600 feet north into RD 2107.
- Sediment removal under I-5 to lower a high bench and improve capacity in this reach.
- Bench lowering and riparian thinning downstream of the existing weir for hydraulic and ecosystem benefits.

The study team grouped different combinations of management actions into 13 scenarios, shown on page 3, to evaluate how individual management actions contribute to the hydraulic performance, acres of expanded floodplain, and estimated cost. The results inform which of these should be included in the Master Plan alternatives. The full results are included on page 4.

Overview of Scenarios

Scenario 1 is a potential, cost effective early implementation project (EIP) described in attachment A. Scenarios 2 through 6 include the EIP and the weir extensions into both RD 2095 and RD 2107. Scenarios 7 – 11 include the EIP and the weir extension into RD 2095.

Scenarios 12 and 13 add in the remaining management actions from Alternative 6b to all the previous scenarios. The remaining management actions from Alternative 6b include:

- A new 2,000-foot upstream weir (in RD 2095)
- A degrade of the Paradise Cut left bank levee between the existing weir and UPRR East;
- 500-foot opening in UPRR East;
- Improvements to the existing Deuel Vocational Institution (DVI) levee, including extending the DVI levee to the east and west;
- Wind/wave buffers along the RD 2095 San Joaquin River levee, UPRR east and the DVI levee; and
- Salmon Slough Restoration area.

The full list of management actions in 6b is included in Attachment 3. New floodway areas upstream of the UPRR East crossing would remain in agricultural production, except that a hydrogeomorphic zone would be designated on approximately 300 acres of land immediately downstream of the new weir. The distinction between Scenarios 12 and 13 is that Scenario 12 includes the RD 2095 weir extension, and Scenario 13 includes both the RD 2107 and RD 2095 extensions. A map of these management actions is included on Page 5.

All scenarios include the 49 miles of dredging included in the final array of alternatives (Alternatives 2b, 3b, and 6b) and hydraulic mitigation as described in Chapter 6. The Four Corners (Salmon Slough) restoration area does not include any change in roughness and only includes minor grading. As a result, it does not require changes to the hydraulic model.

Management Actions included in Master Plan Scenarios									
Scenario	Weir Management Actions			Downstream Management Actions					
	RD 2107 Weir Extension (600-ft North)	RD 2095 Weir Extension (930-ft South)	New 2,000-ft upstream weir (RD 2095)	EIP	RD 2062 Levee Degrade	RD 2058 Setback at Paradise Rd, Downstream of Bend 16)	RD 2095 Setback (UPRR east and I-5)	RD 2058 Setback (I-5 and UPRR West) with 500-foot opening and wind/wave buffer	Additional Management Actions from 6b
Scenario 1				X					
Scenario 2	X	X		X					
Scenario 3	X	X		X	X				
Scenario 4	X	X		X	X	X			
Scenario 5	X	X		X	X	X	X		
Scenario 6	X	X		X	X	X	X	X	
Scenario 7		X		X					
Scenario 8		X		X	X				
Scenario 9		X		X	X	X			
Scenario 10		X		X	X	X	X		
Scenario 11		X		X	X	X	X	X	
Scenario 12		X	X	X	X	X	X	X	X
Scenario 13	X	X	X	X	X	X	X	X	X
Acres Added to the Floodplain	25	7	2093	267	187	352	97	154	100

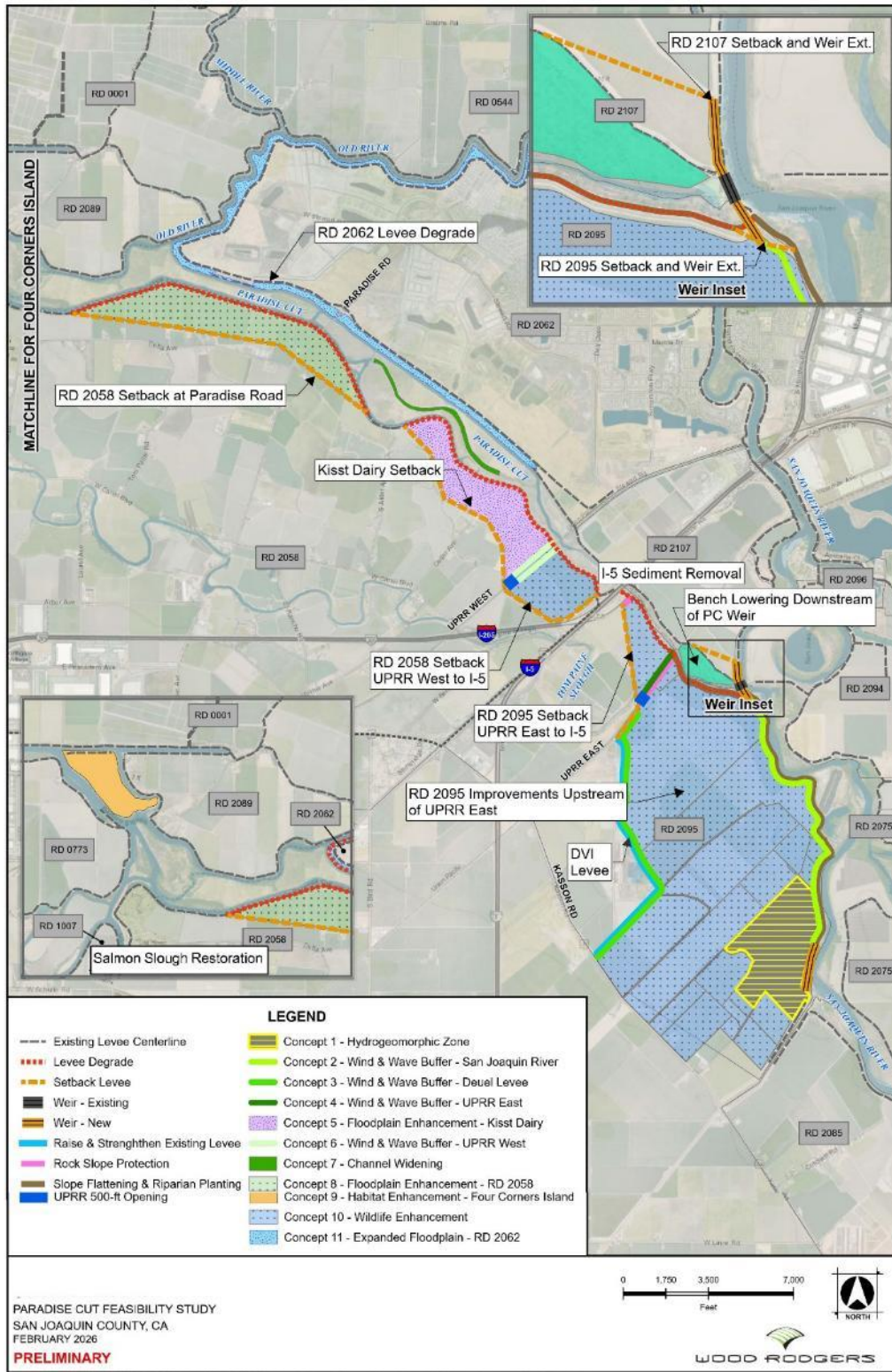
Hydraulic Modeling Results

Index Point	Change in Maximum Water Surface Elevation from Existing (feet)																												
	Scenario 1 (EIP)		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 6		Scenario 13		Scenario 7		Scenario 8		Scenario 9		Scenario 10		Scenario 11		Scenario 12		Alt. 6b		
	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr	200-Yr	100-Yr
San Joaquin River																													
1. @ Banta Carbona Canal	-0.3	-0.6	-0.5	-0.7	-0.5	-0.7	-0.5	-0.8	-1.1	-1.1	-1.1	-1.1	-4.8	-4.7	-0.4	-0.8	-0.5	-0.8	-0.5	-0.8	-1.1	-1.1	-1.1	-1.1	-4.9	-4.7	-3.8	-3.6	
2. @ Paradise Weir	-0.5	-1.6	-0.9	-2.2	-1.0	-2.2	-1.1	-2.3	-2.2	-3.1	-2.3	-3.2	-3.5	-3.9	-0.9	-2.0	-0.9	-2.1	-0.9	-2.1	-2.0	-2.8	-2.1	-3.0	-3.9	-4.1	-2.0	-2.6	
3. @ I-5	-0.8	-1.5	-1.3	-2.6	-1.4	-2.7	-1.5	-2.7	-2.5	-3.5	-2.6	-3.6	-3.7	-4.2	-1.2	-2.4	-1.3	-2.5	-1.4	-2.5	-2.3	-3.3	-2.4	-3.4	-4.2	-4.4	-2.4	-3.1	
4. @ Old River	-0.6	-1.2	-1.0	-2.0	-1.1	-2.1	-1.1	-2.2	-1.9	-2.7	-2.0	-2.8	-2.8	-3.1	-0.9	-1.9	-1.0	-1.9	-1.1	-2.0	-1.8	-2.5	-1.9	-2.6	-3.2	-3.3	-1.9	-2.4	
5. @ Howard Road bridge	-0.5	-0.9	-0.8	-1.4	-0.9	-1.5	-0.9	-1.5	-1.5	-1.9	-1.6	-2.0	-2.1	-2.2	-0.8	-1.3	-0.8	-1.3	-0.9	-1.4	-1.4	-1.8	-1.5	-1.8	-2.4	-2.3	-1.4	-1.6	
6. @ French Camp Slough	-0.3	-0.5	-0.5	-0.6	-0.5	-0.6	-0.6	-0.7	-0.9	-0.9	-0.9	-1.0	-1.3	-1.1	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	-0.8	-0.9	-0.9	-0.9	-1.4	-1.1	-0.9	-0.8	
Paradise Cut																													
7. @ UPRR-east bridge	-0.1	-0.8	0.7	-0.2	0.7	-0.2	0.6	-0.3	-0.9	-1.5	-1.1	-1.7	-1.5	-1.5	0.6	-0.4	0.6	-0.4	0.5	-0.5	-1.1	-1.7	-1.3	-1.9	-1.7	-1.4	0.5	0.3	
8. @ I-5	1.0	0.1	1.6	0.4	1.5	0.4	0.9	-0.2	1.7	0.8	1.0	0.1	1.6	1.3	1.5	0.4	1.5	0.3	0.9	-0.4	1.5	0.6	0.9	0.0	1.3	1.3	2.1	1.4	
9. @ UPRR-west bridge	1.8	0.5	2.3	0.8	2.2	0.7	1.4	-0.1	1.9	0.7	1.7	0.5	2.2	1.5	2.2	0.8	2.1	0.7	1.3	-0.2	1.8	0.6	1.6	0.4	1.9	1.6	1.5	0.5	
10. @ Paradise Road bridge	1.9	0.9	2.3	1.1	2.2	1.0	1.1	0.0	1.5	0.6	1.5	0.7	1.8	1.5	2.2	1.2	2.1	1.1	1.1	-0.1	1.4	0.6	1.5	0.6	1.5	1.5	1.3	0.8	
Old River																													
11. @ San Joaquin River	-0.6	-1.2	-1.0	-2.0	-1.1	-2.1	-1.1	-2.2	-1.9	-2.7	-2.0	-2.8	-2.8	-3.1	-0.9	-1.9	-1.0	-1.9	-1.1	-2.0	-1.8	-2.5	-1.9	-2.6	-3.2	-3.3	-1.9	-2.4	
12. @ Middle River	0.3	-0.3	0.3	-0.6	0.2	-0.7	0.1	-0.7	0.0	-0.6	0.0	-0.6	-0.1	-0.2	0.3	-0.4	0.2	-0.5	0.1	-0.7	0.0	-0.5	0.0	-0.5	-0.4	-0.2	-0.1	-0.4	
13. @ west end of Stewart Trac	1.2	0.5	1.4	0.5	1.4	0.5	1.3	0.5	1.6	1.0	1.7	1.0	1.8	1.7	1.4	0.6	1.4	0.6	1.3	0.4	1.6	0.9	1.6	1.0	1.5	1.7	1.5	1.1	
14. @ Sugar Cut	1.2	0.5	1.4	0.4	1.4	0.5	1.4	0.6	1.7	1.1	1.7	1.1	1.9	1.8	1.3	0.5	1.3	0.6	1.4	0.5	1.6	1.0	1.7	1.1	1.6	1.8	1.5	1.2	
15. @ Tracy Blvd bridge	1.1	0.5	1.3	0.5	1.3	0.5	1.3	0.6	1.6	1.0	1.6	1.1	1.8	1.7	1.3	0.5	1.3	0.5	1.3	0.5	1.5	1.0	1.6	1.0	1.5	1.7	1.5	1.2	
Grant Line Canal																													
16. @ Doughty Cut and Grant	1.1	0.4	1.3	0.4	1.3	0.4	1.3	0.5	1.6	1.0	1.6	1.1	1.7	1.7	1.3	0.5	1.3	0.6	1.3	0.5	1.5	1.0	1.6	1.0	1.5	1.7	1.5	1.2	
17. @ Tracy Blvd bridge	0.9	0.4	1.0	0.3	1.0	0.4	1.0	0.4	1.3	0.8	1.3	0.9	1.5	1.4	1.0	0.4	1.0	0.4	1.0	0.4	1.3	0.8	1.3	0.8	1.2	1.4	1.2	0.9	
Middle River																													
18. @ Undine Road bridge	0.3	-0.2	0.2	-0.5	0.2	-0.6	0.1	-0.6	0.0	-0.5	0.0	-0.5	-0.2	-0.2	0.3	-0.4	0.2	-0.4	0.1	-0.6	0.0	-0.5	0.0	-0.5	-0.5	-0.2	-0.1	-0.3	
19. @ Howard Road bridge	0.3	-0.1	0.2	-0.2	0.2	-0.3	0.1	-0.3	0.0	-0.2	0.0	-0.2	0.0	0.0	0.2	-0.2	0.2	-0.2	0.1	-0.3	0.0	-0.2	0.0	-0.2	-0.3	-0.1	0.0	-0.1	

Notes:

1. Baseline for Scenario comparison is Existing Condition.
2. Existing Condition is flood system as of 2024.
3. All Scenarios include Mossdale UFRF levee improvements and 49 miles of dredging.
4. Model simulations assumes levees overtop but do not fail.

Map of Management Actions



Discussion

A more detailed description and analysis of each scenario is included in Attachment A. The scenarios were assessed based on hydraulic performance, ecosystem benefits, implementation feasibility, and relative cost. The analysis demonstrates that not all management actions contribute equally to project objectives, and that certain components provide substantial incremental benefit while others primarily increase cost or downstream impacts.

Acres of land added to the floodplain was used as a proxy for the potential to restore habitat because there is insufficient information at this stage of formulation to estimate the quantity or quality of different habitat types that would be created or restored. Inundated floodplain is included as a Central Valley Flood Protection Plan (CVFPP) Conservation Strategy Measurable Objective and is included in our screening and evaluation criteria. The management actions could include restoration or the use of working agricultural lands for habitat, as documented in ESA's memo "Habitat Restoration Concepts Supporting the Final Array of Alternatives for the Paradise Cut" dated 9/12/2025. The Restoration Concepts memorandum will be updated to address the management actions in the Master Plan when SJAFCA and DWR select an alternative.

Cost estimates include land acquisition, environmental remediation, environmental mitigation, environmental and cultural permitting, and hydraulic mitigation. Environmental remediation needs for the former Kisst Dairy property are unknown but could be significant. Hydraulic mitigation measures were developed with Reclamation District engineers to identify the needs of each specific District (e.g., seepage, overtopping, erosion). Hydraulic mitigation may have biological impacts, and future design of any elements will incorporate biological considerations. The following sections summarize the performance of the management actions that could be included in a Master Plan alternative.

Potential Early Implementation Project

The EIP provides substantial near-term hydraulic benefits in urban areas at comparatively low cost and adds several hundred acres of land to the floodplain, making it well suited for early implementation. However, these management actions offer only modest benefits to upstream rural levees from reduced stages and result in increased flood stages within Paradise Cut and downstream tributaries that require hydraulic mitigation.

RD 2095 and RD 2107 Weir Extensions

When comparing scenarios that include only the RD 2095 weir extension (Scenarios 7-12) to those that include both the RD 2095 and RD 2107 weir extensions (Scenarios 2-6 and

13), results indicate that the RD 2095 extension contributes most of the hydraulic benefit that is gained from both extensions. Removing the RD 2107 weir extension results in only a minor reduction in flood stage benefits along the San Joaquin River in urban areas, with changes on the order of a few tenths of a foot for large flood events at I-5 but also removes 25 acres of floodplain expansion. Benefits to upstream rural levees are largely unchanged between the two configurations, and differences in downstream hydraulic impacts are minimal. Since the RD 2107 extension only contributes a small amount of land to the floodplain and incremental urban stage reduction when combined with RD 2095, the technical team recommends removing this management action from consideration in both Master Plan alternatives.

RD 2062 Levee Degrade

The RD 2062 levee degrade does not result in substantive reduction in stages on the San Joaquin River in the urban areas. This element does reduce some of the hydraulic impacts in Paradise Cut but increases impacts in Old River and the downstream tributaries. The degrade adds 187 acres of land to the floodplain. However, no planting nor specific habitat restoration activities associated with the expanded floodplain are proposed as part of this alternative. An added complexity of this management action is it requires the Federal Project Levee designation be changed from the existing levee to the new setback levee. This would likely need to be performed by, or at least supported by, the River Islands team that developed the information that supported the Urban Levee Design Criteria certification.

RD 2058 Setback at Paradise Road

The RD 2058 setback at Paradise Road downstream of bend 16 does not result in a large reduction in stages on the San Joaquin River in the urban areas or to the rural levees upstream. However, it does significantly reduce hydraulic impacts in Paradise Cut with only slight increases in impacts in Old River and the downstream tributaries. The RD 2058 setback at Paradise Road also adds 352 acres of land to the floodplain.

RD 2095 Setback Between UPRR East and I-5

The RD 2095 setback reduces the tailwater on the UPRR East embankment, increases the efficiency of the weir, and further reduces flood stages on the San Joaquin River in the urban areas. The stage reduction for the 200-year flood event on the San Joaquin River at I-5 is 3.3 feet (Scenario 10). It does result in a significant increase in flood stage in Paradise Cut and downstream tributaries as a result of increasing the efficiency of the existing weir. The setback area adds 97 acres of land to the floodplain. It does not include the 500-foot opening in the railroad that is included in Alternative 6b.

RD 2058 Setback Between I-5 and UPRR West

Adding the RD 2058 setback levee UPRR West to I-5, including the 500 ft opening in the UPRR West, only minimally reduces flood stages on the San Joaquin River in the urban areas. It also does not show an increased benefit to the rural levees further upstream. This management action does reduce hydraulic impacts in Paradise Cut but not the downstream tributaries. This management action adds 154 acres of land to the floodplain.

New 2,000-ft Upstream Weir (RD 2095)

Adding an additional 2,000-foot weir upstream as envisioned in Alternative 6b significantly decreases flood stages on the San Joaquin River in the urban areas. The stage reduction for the 200-year flood event on the San Joaquin River is 4.2 feet with scenario 13. There is also a significant increase in benefits to the rural levees further upstream on the San Joaquin River (-4.9 feet for scenario 12 for the 100 year). This results in a significant increase in flood stage in Paradise Cut at the UPRR East embankment, but the impacts decrease downstream of these points. The new floodway area in RD 2095, upstream of the UPRR east, is approximately 2,093 acres, of which up to 300 acres immediately downstream of the new weir could be restored as habitat.

Comparison to Alternative 6B

A table showing the elements that make up Alternative 6b is included as Attachment C. Scenario 12 is Alternative 6b plus the following three added management actions: 1) the RD 2095 setback levee and weir extension, 2) sediment removal under I-5, 3) and bench lowering and riparian thinning downstream of the existing weir for hydraulic and ecosystem benefits. The addition of these actions to Alternative 6b results in greater flood stage reductions at I-5 for the 200-year event (-4.4 ft) compared to Alternative 6b alone (-3.1 ft).

Scenario 13, with the addition of the RD 2107 weir extension, also produces greater flood stage reductions (-4.2 ft) compared to Alternative 6b (-3.1 ft). However, downstream impacts are increased slightly above Alternative 6b in Scenario 13. Inclusion of these additional management actions to Alternative 6b shows increased benefits with relatively moderate cost increases (increase in cost of \$66.3 million).

Master Plan Alternative Recommendations

Master Plan A – Expanded Master Plan

LWA and the Wood Rodgers study team recommend Scenario 12 be carried forward as a Master Plan alternative ("Master Plan A - Expanded Master Plan"). There is minimal impact in flood stage associated with omitting this management action. Scenario 12 provides the

greatest opportunity to reestablish large scale floodplain processes and restore habitat, with approximately 3,257 acres added to the floodway.

For Master Plan A (Scenario 12), the 200-year flood event on the San Joaquin River at I-5, stage reduction is 4.4 feet. This scenario also shows a significant increase in benefits to the rural levees further upstream on the San Joaquin River (-4.9 ft for the 100-year) as shown at Index Point 1 (Banta Carbona Canal). See Attachment B for a map of Index Point locations.

Management Actions in Master Plan A – Expanded Master Plan

Management Action	Cost	Acreage Added to Floodway
Kisst Dairy Setback	\$64,025,900	267
I-5 Sediment Removal	\$15,808,300	N/A (26 acres more frequently activated floodplain)
Bench Lowering D/S PC Weir and Riparian Thinning	\$43,405,500	N/A (38 acres more frequently activated floodplain)
RD 2062 Levee Degrade	\$34,259,500	187
RD 2058 Setback Levee at Paradise Road	\$93,731,800	352
RD 2058 Setback Levee - I-5 to UPRR West with 500-foot opening and wind/wave buffer	\$56,554,800	154
RD 2095 Setback Levee - UPRR East to I-5	\$16,884,800	97
RD 2095 2,000 ft. Weir and Additional Improvements - Upstream of UPRR East	\$294,904,000	2093
New RD 2095 Weir Extension (930-ft South)	\$7,124,300	7
Channel Restoration (Dredging)	\$385,950,000	N/A
Hydraulic Mitigation	\$80,103,900	N/A
Four Corners Island Habitat Enhancement (Salmon Slough); not included in the hydraulic modeling	\$18,227,400	100
TOTAL	\$1,121,191,700	3257

Master Plan B – Refined Master Plan

LWA and the Wood Rodgers study team recommend that the second Master Plan alternative (“Master Plan B - Refined Master Plan”) remove several management actions

from Scenario 12 that do not significantly increase hydraulic benefits. These include the RD 2062 levee degrade and the RD 2058 setback levee at I-5 to UPRR West. Hydraulic modeling has not been completed for this combination of management actions, but modeling results indicate that the omitted actions do not contribute significantly to hydraulic benefits. Although omitting these actions would reduce the potential to restore floodplain habitat by 341 acres, it would reduce costs by about \$100 million. Removing the RD 2062 levee degrade reduces the regulatory complexity because it removes the need to modify the Federal Project Levee designation.

Although this alternative decreases the total area available for restoration, it retains the key upstream weir and RD 2095 setback, Kisst Dairy, and RD 2058 setback at Paradise Road, which collectively support the ecosystem restoration objectives. Within the smaller footprint, habitat quality can be maximized by prioritizing restoration within the hydrogeomorphic zone downstream of the new weir, enhancing structural diversity through bench lowering and riparian thinning, and integrating multi benefit features such as wind wave buffers and floodplain enhancements.

Even though RD 2058 setback at Paradise Road also does not have significant hydraulic benefits in the urban areas, it reduces the need for hydraulic mitigation measures and would add 352 acres of land to the floodplain. Therefore, the RD 2058 setback at Paradise Road is recommended to be included in the Refined Master Plan alternative.

Management Actions in Master Plan B – Refined Master Plan

Management Action	Cost	Acreage Added to Floodway
Kisst Dairy Setback	\$64,025,900	267
I-5 Sediment Removal	\$15,808,300	N/A (26 more frequently activated floodplain)
Bench Lowering D/S PC Weir and Riparian Thinning	\$43,405,500	N/A (38 acres more frequently activated floodplain)
RD 2058 Setback Levee at Paradise Road Downstream of Bend 16	\$93,731,800	352
RD 2095 Setback Levee - UPRR East to I-5	\$16,884,800	97

RD 2095 2,000 ft. Weir and Additional Improvements - Upstream of UPRR East ¹	\$294,904,000	2093
New RD 2095 Weir (930-ft South)	\$7,124,300	7
Channel Restoration (Dredging)	\$385,950,000	N/A
Hydraulic Mitigation	\$80,103,900	N/A
Four Corners Island Habitat Enhancement (Salmon Slough); not included in the hydraulic modeling	\$18,227,400	100
TOTAL	\$1,020,165,900	2916

Comparison of the Master Plans

	Master Plan A	Master Plan B
Cost	\$1,121,191,700	\$1,020,165,900
Acreage Added to the Floodplain	3257	2916
Management Actions		
Kisst Dairy Setback	X	X
I-5 Sediment Removal	X	X
Bench Lowering D/S PC Weir and Riparian Thinning	X	X
RD 2062 Levee Degrade	X	
RD 2058 Setback Levee at Paradise Road	X	X
RD 2058 Setback Levee - I-5 to UPRR West with 500-foot opening and wind/wave buffer	X	
RD 2095 Setback Levee - UPRR East to I-5	X	X

¹ This includes the 500-foot opening in the UPRR east, the slope flattening of the landside of the SJ River levee, wind wave buffers at along the UPRR east, DVI levee and SJ River levee, improvements and extension of the DVI levee, new channel to drain internal drainage to the Paradise Cut

RD 2095 2,000 ft. Weir and Additional Improvements - Upstream of UPRR East	X	X
New RD 2095 Weir Extension (930-ft South)	X	X
Channel Restoration (Dredging)	X	X
Hydraulic Mitigation	X	X
Four Corners Island Habitat Enhancement (Salmon Slough); not included in the hydraulic modeling	X	X

Master Plan Phases

Once a Master Plan alternative is selected, a phased implementation strategy will be developed to sequence the management actions based on feasibility, funding readiness, and overall benefit. Both alternatives will require close coordination with affected landowners as design advances and individual components move toward implementation. As noted in Chapter 6, full buildout will require substantial investment and will be subject to funding constraints; however, the initial phase will be structured as a standalone project positioned to be competitive for available State and Federal funding.

Implementation will involve coordination with multiple federal and state regulatory agencies, resolution of permitting requirements, evaluation of potential environmental remediation needs associated with former Kisst Dairy operations, and development of long-term operations and maintenance funding strategy. By approaching these challenges through a phased framework, the project can advance in manageable increments and demonstrate early successes that support long term delivery of flood risk reduction and ecosystem restoration benefits.

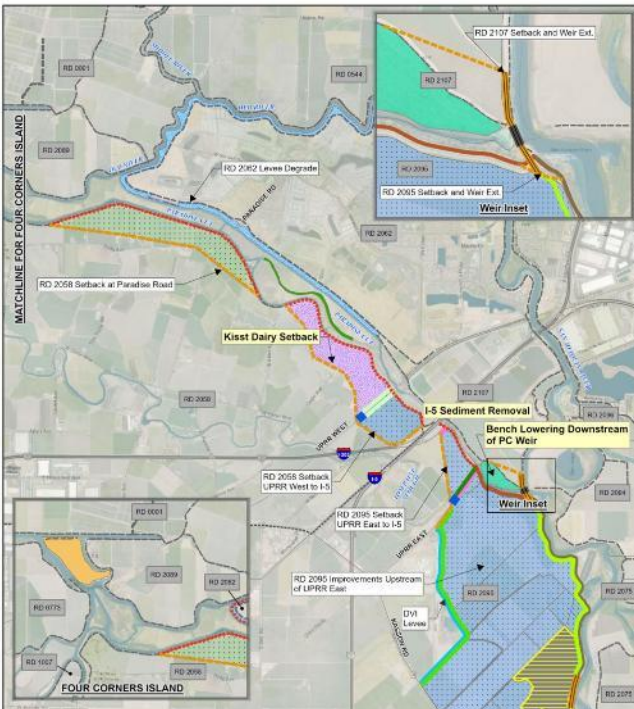
Attachment A

Scenarios

Scenario 1 – Potential Early Implementation Project (EIP)

The EIP combines several management actions that could potentially be the first phase of implementation of the Master Plan. This scenario is being evaluated as a readily implementable option and potentially competitive for State and Federal funding. It includes a setback levee in the Kisst Dairy reach, sediment removal at I-5, and bench lowering and riparian thinning downstream of the existing weir. The cost and hydraulic modeling results are shown below. Hydraulic modeling index locations are included in Attachment B.

Scenario 1 – Early Implementation Project	Cost
Kisst Dairy Setback	\$64,025,900
I-5 Sediment Removal	\$15,808,300
Bench Lowering Downstream PC Weir and Riparian Thinning	\$43,405,500



Index Point	Change in Maximum Water Surface Elevation from Existing (feet)	
	Scenario 1	
	100-Yr	200-Yr
San Joaquin River		
1. @ Banta Carbona Canal	-0.28	-0.61
2. @ Paradise Weir	-0.46	-1.55
3. @ I-5	-0.8	-1.5
4. @ Old River	-0.57	-1.15
5. @ Howard Road bridge	-0.48	-0.89
6. @ French Camp Slough	-0.34	-0.47
Paradise Cut		
7. @ UPRR-east bridge	-0.09	-0.82
8. @ I-5	1.03	0.06
9. @ UPRR-west bridge	1.76	0.5
10. @ Paradise Road bridge	1.87	0.9
Old River		
11. @ San Joaquin River	-0.57	-1.15
12. @ Middle River	0.32	-0.25
13. @ west end of Stewart Tract	1.21	0.49
14. @ Sugar Cut	1.15	0.48
15. @ Tracy Blvd bridge	1.11	0.49
Grant Line Canal		
16. @ Doughty Cut and Grant Line Canal	1.08	0.44
17. @ Tracy Blvd bridge	0.89	0.37
Middle River		
18. @ Undine Road bridge	0.29	-0.22
19. @ Howard Road bridge	0.26	-0.08

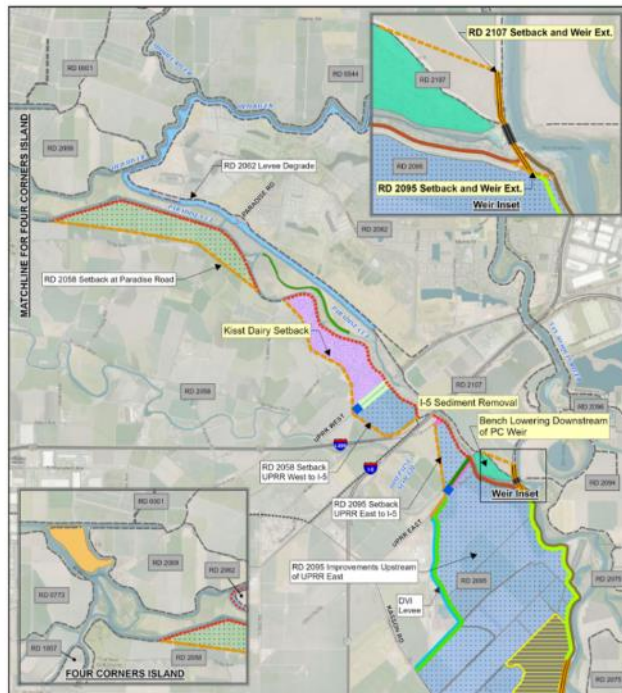
The Kisst Dairy setback adds 267 acres of land to the floodplain. Lowering the bench downstream of the existing Paradise Cut weir will result in 39 acres of more frequently

inundated floodplain and sediment removal at I-5 will result in 26 acres of more frequently inundated floodplain.

Scenario 1 significantly reduces flood stage in the urban areas on San Joaquin River. This scenario only provides modest benefit to the rural levees further upstream on the San Joaquin River (-0.3 ft for the 100-year) as shown at Index Point 1 (Banta Carbona Canal). This scenario does result in a significant increase in flood stage in Paradise Cut and downstream tributaries as a result of increasing the efficiency of the existing weir.

Scenario 2 – EIP (Scenario 1) plus RD 2107 and RD 2095 setback levee and weir extensions

Scenario 2 – Adding RD 2107 and RD 2095 setback levee and weir extensions to Scenario 1	Added Cost
RD 2107	\$17,483,100
RD 2095	\$7,124,300



Index Point	Change in Maximum Water Surface Elevation from Existing (feet)	
	Scenario 2	
	100-Yr	200-Yr
San Joaquin River		
San Joaquin River		
1. @ Banta Carbona Canal	-0.45	-0.71
2. @ Paradise Weir	-0.95	-2.16
3. @ I-5	-1.33	-2.57
4. @ Old River	-0.99	-2.01
5. @ Howard Road bridge	-0.83	-1.39
6. @ French Camp Slough	-0.53	-0.59
Paradise Cut		
Paradise Cut		
7. @ UPRR-east bridge	0.74	-0.21
8. @ I-5	1.61	0.45
9. @ UPRR-west bridge	2.27	0.83
10. @ Paradise Road bridge	2.28	1.08
Old River		
Old River		
11. @ San Joaquin River	-0.99	-2.01
12. @ Middle River	0.27	-0.59
13. @ west end of Stewart Tract	1.42	0.47
14. @ Sugar Cut	1.36	0.45
15. @ Tracy Blvd bridge	1.29	0.46
Grant Line Canal		
Grant Line Canal		
16. @ Doughty Cut and Grant Line Canal	1.27	0.42
17. @ Tracy Blvd bridge	1.04	0.33
Middle River		
Middle River		
18. @ Undine Road bridge	0.24	-0.53
19. @ Howard Road bridge	0.21	-0.22

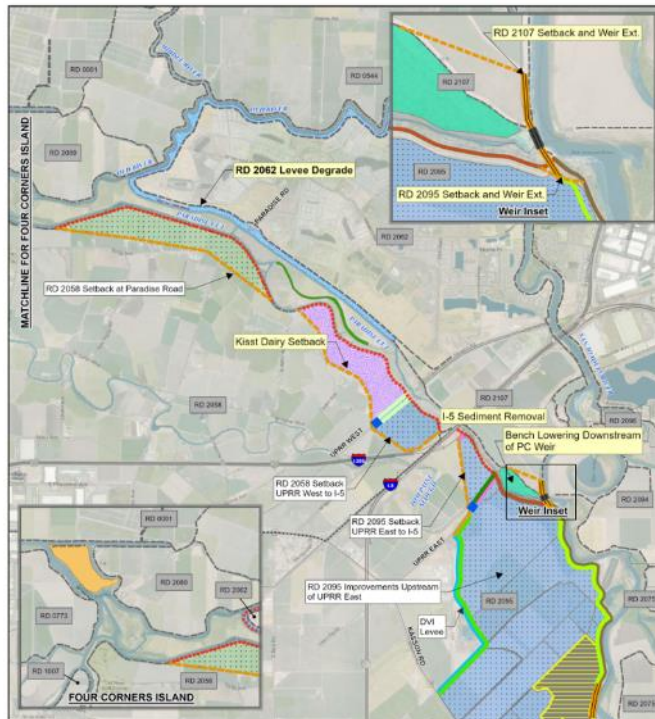
The RD 2107 setback and weir extension adds 25 acres of land to the floodplain and the RD 2095 setback and weir adds 7 acres.

Scenario 2 shows that extending the exiting weir in combination with the EIP segments can further reduce flood stages on the San Joaquin River in the urban areas. The stage reduction for the 200-year flood event on the San Joaquin River at I-5 increases from 1.5 feet

under scenario 1 to 2.6 ft with scenario 2. This scenario does show an increased benefit to the rural levees further upstream on the San Joaquin River (-0.5 ft for the 100-year) as shown at Index Point 1 (Banta Carbona Canal). This scenario does result in a significant increase in flood stage in Paradise Cut and downstream tributaries as a result of increasing the efficiency of the existing weir.

Scenario 3 – Adding RD 2062 Levee Degrade to Scenario 2

Scenario 3 – Adding RD 2062 Levee Degrade	Added Cost
RD 2062	\$34,259,500

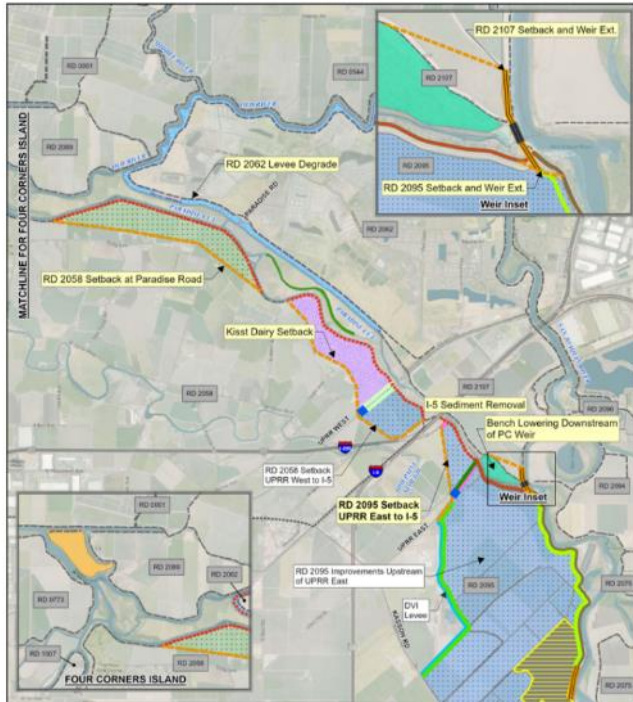


Index Point	Change in Maximum Water Surface Elevation from Existing (feet)	
	100-Yr	200-Yr
San Joaquin River		
San Joaquin River		
1. @ Banta Carbona Canal	-0.47	-0.74
2. @ Paradise Weir	-0.99	-2.21
3. @ I-5	-1.37	-2.65
4. @ Old River	-1.05	-2.09
5. @ Howard Road bridge	-0.87	-1.45
6. @ French Camp Slough	-0.55	-0.62
Paradise Cut		
Paradise Cut		
7. @ UPRR-east bridge	0.7	-0.24
8. @ I-5	1.51	0.37
9. @ UPRR-west bridge	2.15	0.73
10. @ Paradise Road bridge	2.17	1
Old River		
Old River		
11. @ San Joaquin River	-1.05	-2.09
12. @ Middle River	0.2	-0.66
13. @ west end of Stewart Tract	1.42	0.5
14. @ Sugar Cut	1.36	0.48
15. @ Tracy Blvd bridge	1.29	0.49
Grant Line Canal		
Grant Line Canal		
16. @ Doughty Cut and Grant Line Canal	1.27	0.44
17. @ Tracy Blvd bridge	1.04	0.35
Middle River		
Middle River		
18. @ Undine Road bridge	0.17	-0.6
19. @ Howard Road bridge	0.15	-0.26

The RD 2062 levee degrade adds 187 acres of land to the floodplain.

Scenario 3 shows that adding the RD 2062 levee degrade does not result in substantive reduction in stages on the San Joaquin River in the urban areas. The stage reduction for the 200-year flood event on the San Joaquin River at I-5 increases from 2.6 feet under scenario 2 to 2.7 ft with scenario 3. This scenario does not show an increased benefit to the rural levees further upstream on the San Joaquin River at Index Point 1 (Banta Carbona Canal) as compared to Scenario 2. This scenario does reduce some of the hydraulic impacts in Paradise Cut but increases impacts in Old River and the downstream tributaries.

Scenario 4 – Adding RD 2058 Setback at Paradise Road to Scenario 3



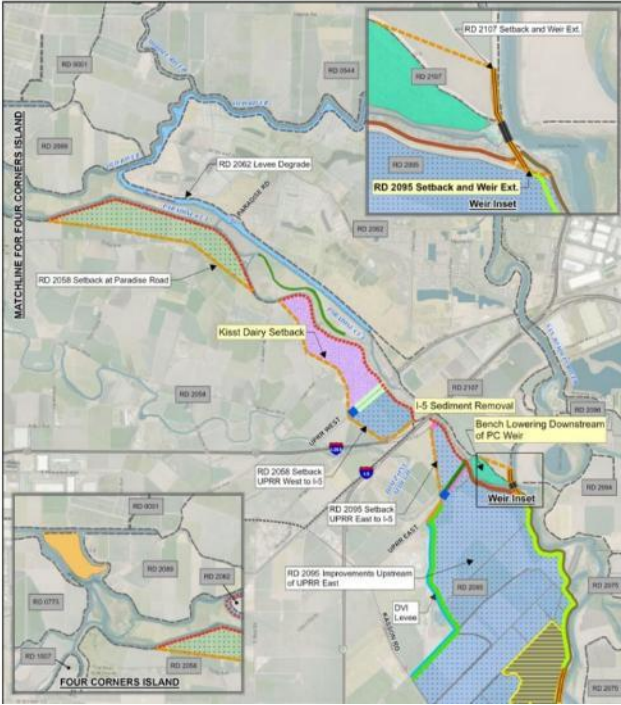
Index Point	Change in Maximum Water Surface Elevation from Existing (feet)	
	Scenario 5	
	100-Yr	200-Yr
San Joaquin River		
1. @ Banta Carbona Canal	-1.07	-1.06
2. @ Paradise Weir	-2.16	-3.06
3. @ I-5	-2.5	-3.49
4. @ Old River	-1.93	-2.71
5. @ Howard Road bridge	-1.53	-1.89
6. @ French Camp Slough	-0.9	-0.92
Paradise Cut		
7. @ UPRR-east bridge	-0.91	-1.47
8. @ I-5	1.65	0.76
9. @ UPRR-west bridge	1.91	0.7
10. @ Paradise Road bridge	1.49	0.64
Old River		
11. @ San Joaquin River	-1.93	-2.71
12. @ Middle River	0.02	-0.56
13. @ west end of Stewart Tract	1.63	1
14. @ Sugar Cut	1.67	1.08
15. @ Tracy Blvd bridge	1.57	1.04
Grant Line Canal		
16. @ Doughty Cut and Grant Line Canal	1.56	1.01
17. @ Tracy Blvd bridge	1.28	0.83
Middle River		
18. @ Undine Road bridge	-0.01	-0.51
19. @ Howard Road bridge	0.02	-0.21

The RD 2095 setback between the UPRR East and I-5 adds 97 acres of land to the floodplain.

Scenario 5 shows that reducing the tailwater on the UPRR East embankment increases the efficiency of the weir and further reduces flood stages on the San Joaquin River in the urban areas. The stage reduction for the 200-year flood event on the San Joaquin River at I-5 increases from 2.7 feet under scenario 4 to 3.5 ft with scenario 5. This scenario also shows an increased benefit to the rural levees further upstream on the San Joaquin River (-0.5 ft for the 100-year for scenario 4 and -1.1 ft for scenario 5) as shown at Index Point 1 (Banta Carbona Canal). This scenario does result in a significant increase in flood stage in Paradise Cut and downstream tributaries as a result of increasing the efficiency of the existing weir.

Scenario 6 – Adding RD 2058 setback between I-5 and UPRR West to Scenario 5

Scenario 6 – Adding RD 2058 Setback I-5 to UPRR West	Added Cost
RD 2058	\$56,554,800



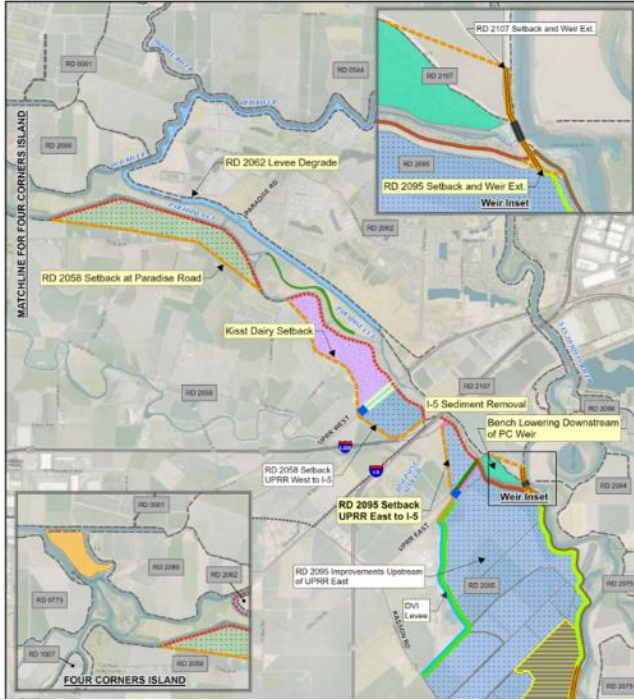
Index Point	Change in Maximum Water Surface Elevation from Existing (feet)	
	100-Yr	200-Yr
Scenario 7		
San Joaquin River		
1. @ Banta Carbona Canal	-0.44	-0.77
2. @ Paradise Weir	-0.86	-2.04
3. @ I-5	-1.24	-2.43
4. @ Old River	-0.92	-1.88
5. @ Howard Road bridge	-0.77	-1.3
6. @ French Camp Slough	-0.5	-0.51
Paradise Cut		
7. @ UPRR-east bridge	0.64	-0.4
8. @ I-5	1.54	0.39
9. @ UPRR-west bridge	2.21	0.81
10. @ Paradise Road bridge	2.23	1.18
Old River		
11. @ San Joaquin River	-0.92	-1.88
12. @ Middle River	0.29	-0.43
13. @ west end of Stewart Tract	1.4	0.56
14. @ Sugar Cut	1.34	0.54
15. @ Tracy Blvd bridge	1.27	0.47
Grant Line Canal		
16. @ Doughty Cut and Grant Line Canal	1.25	0.5
17. @ Tracy Blvd bridge	1.03	0.41
Middle River		
18. @ Undine Road bridge	0.26	-0.38
19. @ Howard Road bridge	0.22	-0.19

The RD 2095 setback and weir adds 7 acres of land to the floodplain.

Comparing Scenario 7 to Scenario 2 shows that omitting the RD 2107 setback and weir extension (as presented in scenario 2) does not significantly reduce the flood stage reduction benefits on the San Joaquin River in the urban areas. The stage reduction for the 200-year flood event on the San Joaquin River at I-5 decreases from 2.6 feet under scenario 2 to 2.4 ft with scenario 7. This scenario does not show a change in the benefits to the rural levees further upstream on the San Joaquin River as shown at Index Point 1 (Banta Carbona Canal). This scenario also does not result in a substantive change in impacts in Paradise Cut and downstream tributaries.

Scenario 8 – Adding RD 2062 Levee Degrade to Scenario 7

Scenario 8 – Adding RD 2062 Levee Degrade	Added Cost
RD 2062 Levee Degrade	\$34,259,500



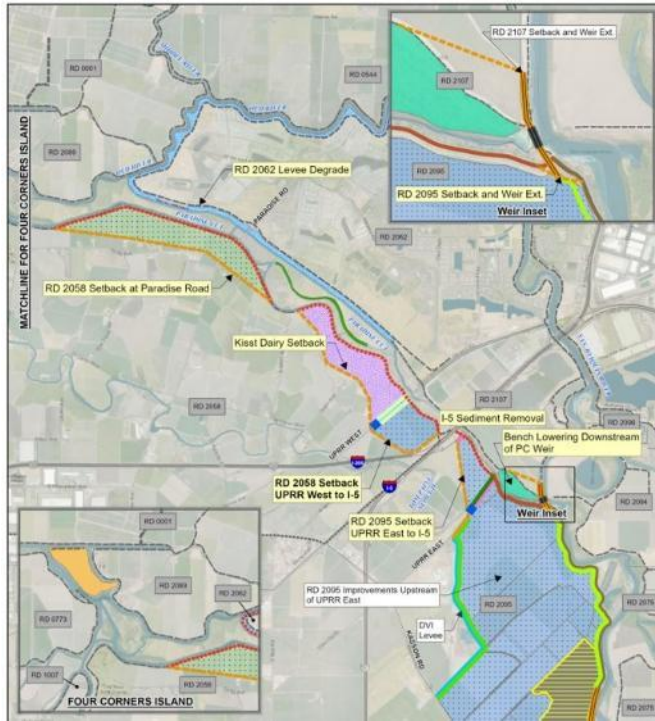
Index Point	Change in Maximum Water Surface Elevation from Existing (feet)	
	100-Yr	200-Yr
San Joaquin River		
Scenario 10		
San Joaquin River		
1. @ Banta Carbona Canal	-1.06	-1.06
2. @ Paradise Weir	-1.96	-2.83
3. @ I-5	-2.3	-3.27
4. @ Old River	-1.78	-2.54
5. @ Howard Road bridge	-1.41	-1.77
6. @ French Camp Slough	-0.84	-0.85
Paradise Cut		
Paradise Cut		
7. @ UPRR-east bridge	-1.09	-1.66
8. @ I-5	1.53	0.63
9. @ UPRR-west bridge	1.82	0.6
10. @ Paradise Road bridge	1.43	0.57
Old River		
Old River		
11. @ San Joaquin River	-1.78	-2.54
12. @ Middle River	0.04	-0.54
13. @ west end of Stewart Tract	1.59	0.95
14. @ Sugar Cut	1.63	1.03
15. @ Tracy Blvd bridge	1.54	0.99
Grant Line Canal		
Grant Line Canal		
16. @ Doughty Cut and Grant Line Canal	1.53	0.97
17. @ Tracy Blvd bridge	1.25	0.79
Middle River		
Middle River		
18. @ Undine Road bridge	0.02	-0.49
19. @ Howard Road bridge	0.04	-0.2

The RD 2095 setback between the UPRR East and I-5 adds 97 acres of land to the floodplain.

Scenario 10 shows that reducing the tailwater on the UPRR East embankment increases the efficiency of the PC Weir and further reduces flood stages on the San Joaquin River in the urban areas. The stage reduction for the 200-year flood event on the San Joaquin River at I-5 increases from 2.5 feet under scenario 9 to 3.3 ft with scenario 10. This scenario also shows an increased benefit to the rural levees further upstream on the San Joaquin River (-0.5 ft for the 100-year for scenario 9 and -1.1 ft for scenario 10) as shown at Index Point 1 (Banta Carbona Canal). This scenario does result in a significant increase in flood stage in Paradise Cut and downstream tributaries as a result of increasing the efficiency of the existing weir.

Scenario 11 – Adding RD 2058 Setback Levee I-5 to UPRR West to Scenario 10

Scenario 11 – Adding RD 2058 Setback Levee I-5 to UPRR West	Added Cost
RD 2058	\$56,554,800



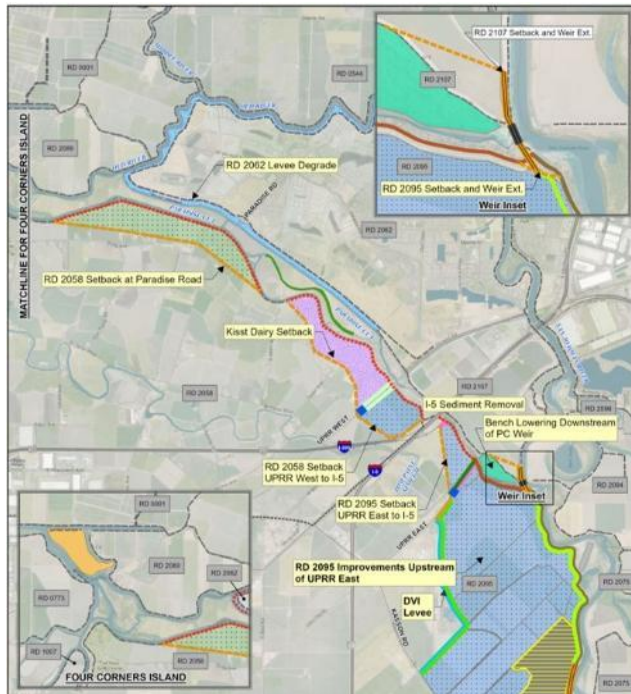
Index Point	Change in Maximum Water Surface Elevation from Existing (feet)	
	Scenario 11	
	100-Yr	200-Yr
San Joaquin River		
1. @ Banta Carbona Canal	-1.12	-1.12
2. @ Paradise Weir	-2.08	-2.95
3. @ I-5	-2.41	-3.39
4. @ Old River	-1.86	-2.63
5. @ Howard Road bridge	-1.47	-1.84
6. @ French Camp Slough	-0.87	-0.89
Paradise Cut		
7. @ UPRR-east bridge	-1.29	-1.9
8. @ I-5	0.9	0
9. @ UPRR-west bridge	1.58	0.4
10. @ Paradise Road bridge	1.46	0.62
Old River		
11. @ San Joaquin River	-1.86	-2.63
12. @ Middle River	0.03	-0.54
13. @ west end of Stewart Tract	1.61	0.99
14. @ Sugar Cut	1.65	1.07
15. @ Tracy Blvd bridge	1.55	1.03
Grant Line Canal		
16. @ Doughty Cut and Grant Line Canal	1.55	1.01
17. @ Tracy Blvd bridge	1.26	0.83
Middle River		
18. @ Undine Road bridge	0	-0.49
19. @ Howard Road bridge	0.02	-0.2

The RD 2058 setback UPRR West to I-5 adds 154 acres of land to the floodplain.

Scenario 11 shows that adding the RD 2058 setback UPRR West to I-5 only has minimal benefit to reducing flood stages on the San Joaquin River in the urban areas as compared to scenario 5 (-0.1 ft). This scenario also does not show an increased benefit to the rural levees further upstream on the San Joaquin River at Index Point 1 (Banta Carbona Canal) as compared to Scenario 10. This scenario does reduce hydraulic impacts in portions of Paradise Cut but not the downstream tributaries.

Scenario 12 – RD 2095 2,000 ft. Weir and Additional Improvements - Upstream of UPRR East as Proposed in Alt. 6B added to Scenario 11

Scenario 12 – RD 2095 Improvements Upstream of UPRR East as Proposed in Alt. 6B	Added Cost
RD 2095	\$294,904,000

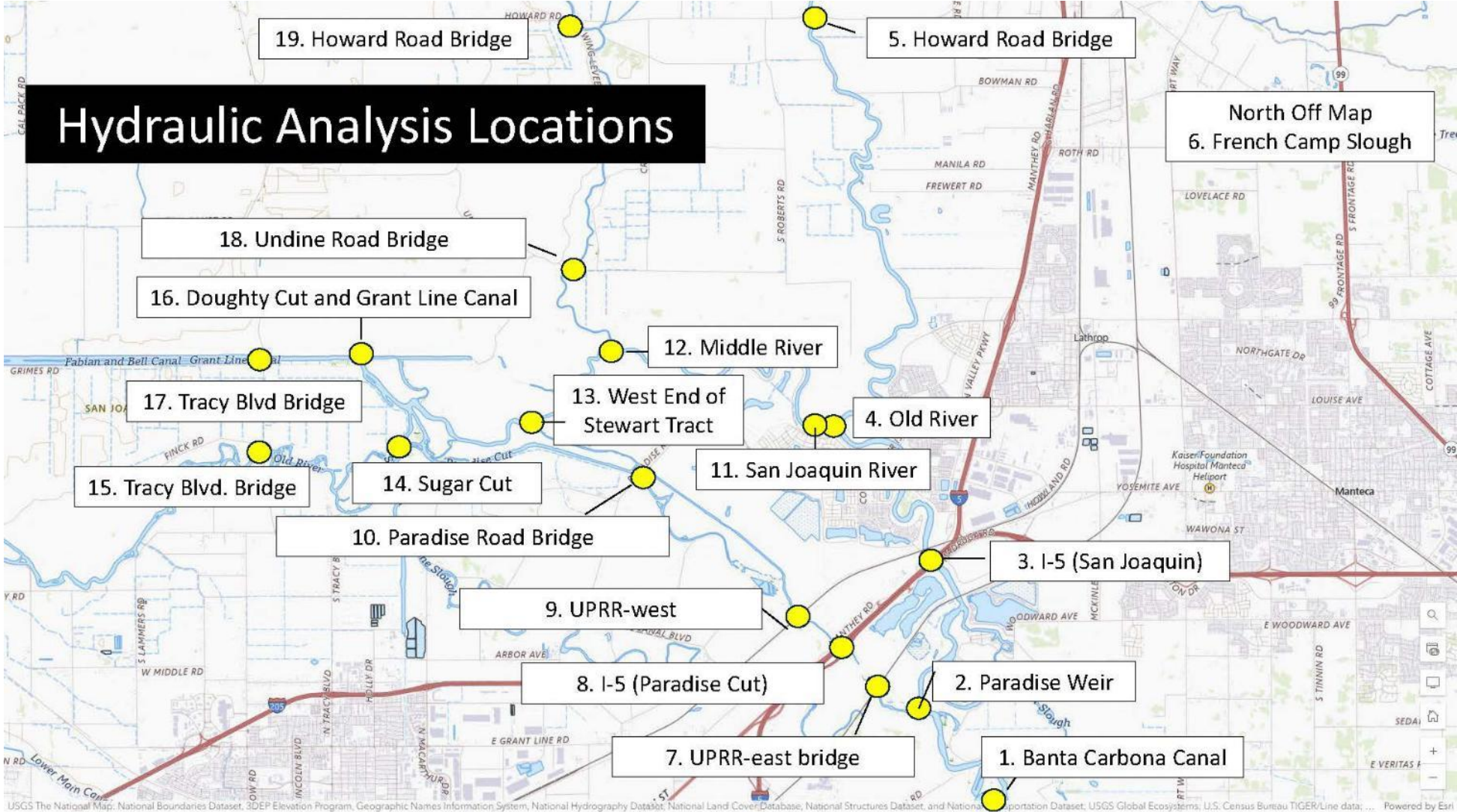


Index Point	Change in Maximum Water Surface Elevation from Existing (feet)	
	Scenario 12	
	100-Yr	200-Yr
San Joaquin River		
San Joaquin River		
1. @ Banta Carbona Canal	-4.9	-4.68
2. @ Paradise Weir	-3.96	-4.05
3. @ I-5	-4.16	-4.38
4. @ Old River	-3.23	-3.26
5. @ Howard Road bridge	-2.43	-2.28
6. @ French Camp Slough	-1.41	-1.14
Paradise Cut		
Paradise Cut		
7. @ UPRR-east bridge	-1.84	-1.41
8. @ I-5	1.3	1.29
9. @ UPRR-west bridge	1.88	1.56
10. @ Paradise Road bridge	1.54	1.5
Old River		
Old River		
11. @ San Joaquin River	-3.23	-3.26
12. @ Middle River	-0.44	-0.23
13. @ west end of Stewart Tract	1.54	1.74
14. @ Sugar Cut	1.58	1.81
15. @ Tracy Blvd bridge	1.49	1.71
Grant Line Canal		
Grant Line Canal		
16. @ Doughty Cut and Grant Line Canal	1.48	1.71
17. @ Tracy Blvd bridge	1.21	1.43
Middle River		
Middle River		
18. @ Undine Road bridge	-0.46	-0.2
19. @ Howard Road bridge	-0.27	-0.05

The new upstream weir in RD 2095 adds 2,093 acres to the floodway, of which up to 300 acres immediately downstream of the weir could be restored as habitat.

Scenario 12 shows that adding a new 2,000-foot upstream weir significantly decreases flood stages on the San Joaquin River in the urban areas. The stage reduction for the 200-year flood event on the San Joaquin River at I-5 increases from 3.4 feet under scenario 11 to 4.4 feet with scenario 12. It's also of interest to note that the benefit increases at this location from 4.2 feet with Scenario 13 to 4.4 feet with Scenario 12, showing that the weir extension into RD 2107 does not provide more benefits over just the RD 2095 extension. This scenario also shows a significant increase in benefits to the rural levees further upstream on the San Joaquin River (-1.1 ft for the 100-year for scenario 11 and -4.9 feet for scenario 12) as shown at Index Point 1 (Banta Carbona Canal). This scenario does result in a significant increase in flood stage in Paradise Cut at the UPRR East embankment, but the impacts quickly decrease downstream of these points to be very close to those of Scenario 6.

Hydraulic Analysis Locations



USGS The National Map, National Boundaries Dataset, SDEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset, USGS Global Ecosystems, U.S. Census Bureau TIGER/Line data, ... Powered by Esri

Management Actions Category	Specific Management Action / Location	Alternative
		6b
CHANNEL RESTORATION		
Dredging	48.5-mile extent	X
FLOOD RISK MANAGEMENT		
Upstream Weir	New upstream weir - 2,000 ft	X
Levee Modifications	Degrade left bank levee, existing weir to east UPRR (RD 2095)	X
	Degrade and setback left bank levee, east UPRR to I-5 (RD 2095)	X
	Degrade and setback left bank setback levee, I-5 to west UPRR (RD 2058)	X
	Degrade and setback left bank levee at Kisst Dairy (RD 2058)	X
	Degrade and setback left bank levee at Bend 16 (RD 2058)	X
	Degrade and setback left bank levee downstream of Bend 16 (RD 2058)	X
	Improve Deuel Vocational Institution levee (RD 2095)	X
Modifications to crossings	Create a setback levee upstream of Deuel Vocational Institution (RD 2095)	X
	Create a new 500 ft opening in the east UPRR crossing	X
Modifications to crossings	Create a new 500 ft opening in the west UPRR crossing	X
		X
ECOSYSTEM RESTORATION		
Paradise Cut Bypass Expansion Habitat Concepts	Concept 1: hydrogeomorphic zone	X
	Concept 2: wind-wave buffer - San Joaquin River	X
	Concept 3: wind-wave buffer - Deuel levee	X
	Concept 4: wind-wave buffer - UPRR East	X
	Concept 5: floodplain enhancement - Kisst Dairy	X
	Concept 6: wind-wave buffer - UPRR West	X

	Concept 7: channel widening	X
	Concept 8: floodplain enhancement – RD 2058	X
	Concept 9: habitat enhancement – Four Corners island (Salmon Slough Restoration)	X
	Concept 10: wildlife enhancement	X
	Concept 11: expanded floodplain – RD 2062	X
San Joaquin River habitat restoration	Restore habitat within the San Joaquin River floodplain (12 sites) ¹¹	X

¹¹ Twelve different sites along the San Joaquin River were carried forward as opportunities to restore floodplain habitat (see Chapter 5) and grouped into one action in the table. These floodplain habitat restoration sites along the San Joaquin River are neither explicitly included nor excluded from the final array of alternatives. The restoration opportunities will be considered separately for inclusion in the preferred alternative.

ATTACHMENT D

TO: Paradise Cut Bypass Expansion and Multi-Benefit Project Feasibility Study Advisory Committee

FROM: Glenn Prasad, Deputy Executive Director
San Joaquin Area Flood Control Agency

RE: Paradise Cut Bypass Expansion and Multi-Benefit Project Feasibility Study Master Plan Selection

DATE: March 25, 2026

RECOMMENDED ACTION

Provide input on the proposed Master Plan alternatives and advise SJAFCA and the study team on the alternative that should be carried forward as the Paradise Cut Master Plan.

Agenda items that concern this recommended action include:

1. Paradise Cut Feasibility Study Update
2. Incremental Hydraulic Analysis
3. Master Plan Alternatives

BACKGROUND

As discussed at the previous Advisory Committee meeting on January 12, 2026, additional technical work was initiated to refine the project following evaluation of the final alternatives in the Feasibility Study. This effort focuses on developing a long-term Master Plan for Paradise Cut that identifies a comprehensive project vision while allowing for phased implementation as funding becomes available.

The Master Plan concept is intended to show how individual project elements could be implemented incrementally over time while achieving a project comparable in scale to the larger bypass expansion alternatives previously studied (Alternatives 3B and 6B). A memo describing the analysis to develop the Master Plan Alternatives is included as Attachment A.

MASTER PLAN ALTERNATIVES

The study team evaluated a range of potential management actions and developed two Master Plan alternatives for consideration.

Master Plan A – Expanded Master Plan

This alternative includes the full set of recommended management actions identified through the scenario evaluation, including a new upstream weir in RD 2095, setback levees, sediment removal under I-5, bench lowering and riparian thinning downstream of the existing weir, and South Delta channel restoration. This alternative would add approximately 3,257 acres to the floodplain and provides the greatest overall hydraulic and ecosystem benefits.

Master Plan B – Refined Master Plan

This alternative removes several management actions from the Expanded Master Plan that provide limited hydraulic benefit but add cost and/or regulatory complexity. While this alternative reduces the total floodplain acreage, it retains the key project components that provide the majority of flood risk reduction and ecosystem benefits.

The selected alternative will be implemented in phases, beginning with early implementation actions that are most likely to compete successfully for state and federal funding and will be determined based on future work products.

ADVISORY COMMITTEE INPUT

The feasibility study team will present the incremental hydraulic analysis results, Master Plan alternatives, and obtain input from the Advisory Committee on the preferred long-term direction for the project. Specifically, the study team is seeking feedback on:

- Additional management actions that should be added or removed from the recommended alternative;
- Any additional considerations that should be addressed before selecting a Master Plan alternative;
- Whether the Advisory Committee supports carrying forward Master Plan A or Master Plan B as the Paradise Cut Master Plan, or some variation there of;
- Any considerations for developing the implementation phases.

The input received will help SJAFCA and DWR refine the preferred Master Plan and develop the phased implementation strategy for the next stage of the project.